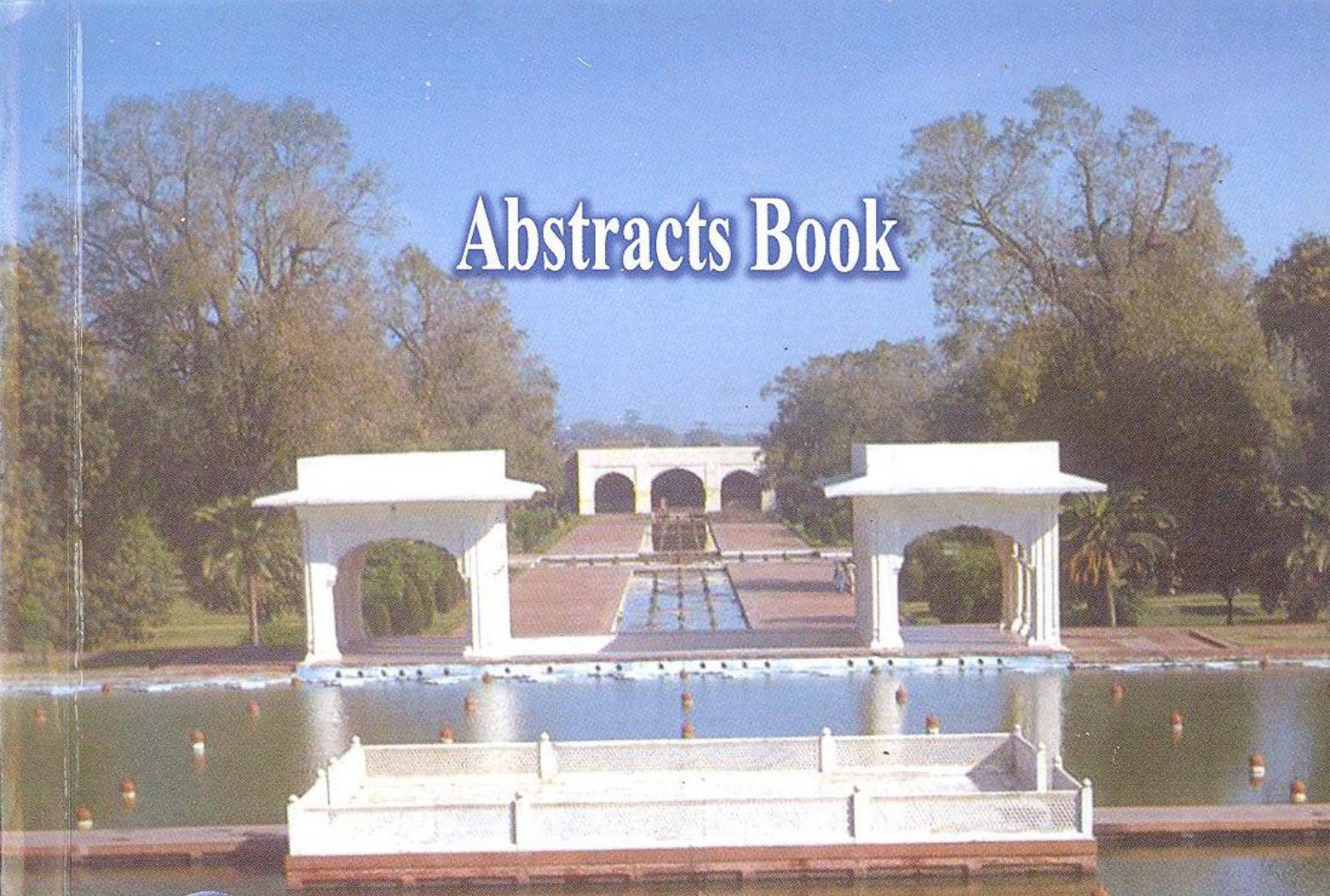
Abstracts Book



5th BIENNIAL INTERNATIONAL CONFERENCE

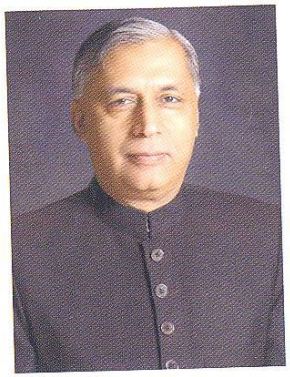
of the Pakistan Society of Cardiovascular and Thoracic Surgeons &

1st Heart Summit of Emergent Countries

27th-29th MARCH, 2005 LAHORE, PAKISTAN

Hosted by: Punjab Institute of Cardiology, Lahore-Pakistan.

WORLD HEART FEDERATION'



MESSAGE FROM MR SHAUKAT AZIZ PRIME MINISTER OF PAKISTAN

I am delighted to know that Pakistan has taken the lead in the ongoing development of professional medical education by organizing the 5th Biennial International Conference of the Pakistan Society of cardiovascular and Thoracic Surgeons and the 1st Heart Summit of Emergent Countries.

I offer my heartiest felicitations to the organizers of this conference, which is being held in the very heart of Pakistan the historic city of Lahore. Their initiative is, indeed, highly commendable and in the spirit of progressive thinking on the subject.

I extend to all the visiting delegates a warm welcome and a very pleasant stay in our country. May their endeavors be blessed with success.

SHAUKAT AZIZ
PRIME MINISTER OF PAKISTAN

MESSAGE FROM GENERAL PERVEZ MUSHARRAF PRESIDENT OF PAKISTAN

It gives me immense pleasure to learn that the "5th Biennial International Conference of the Pakistan Society of Cardiovascular and Thoracic Surgeons" and the "1st Heart Summit of Emergent Countries" is being hosted by the Punjab Institute of Cardiology in Lahore, a seat of excellence in the field of Cardiovascular and Thoracic Surgery.

I wish the organizers and distinguished delegates my best on this auspicious occasion with the hope that Pakistan plays a lead role in taking the initiative towards better health education as well as becoming a pioneer in the development of Adult and Pediatric Interventional Cardiology and Cardiothoracic surgery in this summit of Emergent Countries.

May Allah Almighty be with us.

GENERAL PERVEZ MUSHARRAF
PRESIDENT ISLAMIC REPUBLIC OF PAKISTAN


بسم الله الرحمن الرحيم

MESSAGE FROM GOVERNOR PUNJAB

I am pleased to welcome the distinguished cardiothoracic surgeons & cardiologist from Pakistan and abroad to the 5th Biennial International Conference of the Pakistan Society of Cardiovascular and Thoracic Surgeons & 1st Heart Summit of Emergent Countries.

The Conference will provide an opportunity for the professionals to share their knowledge and experience on latest advances in the management of heart diseases.

Government of the Punjab has always been very supportive of such academic events. It has been our policy to set up state of the art centers for health care facilities and to promote the use of latest technologies among the doctors.

The conference is being staged in Lahore, which is hub of cultural and academic activities. I hope that our distinguished guests will find some time from busy academic activities to enjoy the historical & beautiful sites of the city.

I wish the participants of the conference a pleasant, comfortable and academically rewarding stay in Lahore

Pakistan Zindabad

LT. GEN. (RETD.) KHALID MAQBOOL
GOVERNOR OF THE PUNJAB

MESSAGE FROM CHIEF MINISTER PUNJAB

It gives me immense pleasure to learn that the Punjab Institute of Cardiology, the seat of excellence in the field of Interventional Cardiology and cardiothoracic Surgery in Lahore, is to host the heart summit of the Emergent Countries.

I hope that the summit will be a breakthrough to a more scientific era in the current developing world especially in the emergent countries of the South Asian region. Furthermore it is heartening to see that Pakistan has taken the initiative to organize the first session.

I hope that the distinguished delegates find the workshops and academic sessions to be very informative, thus providing us a guideline for future developments in the concerned field of medicine and surgery.

MR PARVEZ ELAHI,
CHIEF MINISTER PUNJAB.

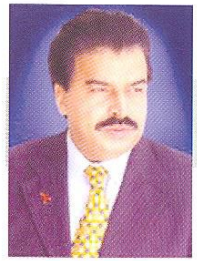
MESSAGE FROM HEALTH MINISTER PUNJAB

The Pakistan Society of Cardiovascular & Thoracic Surgeons and Punjab Institute of Cardiology have arranged "5th Biennial International Conference and 1st Heart Summit of Emergent Countries. It gives an opportunity to young doctors to be benefited from experiences and specialties of senior doctors. The Punjab Government has always welcomed such conference /workshops in which mutual know –how is exchanged. The present government is focusing on the provision of health care facilities to the common people specially people living in the remote and far-flung areas and has taken revolutionary steps in the field of heath within the short span of time so that latest medical facilities could be provided to the people at their door steps. The Government would upgrade the status of DHQs, THQs, and RHCs and surgeons, lady doctors and other infrastructure is being provided in these hospitals.

In Pakistan itself, more than 40 % adult population over the age of 45 suffers from non communicable disease, such as heart disease, high blood pressure 7 cancer and the trend seems to be go on rise .This increasing trend is likely to double the burden of disease in countries such as ours clearly, is likely to have significant health economic implication as a result of cost of care and lost productivity cost. The Punjab Government has started the project of Multan Institute of Cardiology (MIC) would be completed within stipulated time and heart patients belonging to southern Punjab, adjoining districts of Sindh and Balochistan would be benefited from this Institute .

I hope the Society & PIC would extend their efforts to provide expert opinion to the patients of far-flung and less privileged areas.

(DR TAHIR ALI JAVED)
MBBS (KEMC), MD (USA), MACP (USA)
MINISTER FOR HEALTH, PUNJAB.



MESSAGE FROM FEDERAL MINISTER HEALTH

It is a matter of great honor and pride for the Pakistan and especially lahorites that the 5th biennial international conference of cardiovascular and thoracic surgeons and 1st heart summit of emergent countries is being held in the heart of Pakistan. The theme of the conference is "Development of Adult and Pediatric Cardiology and Cardiothoracic Surgery in Emergent Countries" is the topic which really needs advancement and research through out the World. I hope the participants will learn a lot about the latest developments in this field from the distinguished multidisciplinary faculty of healthcare leaders. I am confident that these distinguished individuals will make a lasting and effective contribution in the field of cardiac surgery not just within Pakistan but worldwide. I welcome the international delegates in our beloved homeland. I hope they will enjoy our traditional hospitality and culture .God bless you all.

NASIR KHAN
FEDERAL MINISTER OF HEALTH.

MESSAGE FROM PRESIDENT PAKISTAN SOCIETY OF CARDIOVASCULAR & THORACIC SURGEONS

Dear Colleagues,

I on behalf of the Pakistan Society of Cardiovascular & Thoracic Surgeons, looking forward to welcome you in the historic city of LAHORE, to participate in the 5th Biennial International Conference of the Pakistan Society of Cardiovascular & Thoracic Surgeons.

The convener & the Organizing Committee have chalked out a very elaborate, Scientific, Social, Cultural and Tourism program for you.

It is going to be an event to be enjoyed along with your families and not to be missed.

So, please set aside 27th to 29th of March 2005 to be present on LAHORE.

With very best wishes.

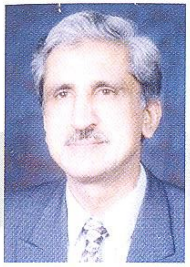
PROF PARVEZ MANNAN
PRESIDENT PAKISTAN SOCIETY OF
CARDIOVASCULAR & THORACIC SURGEONS.

MESSAGE FROM CHAIRMAN ORGANIZING COMMITTEE

It is a great pleasure to welcome our distinguished guests to the "5th Biennial International Conference of the Pakistan Society of Cardiovascular and Thoracic Surgeons" and the "1st Heart Summit of Emergent Countries". On behalf of Organizing Committee I am grateful to you all who have shown interest and have supported us throughout the last year while we were preparing for this summit.

We shall do our utmost efforts to make your stay as memorable as possible to this historic city of Lahore which has been seat of learning for the past many centuries in the region. We shall convene the emergent countries from the platform of our beloved homeland. We had made this attempt to get regional people who have similar problems, together them on one platform, to discuss and learn from each other experiences. This will help us to shape a continued medical education program, exchange of trainees and medical personnel. I again wish you all a warm welcome. Our organizing committee has also planned various cultural programs for you and visit to old historical places in Lahore, which we hope that you would enjoy.

PROF. JAWAD SAJID KHAN. (S. IMTIAZ)
CHAIRMAN ORGANIZING COMMITTEE.



THE MESSAGE FRON PRESIDENT PAKISTAN CARDIAC SOCIETY

On behalf of Pakistan Cardiac Society, it is my pleasure and honour to write few lines on the occasion of 5th Biennial International Conference of Pakistan Society of Cardiovascular and Thoracic Surgeons and 1st Heart Summit of Emergent Countries to be held on 27th – 29th of March 2005 at Lahore.

I am please to know that experts in the field of cardiology from 50 emergent countries are to participate in this conference to share their experience, knowledge and skills regarding latest issues and recent developments in various fields of Cardiology. Lahore is the Heart of Pakistan with its historical and cultural background. In addition to scientific sessions covering adult and paedriatitic cardiology and cardiothoracic surgery, wonderful social events and tours have been arranged to make it one of a memorable occasion.

I appreciate the efforts of Prof. Jawad Sajid Khan and his team for the hard work in arranging such a successful international conference. I am sure this conference will go a long way in increasing the public awareness and education of our colleagues regarding the new developments in the field of cardiology. It will give an excellent opportunity to interact and learn from each other experience in dealing with ever increasing cardiovascular disease.

I once again appreciate the effort of Prof. Jawad Sajid Khan and his team for their efforts to organize this conference and wish them all the success.

PROF. KARAMAT ALI SHAH
PRESIDENT
PAKISTAN CARDIAC SOCIETY

MESSAGE FROM FOUNDER-PRESIDENT, PAKISTAN HYPERTENSION LEAGUE

I take this opportunity to congratulate Prof. Jawad Sajid Khan and his team for organizing the **"First Heart Summit of Emergent Countries"** on the occasion of the **"5th Biennial International Conference of the Pakistan Society of Cardiovascular and Thoracic Surgeons"** 27-29th March, 2005.

The theme of talking stock of the state of Cardiology in emergent countries especially Pakistan is timely and very appropriate. This will provide the opportunity and the forum to address the barriers to development of Cardiological Science in our midst, and, provide means and modes of redressing the challenges.

We all look forward to a very successful conference and meeting of minds and hearts.

(Prof. Azhar Masood A. Faruqui, SI)
MBBS; FACC; FRCPS FCPS; FAHA
Founder-President,
Pakistan Hypertension League,
Executive Director,
Professor of Cardiology & Chairman,
Academic Faculty.

MESSAGE FORM PRESIDENT PAKISTAN PAEDIATRIC CARDIOLOGY SOCIETY

It gives me great pleasure to support the endeavors of Punjab Institute of cardiology in arranging the 1st Heart Summit of Emergent Countries and the 5th Biennial international Conference of Pakistan society of thoracic and cardiovascular surgeons.

Solving the problem of developing paediatric cardiac surgery in Pakistan is the order of the day. Adult Cardiac diagnostic, intervention and surgical services are well established in Pakistan. Paediatric cardiologist and paediatric cardiac services including catheter interventions are available in most provinces of Pakistan. The paediatric cardiac surgery, at present , is being done by adult cardiac surgeons thus surgery in infants and new born is mostly palliative.

We need to encourage and train paediatric cardiac surgeons in Pakistan on urgent basis.

I, as president of Pakistan Paediatric Cardiology Society, am glad that regional cooperation is being discussed as a means to develop these services in the regions where they do not exist as yet. I wish the conference all the success and am looking forward to participate in the conference and make new friendships.

You're Sincerely

PROF. KALIMUDDIN AZIZ
MBBS, DCH (LONDON), FRCP (E),
DIPLOMATE A.P.B.,
PROF. EMERITUS OF PAEDS CARDIOLOGY,
NATIONAL INSTITUTE OF CARDIOVASCULAR DISEASES.

MESSAGE FROM PRESIDENT, PAKISTAN SOCIETY OF INTERVENTIONAL CARDIOLOGY

5th Biennial International Conference and 1st Heart Summit of Emergent Countries is dedicated to cardiovascular surgeons, interventional cardiologists and allied professionals interested in the improvement of patient care in cardiovascular field.

First Heart Summit of Emergent Countries is being hosted by Punjab Institute of Cardiology Lahore, Pakistan. Its main objective is to balance a clinically oriented programme maintaining evidence-based medicine and incorporating data from modalities on one hand, and newer technologies on the other.

Each Summit is driven by desire to continually improve. This has been shown by increasing interest and participation by doctors from home and abroad. However, the basic of such summit remains constant: EDUCATION AND AWARENESS, whilst keeping a critical and ethical spirit.

The advancement, in the field of interventional cardiology is fascinating indeed.

The programme of summit consists of coronary percutaneous cardiac interventions, live telecast from various centres, state-of-the-art and interactive discussion of the "best and worst" cases in interventional cardiology.

First Heart Summit of Emergent Countries is the fruit of dedicated and sincere efforts of Organisers, who dedicated their time and efforts in bringing this summit within our easy reach.

PROF. M M H NURI
PRESIDENT, PAKISTAN SOCIETY OF INTERVENTIONAL CARDIOLOGY

MESSAGE FROM PRESIDENT SAARC CARDIAC SOCIETY

The Punjab Institute of cardiology is hosting the 1st heart Summit of Emergent Countries in Lahore. Lahore is a unique city in many ways, but the hospitality offered by Lahoriites is unmatched anywhere globally. Additionally it is among the oldest centers for education in South Asia. This region encloses a fifth of mankind within its borders. This is also one of the poorest, with sporadic prosperity and likewise less than optimal healthcare facilities with centers of excellence spread out, although thinly, in almost all countries of the region. While still struggling to overcome the problem of communicable diseases, poor sanitation and non-availability of potable diseases like atherosclerotic vascular diseases, Hypertension and Diabetes. The coronary artery disease is now an epidemic, along with Rheumatic heart disease the prevalence of which is still unacceptably high.

The 1st Heart summit of Emergent Countries is being organized to address these issues in the world. The deliberations during this congress should provide us with direction for developing management and preventive guidelines for countries like ours.

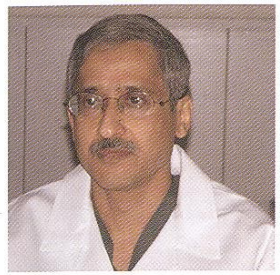
The SAARC Cardiac Society fully endorses, and supports the objective of this mega event. The South Asian population is particularly at higher risk. Certain major risk factors have been identified and commonly present in our community. South Asians, living in other part of globe are showing similar trend. Among other risk factors, the metabolic syndrome i.e. central obesity, high triglyceride, low HDL, insulin resistance is much more common in South Asian and probably the major factor for high incidence of Coronary Artery Disease.

The lesson learnt from developed countries indicates clearly that preventive measures are by par most cost effective way to control it.

I on behalf of SAARC cardiac Society particularly the Executive council congratulate Prof Jawad Sajid Khan, the Executive Director, Punjab Institute of Cardiology, and his team for organizing this landmark congress and wish him great success.

PROF MANSOOR AHMAD, FRCP
PRESIDENT,
SAARC CARDIAC SOCIETY,
HEAD DEPARTMENT OF CARDIOLOGY,
LIAQUAT NATIONAL HOSPITAL, KARACHI.

MESSAGE



Message Chairman Scientific Committee of 1st Heart Summit of Emergent Countries Prof Muhammad Azhar

It gives immense pleasure to welcome all participants of the 1st Heart Summit of Emergent Countries to the city of Lahore. This is indeed an honour for us to host this conference to address the most important issue of development of Adult and Paediatric Cardiology in Emergent Countries. We intend to provide a platform to discuss the problems and issues faced by doctors of the emergent countries who have come to attend this conference. We have arranged live case demonstrations to be transmitted to the conference venue for the delegates attending this meeting, this will serve as a platform to learn advanced technology and latest techniques. Furthermore we have a very elegant faculty coming from abroad, most of them are renowned personalities. We have arranged state of the art lectures as well hence doctors attending will have an opportunity to learn and polish their skills.
I am thankful to my team and all those who have helped us in this endeavor. The Scientific committee wishes you a pleasant stay at Lahore.

Prof Muhammad Azhar
Chairman Scientific Committee
1st Heart Summit of Emergent Countries

Message for Chairman Scientific Committee 5th Biennial International Conference

It is indeed a great pleasure for me to welcome all the distinguished delegates of the 5th Biennial International Conference of the Pakistan Society of Cardiovascular and Thoracic Surgeons. This conference has been organized keeping in view current problems faced by the less privileged countries. Surgeons coming from different countries will have an opportunity to listen to elites in the fields of Cardiac, Thoracic and Vascular Surgery. While organizing the scientific program our main concern was to provide a forum to discuss the development of Paediatric and Adult Cardiothoracic Surgery in the Emergent Countries. The conference workshop and scientific sessions are an effort to update the participants of the recent advances in the field of Cardiovascular and Thoracic surgery.
I am thankful to the members of the Pakistan Society of Cardiovascular and Thoracic Surgeons for their active participation in this Conference.
The Scientific committee wishes you a pleasant stay at Lahore.

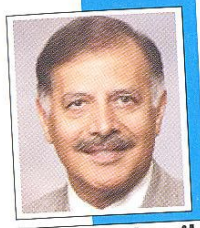
Dr Abdul Waheed
Chairman Scientific Committee
5th Biennial International Conference of the Pakistan Society of Cardiovascular and Thoracic Surgeons

MESSAGE FROM CONFERENCE SECRETARY

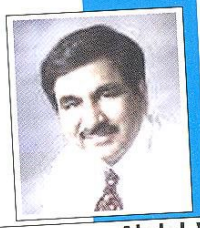
Organizing this heart summit was a wonderful experience for me. I would say that it was not an easy task and I would extend appreciation to all those who worked with me day in and night to make this event possible. It was a thorough team effort and it gives us great pleasure to bring forth a conference of magnanimous importance that is all about sharing knowledge and not to forget the cultural exchange that goes with it. While focus was to highlight the problems of adult and paediatric cardiology and cardiothoracic surgery in emergent countries the fun filled gala and social program was planned to add a lighter touch to it. In the end I hope that our efforts are fruitful and benefit those who have attended the conference.
I wish you a very happy trip to Lahore.

DR.AHMAD SHAHBAZ
CONFERENCE SECRETARY

GUEST FACULTY

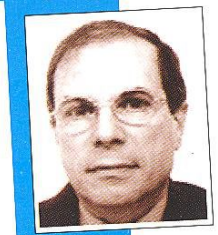


A. Jamil Tajik
Professor of Medicine and Pediatrics
Mayo Clinic – USA



Abdul Wase
Associate Clinical Professor of Medicine & Director of Cardiology Fellowship Program, Wright State University School of Medicine, Ohio, USA

Amit Banerjee,
Professor of Cardiothoracic Surgery, Govind Ballabh Pant Hospital, New Delhi, INDIA



Antonio Maria Calafiore
Professor of Cardiac SurgeryUniversity of Torino Torino-ITALY

Arshad Jahangir
Associate Professor of Medicine
Consultant Cardiac Electrophysiologist
Director, CardioGerontology Research Laboratories Mayo Clinic,
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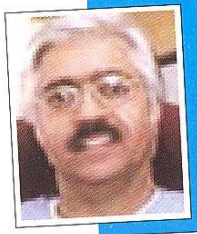
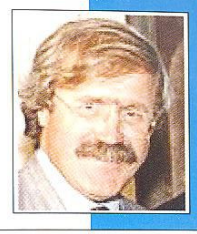
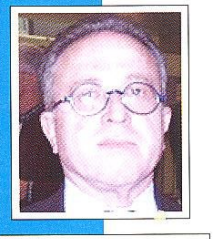


Ashok Seth
Chairman & Chief Consultant
Max Devki Devi Heart & Vascular Institute, New Delhi, INDIA

Bunyad Haider
Professor of Medicine Executive Vice Chairman, Department of Medicine / Division of Cardiology UMDNJ, New Jersey Medical School, USA



Carlo F. Marcelletti
Prof of Paediatric cardiac Surgery, Rome-ITALY



Carlo Vosa
Pediatric Cardiac SurgeonProf. of Cardiothoracic Surgery Second University of NaplesMnaldi Hospital, NaplesITALY

Carlos Julio Troconis
Pediatric Cardiac Surgeon
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DEDE KUSMANA
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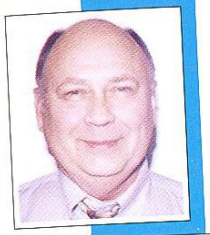

Dimitri Novitzky
Professor of Cardiothoracic Surgery, University of South Florida, Tampa, USA

Fausto Pinto
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Gambhir Lal
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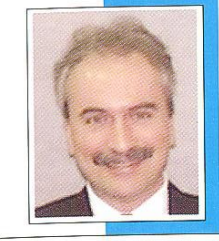
Grayson H. Wheatley
Consultant Cardiothoracic Surgeon,Arizona Heart Institute, USA

Harinder Singh Bedi
Executive Director / Chairman Cardiac Sciences Sigma New Life Heart Institute, Ludhiana, INDIA

Iftikhar Kullo
Associate Prof. of Medicine Mayo Clinic, Rochester, Minnesota USA



James D. Fonger
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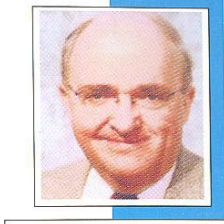
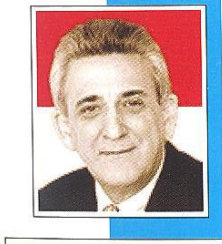


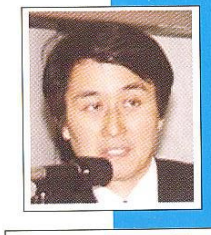
Jim Wilkinson
Consultant Pediatric Cardiologist Royal Children's Hospital, Melbourne AUSTRALIA

Kanu Chatterjee
Professor of Medicine University of California, San Francisco **USA**

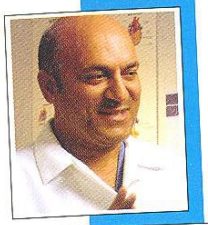
Manotosh Panja
Professor & Head, Department of Cardiology Institute of Postgraduate Medical Education and Research, SSKM Hospital, Kolkatta - **INDIA**



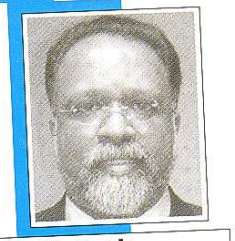
Mario F. De Camargo Maranhao
Professor & Past President World Heart Federation, Evangelic School of Medicine & Hospital, Curitiba, Paana, , BRAZIL



Masashi Komeda
Professor Cardiovascular Surgery Kyoto University Graduate School of Medicine, JAPAN



Masood Akhtar
Clinical Professor of Medicine (CHS)
University of Wisconsin
Medical School Milwaukee Clinical
Campus USA



Mural P Vettath
Malabar Institute of Medical
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Naresh K Trehan
Escorts Heart Institute and
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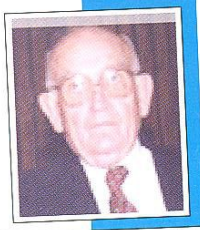
New Delhi, India



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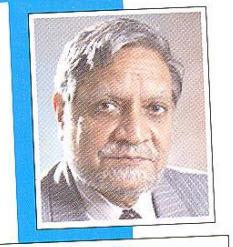
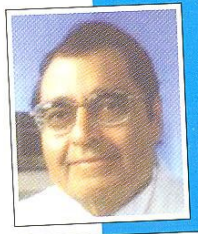
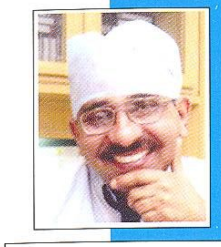


Naranjan S. Dhalla
Distinguished Professor &
Director St. Boniface General
Hospital Research Centre, University of
Manitoba, CANADA



Navin C. Nanda
Professor of Medicine & Director Heart
Station / Echocardiography Laboratory,
The University of Alabama at Birming-
ham, Birmingham, Alabama USA



OP Yadava
Chief Cardiac Surgeon
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New Delhi, INDIA

Ozlem Soran
Associate Prof. of Medicine,
Director of ECP Research Lab,
University of Pittsburgh,
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Roberto R. Favaloro
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Omer Isik
Professor of Cardiovascular
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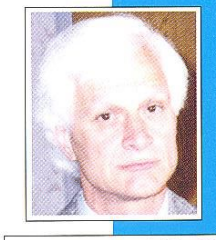
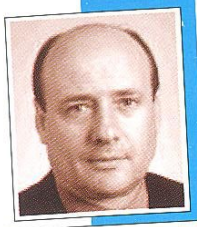
School of Medicine, Istanbul, TURKEY

R Lange
Director Cardiac Surgery German Heart
Centre Munich GERMANY



Rodolfo Neirotti
Director Pediatric Surgery
De Vos Children' Hospital USA



Roger B Mee
Chairman Dept. of Pediatric & Congenital Heart Surgery The Children Hospital Cleveland Clinic Foundation **USA**

S Rajan,
Institute of Cardiovascular Diseases, Chennai, INDIA

Suresh G Rao
Chief Pediatric and Congenital Heart Surgeon Amrita Institute of Medical Sciences, Kochi, Kerala, INDIA

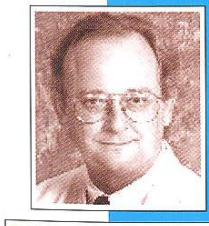
S Richard Underwood
Professor of Medicine National Heart & Lung InstituteLondon – UK

Saqib Masroor
Cardiothoracic Surgeon
Lenox Hill Hospital
New York- **USA**

T S Kler
Sr. Consultant Interventional Cardiology Chief of Cardiac Pacing & Electrophysiology Escort Heart Institute & Research Center, New Delhi, INDIA

Tanvir K Bajwa
Clinical Associate Professor of Medicine University of Wisconsin Medical School Milwaukee Clinical Campus USA

Upendra Kaul
Director Interventional Cardiology and Cardiac Electrophysiology, Batra Hospital and Medical Research Center, New Delhi, INDIA



William M Novick
Endowed Professor International Child Health, Medical Director, International Children's Heart Foundation, University of Tennessee, Health Sciences Center, Tennessee, USA

Teruhisa Kazui,
Professor of Surgery Hamamatsu University School of Medicine JAPAN

Valavanur A. Subramanian
Chief Cardiothoracic Surgery
Lenox Hill Hospital
New York- **USA**

Zohair Al Halees
Pediatric Cardiac Surgeon King Faisal Heart Institute Riyadh, SAUDI ARABIA

GUEST FACULTY CARDIAC SURGERY

Ahmed El Sayed (SUDAN)
Amit Banerjee (INDIA)
Anand Somaya (INDIA)
Anil Bhan (INDIA)
Antonio Maria Calafiore (Italy)
Aubyn Marath (USA)
Cale Alex (UK)
Carlo Vosa (ITALY)
Carlos J Troconis (VENEZUELA)
Deepak Puri (INDIA)
Didier Loulment (USA)
Dimitri Novitzky (USA)
F Sadruddin Shariff (INDIA)
Gambhir Lal (NEPAL)
Grayson Wheatly (USA)
Hani Najm (SAUDI ARABIA)
Harinder Singh Bedi (INDIA)
Hunaid Ahmed Vohra (INDIA)
Hunaid Vohra (UK)
I M Ervine (UK)
Ian Chetter (UK)
James Fonger (USA)
James Thomas (INDIA)
Krishna S Iyer (INDIA)
Kumarasingham Jeyasingham (UK)
Kunal Sarkar (INDIA)
Leif B Nilsson (SWEDEN)
M E Cowen (UK)
Maqsood M Elahi (UK)
Masashi Komeda (JAPAN)
Milind Bhise (INDIA)
Muneer Amanullah (UK)
Murali P Vettath (INDIA)
Mustafa Guden (Turkey)
O P Yadava (INDIA)
Omer ISIK (TURKEY)
R Lange (GERMANY)
Rajesh Sharma (INDIA)
Rajiv Juneja (INDIA)
Renato Pacis (PHILIPPINES)
Roberto R Favaloro (ARGENTINA)
Rodolfo Neirotti (USA)
Roger B Mee (USA)
S Ahmad Hassantash (IRAN)
S Fehmi Katircioglu (TURKEY)
S Muralidharan (INDIA)
Sameh Ibrahim (EGYPT
Saqib Masroor (USA)
Shahid M Khan (SAUDI ARABIA)
Suresh G Rao (INDIA)
T S Mahant (INDIA)
Teruhisa Kazui (JAPAN)
Valavanur Subramanian (USA)
Vijay Kohli (INDIA)
Vijay Mohan Kohli (INDIA)
Vinayak Karmarkar (INDIA)
Wiley Nifong (USA)
William Novick (USA)
WR Dimitri (UK)
Zahid Khan (UK)
Zahid Mehmood (UK)
Zohair Al Halees (SAUDI ARABIA)

GUEST FACULTY CARDIOLOGY

A Jamil Tajik (USA)
Abdul Wase (USA)
Adarsh Kumar (INDIA)
Adolfo Bellosillo (PHILIPPINES)
Anil Grover (INDIA)
Anupam Vijavergiya (INDIA)
Archana Bhatnagar (INDIA)
Arshad Jahangir (USA)
Ashok Seth (INDIA)
Azfar Zaman (UK)
Bela Kari (HUNGARY)
BM Hedge (INDIA)
Bunyad Haider (USA)
CN Manjunath (INDIA)
DB Pehlajani (INDIA)
Dede Kusmana (INDONESIA)
Dipak K Das (USA)
Dipankar Mukerjee (INDIA)
Farqad Aalamgir (UK)
Fausto Pinto (PORTUGAL)
GS Kalra (INDIA)
GS Wander (INDIA)
HK Chopra (INDIA)
Iftikhar Kullu (USA)
Jim Nolan (UK)
John Cleland (UK)
Kanu Chatterjee (USA)
Kirshna Kumar (INDIA)
Manotosh Panja (INDIA)
Mario F De C Maranhao (BRAZIL)
Masood Akhter (USA)
Meenakshi Sharma (INDIA)
Mohammad-Reza Motamedi (IRAN)
Muhammad Hassan Namazi (IRAN)
Muteza Safi (IRAN)
Naranjan S Dhalla (CANADA)
Narendranath Khanna (INDIA)
Nasser Ali Hodjati (IRAN)
Navin C Nanda (USA)
Nishih Chandra (INDIA)
Nishith Chandra (INDIA)
Ozlem Soran (USA)
Rajesh Vijayvergiya (INDIA)
RB Singh (INDIA)
Charanjit S Rihal (USA)
S Richard Underwood (UK)
Samir Malhotra (INDIA)
Samuel Mathew (INDIA)
Shamim Ahmed (INDIA)
Soma Raju (INDIA)
Sudheesh (INDIA)
Sudhir Oswal (INDIA)
Suman Bhandari (INDIA)
Sunil Kapoor (INDIA)
Tanvir K Bajwa (USA)
Tarvinder Pal Singh (INDIA)
Tasneem Z Naqvi (USA)
TS Kler (INDIA)
Upendra Kaul (INDIA)
Waqar Habib (SAUDI ARABIA)
Yogesh Varma (INDIA)
Zohreh Karkhaneh Yousefi (IRAN)

PAEDIATRIC CARDIOLOGY

J Wilkinson (AUSTRALIA)
JV De Giovani (UK)
Krishna Kumar (INDIA)
Mazeni Alvi (MALAYSIA)
Shakeel A Qureshi (UK)

INSTRUCTIONS FOR SPEAKERS

Speakers should leave CD in "Preview Room". CD preview facilities are available in this room. Please lodge your information if it possible during the day prior to your presentation.
The speakers preparation room will be open on:

DATE: MARCH 27-29, 2005
TIME: 8:00 AM-6:00 PM DAILY.

ORAL PRESENTATIONS

Each speaker in the "Free Paper" sessions is entitled to ten (10) minutes for presentation. The sessions moderator will announce the particular session and in-troduce each speakers in turn to present their papers.

POSTERS

Posters will be displayed in the Pearl Continental Hotel Lobby. All presenters of posters will be near their poster between 11.00 AM-1:30 PM on 28th and 29th March, 2005 to an-swer any questions from delegates.

ABSTRACTS

5TH BIENNIAL INTERNATIONAL CONFERENCE

OF THE PAKISTAN SOCIETY OF CARDIOVASCULAR AND THORACIC SURGEONS

SEMINAR

27th March 2005

9:00 AM-1:30 PM
Aiwan e Iqbal,
Lahore-Pakistan

Chief guest: Honourable Chief Minister of Punjab Chaudhry Parvez Ellahi

Guest of honuor: Minister for Health Dr Tahir Ali Javed.

Panel of Experts: Prof Jawad Sajid Khan, Mr Donald Ross, Prof Parvez Mannan, Prof Muhammad Azhar, Prof Syed Karamat Ali Shah, Prof MA Cheema.

Mr Donald Ross (UK)
Cardiac Surgery- A Pilgrim's Progress.

Adolfo Bellosillo (Philippines)
Preventive Cardiology Educational Program: Implementation in a Developing Country

Roberto R. Favaloro (Argentina)
Challenging Dream of Heart Surgery: the development of a Cardiology and Cardiovascular Institute of Argentina.

Jame L Wilkinson (Australia)
Interventional Paediatric Cardiology. Risk versus benefits: what have we learnt?

Aubyn Marath (USA)
International Heart Surgery evolution in developing countries: Surgical short cuts to a successful program

Naresh K Trehan (India)
Surgery for coronary artery and valves in new millennium.

Zohair Al Halees (Saudi Arabia)
Islamic Nations influence in medicine

Vijay Mohan Kohli (India)
The Challenges and problems faced in setting up a cardiac centre

Rodolfo Neirotti (USA)
Paediatric cardiac surgery in less privileged parts of the world: Social, Political and Economic Factors.

Krishna S Iyer (India)
Setting up a pediatric cardiac surgical program in an emergent country- Indian perspective.

William Novick (USA)
Ten years of humanitarian paediatric cardiac assistance: Are we improving?

Hani Najm (Sudia Arabia)
Establishment of new Cardiac Center- Saudi experience.

Carlo F. Marcelletti (Italy)
2000-2004 Cardiac Surgical topic purely from developing country stand-point.

PREVENTIVE CARDIOLOGY EDUCATIONAL PROGRAM: Implementation in a Developing Country

Adolfo B. Bellosillo, MD, FACC, FSGC, FPCC, FPCP, FPCCP

Institution: **Makati Medical Center, Makati City, Philippines.**

At no time in the history of medicine and coronary artery disease has prevention been recognized, emphasized and highlighted as in the early seventies, when the World Health Organization issued the following statement: "Coronary heart disease has reached enormous proportion, striking more and more at younger subjects. It will result in the coming years in the greatest epidemic mankind has faced unless we are able to reverse the trend by concentrated research into its cause and *prevention*".

Fifty million of the world population die each year. Ten million deaths take place in the developed and "emerging economy" countries while forty million occur in the developing and third world countries.

While in the well developed countries there has been a decline in the incidence of cardiovascular deaths, only a small part of the decrease is due to the development of new forms of medical and surgical treatments. A much more important reason is because of changes in life style involving a reduction in the major and minor risk factors for atherosclerosis, an approach best achieved through the practice of preventive cardiology.

The key to a successful prevention program is education of the public on matters pertaining to the heart. However, despite the obvious benefits, there is little or no priority given within the health care system in many a country to formalized and organized public education.

While institution, agencies and organizations (both governmental and private) may very well have education of the public as one of their sworn functions, they often default for logistical reasons, time constraint, inadequate personnel trained for that purpose, etc.

This communication will bring into focus what has been done by a group of private physicians in a developing country, the Philippines, in their quest to be a part of the solution to the problem of public education in the best way they know how. The activities of the Foundation for Lay Education on Heart Diseases, Inc. will be laid out from the time it was conceptualized to the present and its plans for the future.

INTERNATIONAL CARDIAC SURGERY: STARTING A CARDIAC PROGRAM IN A DEVELOPING COUNTRY.

Prof Aubyn Marath

Institution: **President Cardiostart International, Tempa Florida, USA**

The ambitious intent, the practical realities and the formidable expense of developing a cardiac program have discouraged many over extended periods of time. Units flourish and fail all over the world, but it is quite often for reasons which have nothing to do with the planning and other basic rudiments of support that would ordinarily assist launch a successful program. It is very unfortunate, that when a program fails, much of the blame is apportioned to the most enterprising in a group who are condemned by colleagues or administrators for what is then seen as a reckless and flawed adventure.

This need not be so, nor are the aspirations of individual leaders unrealistic. To underscore this viewpoint, CardioStart International over a 15 year period, has provided free counseling and operative correction of heart disease to children and adults in under-developed countries utilizing medical, technical and non-medical expertise, irrespective of political position or religious creed. In response to a country's invitation, members of ***CardioStart's*** international management committee evaluate current state and requirements of the region to be assisted and then co-ordinate volunteer teams of experts drawn from specialties including cardiac surgery, cardiology, anesthesia, nursing and biomedical technology. These teams are convened to specifically perform complex heart operations, and provide a substantial basis for instruction and education to assist the development of heart and lung surgery and other related specialties. On most occasions, no team is the same. Volunteer experts arrive with different training backgrounds and experience levels. All come form different hospitals from around the globe. The perception that this places the visiting and local team at a disadvantages is dispelled by the organizational planning of CardioStart missions. Each center being established, visiting teams operate entirely with local surgeons, all related specialties represented by ***Cardiostart*** volunteers are matched by the local team. Equipment donations are provided to relieve budget constraints and assist continuation of the program subsequently and a full teaching program with care plans and procedures are left behind. This strategy helps development of the necessary personnel, and minimizes the discouragement when progress is held up. To date, CardioStart International has accomplished 31 visits to 19 countries.

The Challenges and problems faced in setting up a cardiac centre

Kohli VM

Institution: Sri Balaji Action Medical Institute, New Delhi, India.

ABSTRACT: Developing any new center is associated with tremendous challenges. Having been involved in setting up and starting cardiac surgery in many centers in India, the problems faced in all have been quite different from each other. The important ones have been related to the infrastructure, technical knowhow, funds, trained personnel, the will to progress, problems related to acquisition of correct equipment and instruments. Coupled with this have been those pertaining to supporting staff, like trained nurses, technicians, well organized laboratories, cardiac catheterization laboratory, good and well trained cardiologists. In some private hospitals an initial concern was also how to get patients to come for treatment! Will discuss how all of these obstacles were overcome and what measures can be taken to start new centers or departments to take care of patients in developing countries keeping in mind how personnel can be trained, how trained surgical teams could go to neighbouring cities or countries where adequate facilities do not exist to help start cardiac surgery there by operating there and training their staff, organizing camps etc. The importance of patient teaching programs, and increasing awareness of cardiac problems among the lay people and general practitioners will also be discussed as also mutual exchange of personnel and staff from other hospitals keeping in mind affiliation with universities or major hospitals overseas.

CONCLUSION: Setting up a new Cardiac Center requires careful planning, teamwork and dedicated personnel willing to provide best possible care.

Paediatric cardiac surgery in less privileged parts of the world: Social, Political and Economic Factors

Rodolfo Neirotti

Institution: DeVos Children's Hospital, Grand Rapids, Michigan, USA

The results of a global survey that clearly defined the differences that exist in cardiac care in developed vs. underdeveloped countries were published in 1999. The survey showed that there are approximately 4000 cardiac surgical centres in the world, with a remarkable mal-distribution of access.

In North America, each centre serves around 120,000 people. In Europe and Australia, each cardiac surgery centre serves a population of 1 million people. In Asia, there is one centre for every 16 million people, while in Africa the amount is one to 33 million people. This mal-distribution has a significant impact on the number of operations performed in these countries.

The average number of cases performed in North America, Australia, and Europe per million people, and possibly the ideal number, is 860. The average number of cardiac operations performed for every million of the population in South America, the Russian Federation, Asia, and Africa is approximately 60. Based on these figures, it is possible to calculate that 4.5 billion people, representing more than nine-tenths, of those living outside North America, Australia, and Europe have no access to cardiac surgery. It does not seem unreasonable, therefore, to consider these areas the "less privileged parts of the World". This general pattern also applies to Paediatric Cardiac Surgery.

The fact that modern cardiac surgery is not available to people in the most impoverished nations of the world is no great surprise. Poor right of entry to cardiac surgery is just one of the harms generated by sheer poverty and inequality in the developing world where, on the whole, cardiac surgery is not a priority, and cannot be performed because of lack of money or infrastructure.

Bureaucratic indifference and the concept of issues being a world apart are damaging. In the future, it will be important that physicians take an active role in political, economic, and social aspects in order to defend the interests of those suffering around the globe. The time has come when physicians have to decide whether they will continue to be a part of the problem, or whether they will be part of the solution.

Although my essay will focus on the situation in the emergent countries, "the less privileged parts of the world" can be anywhere, and are not necessarily due to economic constraints. Lack of diversity due to social, intellectual, educational, and professional inbreeding, the latter representing cultural stagnation, can easily be responsible for the lack of scientific progress and development.

Establishment of a new Cardiac Center

Hani Najm, MD, FRCS, FRCP(C), FCCP, Arif Hussain, MD,FRCA, FCCP

Institution: **King Abdulaziz Cardiac Center, Riyadh, Saudi Arabia**

Five years ago, King Abdulaziz Cardiac Center was formally opened and a complete cardiac service was established. The state of the art building staffed with experts in all the subspecialties of cardiology and cardiac surgery. The volume and complexity of work increased at a rapid pace. Most complex interventional adult and pediatric cardiology and cardiac surgery procedures have been successfully performed with results comparable to any similar center in the world. We feel that a well planned and carefully executed team effort involving a multi disciplinary approach is the key to success. In this presentation we will share our results particularly those involving pediatric and neonatal complex cardiac surgery.

SUNDAY MARCH 27, 2005
AIWAN-E-IQBAL

5TH BIENNIAL INTERNATIONAL CONFERENCE

OF THE PAKISTAN SOCIETY OF CARDIOVASCULAR AND THORACIC SURGEONS

SCIENTIFIC PROGRAM

28TH MARCH 2005

CRYSTAL HALL B

PEARL CONTINENTAL HOTEL, LAHORE-PAKISTAN

CORONARY ARTERY SURGERY

9:00 AM-10:40 AM

Panel of experts: Prof Antonio Maria Calafiore, Dr Valavanur Subramanian, Maj. Gen. Retd. Masud-ur-Rehman Kiani, Dr Naresh K. Trehan, Dr Vijay Mohan Kohli.

Coordinator: Mr Zahid Mahmood,
Moderator: Dr Khalid Rasheed

R Lange (Germany)
Latest development in adult cardiac surgery.

Valavanur Subramanian (USA)
Non-sternotomy options for coronary artery bypass surgery

Omer ISIK (Turkey)
Full arterial revascularization in CABG.

Vijay Mohan Kohli (India)
Intra-operative Transit Time Flow Measurement: A reliable tool in evaluation of coronary artery bypass graft conduits.

O P Yadava (India)
Beating Heart Bypass Surgery – A Critical Reappraisal.

FULL ARTERIAL REVASCULARIZATION IN CORONARY BYPASS SURGERY

Omer ISIK, M.D

Institution: **Professor of Cardiovascular Surgery, Dept.of Cardiovascular Surgery Yeditepe Univ. School of Medicine, Istanbul/TURKEY**

Long term success of myocardial revascularization is mainly determined by the completeness of the revascularization, the patency rate of conduits, and the progression of native vessel disease. The most widely used cronary bypass conduit has been the greater saphenous vein (SVG). Although the early patency rate of SVG is acceptable, there is a accelerated failure by time. The patency rate of left internal thoracic artery (LITA) differs appreciatably from those of SVG. The pedicled RITA also appears to have similiar patency characteristics of LITA. Recently, radial artery (RA) grafts has been demonstrated the high incidence of patency in long term and has been provided the option of subtituting for the RITA as a second arterial graft.

It has been stated that using multiple arterial grafts in CABG decreases the rate of second interventions, the rate of reoperations and increases the survival. To achieve complete revascularization, oftenly it has been needed more than three anastomoses , and it can be met by harvesting additional conduit(s) to ITA(S) or use of sequential anastomoses and/or use of "T" or "Y" proximal anastomose.

From 1987 to August 2004, 1772 CABG patients recieved more than one arterial grafts out of 4220 total CABG patients. Eight hundred and ninety patients recieved only arterial revascularization with LITA/BITA/RA/RGEA or IEA. Fifty eight percent of the cases were operated on off-pump. The mean distal anastomoses number is 3.52±0.8 per patient. Hospital mortality is 1% with 9 patiens. There no morbidity related to full artireal revascularization procedure itself. 121 patients had control angiography at 1-25 months postop. Patency rates of LITA, RITA, RA, RGEA and IEA grafts were 96.7%, 96.3%, 95.4%, 50% and 50% respectively.

It is concluded that although there has been some debate about infection, sternal dehiscence, arterial graft spasm, perioperative myocardial hypoperfusion and competitive flow; full arterial revascularization in CABG is a good strategy with low operative mortality and morbidity, excellent mid-term results and decreased reinterventions.

MONDAY MARCH 28, 2005
CRYSTAL HALL B

Intra-operative Transit Time Flow Measurement: A reliable tool in evaluation of coronary artery bypass graft conduits

Kohli VM, Goel P, Dubey S, Maker A, Juneja S, Jain A, Chandna S, Srivastava A.

Institution: **Sri Balaji Action Medical Institute, New Delhi.**

AIM: To evaluate the efficacy of transit time flow measurement in determining the blood flow in coronary artery bypass graft conduits.

To detect graft related problems per-operatively.

METHOD: In a 9 month period , from May 2001 to Jan 2002, 185 patients having coronary artery bypass grafting (118 on-pump, 67 off-pump)with the left internal mammary artery anastomosed to the left anterior descending artery, radial and venous rafts to the remaining diseased coronary arteries were studied. Flow in the bypass graft conduits was measured with transit time method.

RESULTS: The mean flow for left internal mammary artery, radial and saphenous vein graft were 28.4± 18.12, 37.57±21.81 and 28.8±21.81 ml/min respectively. Abnormal transit time flows were observed in 10 grafts (2.26%). Nine of these grafts were revised with normalization of flow indices.

CONCLUSION: Transit time flow measurement can be used to quantitate the flow in coronary artery bypass graft after CABG and OPCAB. It is an effective tool for detecting graft related problems per-operatively, which can be, corrected immediately thus reducing morbidity and mortality.

Beating Heart Coronary Artery Bypass Surgery: A Critical Reappraisal

OP YADAVA

Institution: National Heart Institute, New Delhi, India.

Despite recent technical developments, CPB and cardioplegic arrest are by themselves non physiologic and inflict whole body inflammation. Conventional CABG is associated with mortality of 2-3% and morbidity of 10-15%. Off pump avoids the systemic inflammatory response of CPB such as activation of the complement system and neutrophils, induction of adhesion molecules, release of cytokines and TNF and endothelial activation, which are a source of major morbidity post operatively. Also CPB can lead to post operative derangement in renal, hepatic & pulmonary functions, neuro psychiatric disturbances and CVA. Although majority of patients undergoing bypass surgery tolerate CPB well, certain patient sub-groups have a higher incidence of adverse outcomes from CPB, including elderly, LV dysfunction, prior strokes, pulmonary and renal dysfunctions. Though beating heart surgery was first performed in 1965, it was the efforts of Benetti and Buffalo in early 90's that it has developed to its present state of being the procedure of choice for routine bypass surgery. Despite gratifying results in large series of patients, OPCAB has not yet been completely accepted, because of lack of long term and angiographic results, technically difficulties and a longer learning curve in grafting the vessels on the back of the heart. Technical developments have allowed stabilization of target coronary vessels with various tissue stabilizers leading to proper exposure and stabilization of the artery. Today non sternotomy options for bypass surgery, robotic bypass surgery, day care bypass surgery and awake beating heart bypass surgeries have been introduced, which have all contributed to reduction of morbidity and mortality. The mortality in most OPCAB series stands at around 1%, with peri-operative infarct rates of <2%, with reduction in useage of blood and blood products, reduced in patient and intensive care stays, reduced ventilatory requirement and early return to work. Angiographic patency has been demonstrated to the tune of 95 to 100% in a number of publications. One can perform OPCAB on diffusedly diseased small deep intramyocardially located and calcified vessels with conversion rate of less than 1%. The only contra indication is haemodynamic and electrical instability of the heart. Various approaches have been used for off pump surgery of which the mid line sternotomy has been the most widely used especially for multi vessel disease. However, lower mid sternotomy, left or right anterior mini thoracotomy, limited lateral thoracotomy, laparoscopic, diaphragmatic and port access have all been tried. Beating heart bypass

surgery has been validated against pump surgery in the BHACAS I and II trials published by Angelini in Lancet, 2002. Off pump bypass surgery can provide equivalent global revascularisation and possibly equivalent long term patency and event free survival rates as pump CABG. Though Khan et al, in New England Journal of Medicine, 2004, did report that the on pump graft patency was higher (98%) as compared to off pump surgery (88%), the same has not been corroborated in a number of other series. One year data from the SMART Trial has shown that the off pump bypass is more durable and cost effective then CABG with CPB. The patency of arterial coronary bypass grafts done on beating heart have been validated by the PRAGUE IV Study also. Off pump bypass surgery provides complete revascularisation as demonstrated by Monoreto et al and the SMART Trial. However, we do need more randomized, controlled & long term trials.

The future of OPCAB is quite bright with newer techniques in the offing like Totally Endoscopic bypass surgery, Endoscopic harvesting of conduits, automatic suture and stapling devices, laser welding and gluing of anastomosis, special visualisation systems ('Strobe' lights/'Vista'), local cardioplegia and haemopump flow supported beating heart bypass surgery.

CONGENITAL & VALVULAR HEART SURGERY

11:00 AM-1:30 PM

Panel of Experts: Mr Donald Ross, Prof Roger B. Mee, Dr Zohair Al Halees, Prof M A Cheema, Dr Krishna S Iyer.

Coordinator: Dr Tariq M Sherani, **Moderator:** Dr Shahid Sami

Roger B Mee (USA)
Recent advances and new trends in Pediatric Cardiac Surgery

R Lange (Germany)
How definitive in corrective surgery in the pediatric population after early primary repair

Carlo F Marcelletti (Italy)
Congenitally corrected transposition of great arteries.

Roberto R Favaloro (Argentina)
Results of Mitral Valve Reconstruction according to the etiology.

Didier Loulment (USA)
Current Status of Mitral Valve Repair

Dr Hani Najm (Saudi Arabia)
Updates on mitral valve repair

Zohair Al Halees (Saudi Arabia)
Aortic Valve Repair: techniques and results

Mustafa Guden (Turkey)
Surgical treatment of Atrial fibrillation with saline irrigated Radiofrequency Ablation.

MONDAY MARCH 28, 2005
CRYSTAL HALL B

TRANSPLANT / ROBOTIC & MINIMALLY INVASIVE SURGERY

2:30 PM-4:00 PM

Panel of Experts: Prof Roberto R Favaloro, Prof Dimitri Novitzky, Dr Naresh Trehan, Prof Jawad Sajid Khan, Dr Saqib Masroor

Coordinator: Dr Shahid Mahmud Malik,
Moderator: Brig. Asif Ali Khan.

Dimitri Novitzky (USA)
Cardiac Transplantation (ethical issues, the donor heart, issues related to the selection of potential cardiac recipient, selection of donor heart, immediate post operative management as well immunosupresion.

Roberto R Favaloro (Argentina)
Surgical treatment of Pulmonary Hypertension (includes our experience with pulmonary thromboendarterectomy and lung & heart lung transplant with pulmonary hypertension)

Saqib Masroor (USA)
Surgical Robotics – Its role in Cardiac Surgery

Yugal Mishra (India)
Robotic enhanced cardiac surgery

Chaudhry Sharif (Pakistan)
Towering Medical Personalities-Post Partition.

MONDAY MARCH 28, 2005
CRYSTAL HALL B

Cardiac Transplantation (ethical issues, the donor heart, issues related to the selection of potential cardiac recipient, selection of donor heart, immediate post operative management as well immunosupresion.

DIMITRI NOVITZKY (USA)

Institution: **Tampa General Hospital and the University of South Florida. USA**

The first human cardiac transplantation was performed in Cape Town by C. Barnard in 1967, followed by Shumbway, in Stanford, and by Cabrol in Paris

Following the initial excitement, during the following year approximately 100 cardiac transplants were performed worldwide, observing a dismal 100% surgical mortality. This procedure was temporary limited to these three institutions.

The Tampa General Hospital program was initiated in 1985, and to date 650 patients underwent heart transplantation. Nowadays each year cardiac transplantation is performed worldwide approximately in 3, 500 patients in over 200 cardiac transplant centers. The median survival is approximately 9 years, and is the treatment of choice for the management of end-stage heart failure.

The introduction of cyclosporine A in 1978 facilitated and reduced dramatically the incidence of acute rejection events.

The constant increment of patients referred for cardiac transplantation and the shortage of organ donors has resulted in a 30% mortality of patients awaiting cardiac transplantation. Therefore alternatives have been developed in heart failure management, and mechanical assist devices have merged to prolong and improve quality of life, despite these efforts the issue of organ supply-demand has not been resolved.

The surgical mortality ranges from 1 to 10%; of which primary graft failure play a major role. In selected centers one year survival ranges between 85 -90 %.

MECHANICAL CIRCULATION / PERFUSION

4:20-6:00 PM

Panel of Experts: Prof Roger B. Mee, Prof Tofy Mussivand, Alex Cale, Michel A De Jong, Brig. Azhar Rasheed

Coordinator: Dr Munir Ahmad, Moderator: Dr Akhter Hussain

Roger B Mee (USA)
Small body perfusion, the inflammatory response and brain protection

Tofy Mussivand (Canada)
Use of Ventricular Assist Devices in the treatment of heart Failure

Rajiv Juneja (India)
Methylprednisolone-immunomodulation and outcome following CPB

Alex Cale (UK)
Surgery for Heart Failure

Demin T.M. Shen (Indonesia)
Mono-Port Ventricle "The Next Step after the IABP"

Michel A De Jong (Holland)
Perfusion goes Minimally Invasive MECC (Minimum Extracorporial circulation).

Azeem R Khan (USA)
Chronic Hypoxemia Increases Myocardial Cytochrome Oxidase.

MONDAY MARCH 28, 2005
CRYSTAL HALL B

Methylprednisolone-immunomodulation and outcome following CPB

Rajiv Juneja (India)

Institution: **Escorts Heart Institute and Research Centre**

INTRODUCTION: The systemic inflammatory response to cardio-pulmonary bypass (CPB) is well described. Immuno-modulation by steroids is known[1]. A correlation between reduction of this response and clinical outcome following steroid administration before CPB was studied

METHODS: Fifty patients with normal left ventricular function who underwent coronary artery bypass grafting on CPB were randomly divided in two equal groups. Group MP received methylpredinsolone 30 mg/kg i.v. after induction of anaesthesia while the control group C, received normal saline. Personnel conducting the case and intensivists were blinded to the groups. Interleukin (IL-6), superoxide dismutase (SOD), glutamic peroxidase, haemodynamic data, cardiac output and derived parameters, PaO_2, $PaCO_2$, Qs/Qt, $AaDO_2$, total leucocyte count (TLC), blood sugar, kidney and liver function tests, creatinine phosphokinase MB, troponin T, temperature, duration of ventilation, ICU and hospital stay, incidence of wound infection, were studied. Blood samples were withdrawn after induction of anaesthesia, before and after aortic cross clamp removal, 1, 6,12 hours after CPB and on post-operative day 1,2, and 2. Student's t test was applied for comparison between groups.

RESULTS: Difference in laboratory values between both groups are shown in the table. SOD levels were reduced only in group C between pre CPB and 1 hr post CPB, 73.67 ± 42.47 vs 28.50 ± 40.10 SOD units/ml. No difference between groups was observed in kidney, liver function tests, haemodynamic parameters, blood sugar levels, pulmonary indices, ICU and hospital stay.

	Group C (n 25)	Group MP (n 25)
TLC /cu mm		
Day 1	13356±3976	15800±4917 **
Day 2	11078±3573	18252±5472 **
Day 3	10521±2963	14496±4711 **
IL-6 pg/ml		
1 hr	631±373	443±234 *
6 hr post CPB	701±441	286±157 **
12 hr post CPB	593±422	230±143 **
Day 1	541±370	128±80 **
Day 2	339±414	62±54 **
Day 3	126±77	36±19 **

CPB = cardiopulmonary bypass; *p<0.05, **p<0.001

CONCLUSION: MP inhibits release of IL-6, reduces free radical activity and is associated with raised polymorphonuclear cells. However MP administration was not associated with any change in clinical outcome when studied until the third post operative day in fifty low risk patients.

REFERENCE: .Gott JP, Cooper WA, Schmidt FE, et al. Modifying risk of extracorporeal circulation: trial of four anti-inflammatory strategies. Ann Thorac Surg 1998l 66: 747-54

Mono-Port Ventricle "The Next Step after the IABP"

Demin T.M. Shen, MD, PhD, FACS, FRCSC, MHA

Institution: **Professor, Director Rajawali Hospital, Bandung-Indonesia, Director Biotechnology Lab. Bandung-Indonesia, 38 Jalan Rajawali, Bandung-Indonesia**

The Mono-Port ventricle is a polyurethane vacuumed formed ventricle designed on the principles developed in Dr. Kolff's laboratory. The device has no valves, pumps 80cc per stroke and has a dead volume of 26cc. The inlet outlet port has been placed off-center to insure a circular blood flow in the ventricle. The over all dimensions of the device are: 85 mm diameter, 36 mm height and weight 57 gms. The device is heparin coated on the blood surfaces for thrombus reduction and heparin coated on the outside to reduce tissue adherence. The device is placed in the upper right chest and is connected to the ascending aorta with a simple curved cannular. The driver for the device is a standard IABP driver. The Mono-Port Ventricle has three functions, support the ailing heart, improve the cardiovascular system and exercise the heart after the stem cells have been placed. The device has been implanted in calves.

MONDAY MARCH 28, 2005
CRYSTAL HALL B

Perfusion Goes Minimally Invasive

Michel A. De Jong ,EKP, ECCP.

Institution: **Department of Cardiothoracic Surgery. S1. Antonius Hospital, Nieuwegein, The Neth lands**

Cardiopulmonary bypass (CPB) is known to cause part of the systemic inflammatory reaction after cardiac surgery that can be responsible for organ failure.

A new technique based on a minimal extracorporeal circulation (MECC, Jostra, Germany) has been evaluated with regard to the inflammatory response and use of blood products in several study's involving patients undergoing coronary artery bypass grafting.

Cardiac surgery and cardiopulmonary bypass (CPB) initiate a systemic inflammatory response largely determined by the blood contact with foreign surface and the activation of the complement.

It is generally accepted that CPR initiates a whole body inflammatory reaction. Haemodynamic profiles, as well as haematologica1 parameters together with several specific biological markers contribute to form this systemic inflammatory reaction after bypass.

The magnitude of this inflammatory reaction varies, but the persistence of any degree of inflammation may be considered as potentially harmful to the cardiac patient.

The systemic inflammation observed during and after cardiac surgery and more particularly in coronary artery bypass grafting (CABG) procedures is related to the secretion of a large number of mediators and to the activation of certain natural defence mechanisms.

The reduced release of pro-inflammatory cytok1nes may play an important role in limiting the postoperative inflammatory response syndrome.

So, lessening the invasive aspects in coronary surgery is of constant concern.

This overview suggests strongly a significant reduction of the inflammatory reaction and use of blood products can be observed, making the MECC system an attractive solution for coronary artery bypass grafting.

Chronic Hypoxemia Increases Myocardial Cytochrome Oxidase.

Azeem R. Khan, M.D.†, David A. Piel, B.S.*, Robert J. Waibel, B.S.†, Mariusz Birbach, M.D.†, Thomas L. Spray, M.D.†, Clifford S. Deutschman, M.D.§, J. William Gaynor, M.D.†, Richard J. Levy, M.D.*

Institution: *Dept. of Anesthesiology and Critical Care Medicine, Children's Hospital of Philadelphia, University of Pennsylvania

†Division of Cardiothoracic Surgery, Dept. of Surgery, Children's Hospital of Philadelphia, University of Pennsylvania

§Dept of Anesthesia, University of Pennsylvania School of Medicine

Supported by the Alice Langdon Warner and Daniel M Tabas Endowed Chairs in Pediatric Cardiothoracic Surgery at The Children's Hospital of Philadelphia

OBJECTIVES: Cyanotic patients have potentially decreased tissue oxygen tension. Cytochrome oxidase (CcOx) catalyzes the reduction of oxygen to water and is integral to ATP production. CcOx subunit I, the active site, is encoded by mitochondrial DNA. Using a newborn model of chronic hypoxemia, we evaluated ventricular CcOx subunit I mRNA and protein expression and assessed CcOx kinetic activity.

METHODS: Thirty-two newborn piglets underwent thoracotomy and placement of a left pulmonary artery to left atrium shunt or sham operation. Two weeks later, p_aO_2, hematocrit (HCT), and left ventricular shortening fraction (SF) determined by transthoracic echocardiography were compared with baseline. Right (RV) and left ventricular (LV) RNA was extracted and mitochondria were isolated. Northern blot hybridization and protein immunoblotting for CcOx subunit I using chemiluminescence were performed. Steady state CcOx kinetic activity was measured using spectrophotometry. Significance was determined with student's t-test.

RESULTS: Baseline p_aO_2 and HCT were similar. Post procedure, hypoxemic piglets had significantly lower p_aO_2 of 38 +/- 10 mmHg ($p<0.001$) and higher HCT of 31.4 +/- 2.9 % ($p<0.001$) compared with p_aO_2 of 140 +/- 47 mmHg and HCT of 24.6 +/- 3.9 % post sham. Baseline and post procedure LV SF were similar within and between groups. Chronic hypoxemia significantly increased steady state levels of RV and LV CcOx I mRNA and protein levels by >1.4 fold. There was no difference between RV and LV CcOx levels within groups. CcOx specific activity increased significantly in hypoxemic piglets by 2.5 fold compared to sham operated animals.

CONCLUSIONS: Chronic hypoxemia increases myocardial CcOx I message, protein expression, and kinetic activity. This is a possible cellular adaptive mechanism that may preserve organ function during chronic hypoxemia. These findings may have implications for cyanotic heart disease patients.

MONDAY MARCH 28, 2005
CRYSTAL HALL B

28TH MARCH 2005

EMERALD HALL C

PEARL CONTINENTAL HOTEL, LAHORE-PAKISTAN

CARDIAC ICU, ANAESTHESIA, VASCULAR SURGERY

9:00 AM-10:40 AM

Panel of experts: Prof James Thomas, Mr Ian Chetter, Dr Arif Hussain, Dr IM Erwine, Prof MA Cheema.

Coordinator: Saulat Fatimi, Moderator: Aamir Bilal.

Jamés Thomas (India)
Surgery of the aortic aneurysms

Ian Chetter (UK)
Management of patients with lower limb ischemia

Mr Zahid Khan (UK)
Descending Thoracic and Thoraco-Abdominal Aortic repair using deep hypothermic Circulatory Arrest

Sohail Aslam (Pakistan)
Surgically Managed Abdominal Aortic Aneurysm (AAA) – Peshawar Experience

Arif Hussain (Saudi Arabia)
Artificial Hearts

Syed Shahabuddin (Pakistan)
Aortic Emergencies

Mohammad Hamid (Pakistan)
First experience in the use of extra pleural analgesia for post thoracotomy pain

Surgery of the Aortic Aneurysms

Dr James Thomas, VK Gupta, Sanjiv Kalra, BK Mohanty,LC Gupta,S Padmavati

Institution: **National Heart Institute, East of Kailash, DELHI 110 065, INDIA.**

Experience with 39 patients who underwent surgical management in three hospitals over a period of eighteen years for arch, ascending, descending and abdominal aortic aneurysms, is presented. These included 8 ascending aortic, 4 aortic arch, 2 descending, 7 thoracoabdominal and 18 abdominal aortic aneurysms. Age varied from 43 to 72 years. There were 32 males and 8 females.

In asending aortic aneurysms, composite graft with prosthetic valve was used in six patients while separate valve an supra coronary graft was used in two patients.These two patients were done late eightees when the composite grafts were not easily available or had to do with donated graft and valve.One patient developed aneurysmal dilatation between valve and the proximal end of the graft attachment and dissection in the descending aorta twelve years on follow up which was managed conservatively.Four of these has insitu reimplatation of coronaries with with native aorta without fashioning the coronary button.One patient had extensive calcification of the right coronary with very friable native aortic wall.Composite grafts included St Jude and Carbomedics composite grafts.Erosion of dternum in one and all patients had femoral arterial cannulation.

The aortic arch was done on profound hypothermia, with cooling on CP bypass to 18 degree Celsius and drift to 15 and venous drainge to the bag. Carotid arteries were clamed and reimplanted as single cuff. At the end of the distal graft anastosis, aorta was filled back from bypass circuit and rewarmed on bypass.

Thoraco abdominal aneurysm were done through 9th space and to the extraperitoneal abdominal approach.Abdominal aneurysms were done through midline epigastric to suprapubic incision.

In the first ten patients grafts were soaked in plasma and cooked in steam sterilizer for ten minutes prior to implanatation and others had gelatine impregnated grafts.

Mortality included 1 ascending with gross calcified right coronary and aortic wall, 1 aortic arch and one abdominal aortic with dissection and bleeding. Eight have been lost to follow up and others are doing well.

Good results in aortic aneurysm surgery can be achieved with the advent of better perfusion and anesthetic technique, better composite grafts and accrued surgical experience.

Descending Thoracic and Thoraco-Abdominal Aortic Repair using deep hypothermic Circulatory Arrest

Zahid Khan, Ali Zamir Khan, Jonathan Unsworth-White, Simon Ashley, James Kuo Derriford Hospital, Plymouth, UK.

OBJECTIVES: To report our experience with deep hypothermic circulatory arrest for descending thoracic and thoraco-abdominal aortic surgery.

METHODS: Between March 1998 and August 2004, 33 patients underwent descending thoracic or thoraco-abdominal aortic surgery, for aneurysm (22), acute type B dissection (4), chronic type B dissection (3) and traumatic transection of aorta (4). 28 patients had replacement of the descending thoracic aorta and 5 patients the thoraco-abdominal aorta. Cannulation technique for cardiopulmonary bypass included femora-femoral (1), right atrial/ascending aortic (1) and right ventricular/ascending aortic (31).

Anastomoses were performed under deep hypothermic (16-18°C) circulatory arrest.

RESULTS:

Mean ± SD	
Age	55.3 ±14.7
Bypass time (mins)	142.5 ± 47.2
Total Circulatory Arrest	24.5 ± 9.9
ITU stay (days)	4.3 ± 5.7

MORBIDITY

Paraperesis	1/33 (3.33%)
ARDS	2/33 (6.06%
CVA	1/33 (3.33%)
Renal failure	0/33
Operative mortality	1/33 (3.33%)
Late death	1
Mean follow up	38.5 months

CONCLUSION: Our Experience suggests that descending thoracic and thoraco-abdominal aortic surgery using deep hypothermic circulatory arrest is associated with a low morbidity and mortality.

MONDAY MARCH 28, 2005
EMERALD HALL C

Surgically Managed Abdominal Aortic Aneurysm (AAA) - Peshawar Experience

Sohail Aslam, Taskeen Ahmad, Khalid Rehman, Nayyar Waseem, Hamid Ahmad, Murad Ali, Javed Nawab, Abdul Malik, Abid Aslam Awan, Riaz Anwar Khan, Jalal Khan, Parvez Mannan

Institution: **Dept of Cardiovascular Surgery PGMI Lady Reading Hospital Peshawar.**

OBJECTIVE: To assess outcome in surgically managed Abdominal Aortic Aneurysm (AAA).

MATERIAL AND METHODS: Retrospective study of 35 cases of AAA from Jan 1998 to Dec 2003, at Department of Cardiovascular Surgery, Lady Reading Hospital, Peshawar Pakistan. Age, sex, presentation. morphology, pathology and outcome of surgical excision analysed in two groups i.e. leaking AAA and non-leaking AAA.

RESULTS: Males were dominent in both the leaking and non-leaking groups. Age raged from 18years to 75 years. Mass abdomen and history of backache was present in 100% cases of both the groups. 1/3rd patients of leaking AAA group presented with shock. Doppler ultrasound of abdomen was main tool for diagnosis, done in all the patients. All the aneurysms were below renal and than 70% were atheroselerotic. There was one death in non-leaking group. 71.42% of leaking AAA died during or after surgery. There was no significant difference in morbidity in both the groups.

CONCLUSION: Non-specific abdominal pain with backache especially in elderly should not be neglected. At least doppler ultrasound of abdomen be done to screen on AAA in these patients. Good results can be obtained by early diagnosing AAA before they present at the stage of leak / rupture.

Artificial Hearts

Arif Hussain, MD,FRCA,FCCP, Hani Najm, MD, FRCS, FRCP(C), FCCP

Institution: **King Abdulaziz Cardiac Center, Riyadh, Saudi Arabia**

Although cardiac transplantation remains the principal solution to totally irreversible intractable heart failure, the option is not always available to all patients. There is a universal shortage of available donors and transplant programs for different reasons. Artificial heart as an alternative has attracted attention for a long time and with the steady progress in technology, the possibility of totally implantable man made heart is now a distinct option. In King Abdulaziz Cardiac Center, Riyadh we have embarked on a program to make this a reality. In this talk we will review this subject and share our experience with the Berlin Heart.

MONDAY MARCH 28, 2005
EMERALD HALL C

Aortic Emergencies

Syed Shahabuddin, Hasnat Sharif, Saqib Hamid Qazi, Nadeemullah Khan, Ziad Sophie

Institution: **Aga Khan University, Karachi.**

AIM OF STUDY: To review for clinical presentation, the initial impression by the ER physician, delays in diagnosis and subsequent outcome in a tertiary care centre of a developing country.

METHODS: We designed a retrospective study of patients presenting to the AKUH emergency dept. during study period from Nov 1988 to Nov 2002, who finally have a confirmatory diagnosis of Aortic dissection and Ruptured Abdominal Aortic aneurysm.

MAIN RESULTS: Our results indicate that an emergency are common in male then female. Mean age for AD was 55 with the commonest presentation of chest and epigastric pain. Hypertension was the main co-morbid. Important physical exam findings were not documented in 50% of cases. CT scan was the most common confirmatory invest used 50% underwent surgery, Mortality was 88%. Regarding RAAA most of patients presented with bookish picture of abdominal pain, hypotension and palpable mass. U/S + CT scan were used for confirmation.

CONCLUSION:

- Aortic emergencies are rare but lethal.
- High index of suspicion, prompt assessment and treatment among patients presenting to the emergency department is essential.
- Institution should select the diagnostic study of choice depending upon the expertise available, so delays in diagnosis should be minimized.

FIRST EXPERIENCE IN THE USE OF EXTR PLEURAL ANALGESIA FOR POST THORACOTOMY PAIN

Mohammad Hamid, Shahid Ahmed, Hamid Iqil Naqvi, Saulat Fatimi

Institution: **Aga Khan University Hospital Karachi, Pakistan**

AIMS/OBJECTIVES: To see the analgesic effect of bupivacaine given through extra pleural catheter for post thoracotomy pain control.

METHOD: In this study, we followed those patients who came to operating room of aga khan university hospital for thoracotomy and extra plural catheter was inserted for postoperative pain control. All catheters inserted at the end of procedures but before approximation of ribs. For postoperative analgesia bupivacaine 0.25% was used at the rate of 10-15 ml/hr. Their pain score, motor score, hypotension, nausea & vomiting was assessed for 72 hours. Cap. Tramadol 50mg, every six hourly given for co-analgesia to all patients.

RESULTS: 18 consecutive post thoracotomy patients included with the average age of 42 years. 12 male and 6 females patients had extra plural catheter placed for postoperative pain. None of these patients developed nausea, vomiting or hypotension in the postoperative period. There was no incident of extra pleural catheter pull out. Pain assessment is first 24 hours showed only 6 (33%) patients developing mild pain on rest while dynamic pain was mild in 11(61%) patients and moderate in 3 (17%) patients. Between 24 – 48 hours only 2 patient developed mild pain on rest, while dynamic pain of mild and moderate degree was seen in 3(17%) and 8 (44%) patients respectively. During next 24 hours only one patient complained of moderate pain on movement. Average time extra plural catheter used was 3.3 days

CONCLUSIONS: Analgesia provided by infusion through extra plural catheter substantially beneficial for postoperative pain control and reduces postoperative complications.

MONDAY MARCH 28, 2005
EMERALD HALL C

THORACIC SURGERY

11:00 AM-1:30 PM

Panel of experts: Mr Mike Cowen, Mr Kumarasingham Jeyasingham, Prof S fahim-Ul-Haq, Brig Sultan Muzaffar

Coordinator: Dr Nasir Iqbal
Moderator: Dr Iftikhar Hussain Khan

RS Dhaliwal (India)
Physiological lung exclusion - a life saving procedure in massive hemoptysis

Aamir Bilal (Pakistan)
An experience of 108 cases of Esophagectomy using left Thoracolaparotomy and Cervical Anastomosis with Feeding Jejunostomy, without Gastric Drainage Procedure

Brig. M Sultan Muzaffar(Pakistan)
Different surgical options in management of chronic empyema thoracis and treatment modalities for complicated empyema thoracis

RS Dhaliwal (India)
Single stage surgical procedure for bilateral lung and liver hydatid cysts

Rizwan Qureshi (UK)
Pulmonary metastases: is there a role of thoracic surgery?

Saulat Fatimi (Pakistan)
Video-Assisted Thoracoscopic Surgery (VATS). A novel approach in the management of thoracic empyema in our part of the World. Experience at a tertiary care center in Pakistan

Brig M Sultan Muzaffar(Pakistan)
Video assisted thoracoscopic surgery (vats) and thoracoscopic resection of solitary pulmonary nodule

Saulat Fatimi (Pakistan)
How VATS had changed the management of spontaneous pneumothorax in the 21st century and how it has influenced the way mediastinal adenopathy is managed in this part of the world.

Tanveer Ahmad (Pakistan)
Role of videoassisted thoracoscopy in the management of clotted hemothorax

MONDAY MARCH 28, 2005
EMERALD HALL C

Physiological Lung Exclusion - A Life Saving Procedure in Massive Hemoptysis

Prof RS Dhaliwal, S Luthra, D Das, S Goyal.

Institution: **Department of Cardiovascular & Thoracic Surgery, Post Graduate Institute of Medical Education & Research, Chandigarh, India**

INTRODUCTION: Pulmonary tuberculosis and bronchiectasis are major causes of massive hemoptysis in developing countries. Lung resection remains the surgical treatment of choice. This may not always be possible and may even be hazardous in some patients due to fibrosis and dense vascular adhesions between the lung and chest wall. This leads to marked blood loss and control of hilar vessels becomes difficult and even dangerous. In such patients senior author (Prof RSD) devised this operation and we present our experience with this procedure

METHODS: Between Jan 1996 to Sept. 2003, 32 patients (18 males and13 females) between age of 16- 54 yrs. 23 presented with massive hemoptysis. 26 had fibro-cavitary tuberculosis and 5 had Bronchiectasis. Medical treatment failed in all requiring life saving surgical intervention. On thoracotomy diseased lung or lobe was found to be very densely adherent to chest wall and apex of chest and there was lot of bleeding at time of attempted mobilization of lung. It made lung resection technically very difficult and hilar vessels control hazardous and dangerous. Control of life threatening hemoptysis was obtained by physiological lung exclusion i.e. by surgical interruption of the bronchus and pulmonary artery of the involved lobe or lung and keeping the pulmonary veins intact (for drainage).

RESULTS: Hemoptysis could be controlled in all these patients without any mortality and significant morbidity. There was no postoperative empyema and recurrence of hemoptysis in any patient on long term follow up from 3 to 69 months. No patient required anatomical lung resection later on.

CONCLUSIONS: Physiological lung exclusion is a safe, life saving and effective method for control of massive hemoptysis in cases where lung resection is technically hazardous or difficult. This should be kept as an alternative or adjunct to anatomical lung resection. Every thoracic surgeon should keep this procedure in mind whenever planning for any lung resection as it can save the patient and the surgeon from a tricky situation.

An experience of 108 cases of Esophagectomy using left Thoracolaparotomy and Cervical Anastomosis with Feeding Jejunostomy, without Gastric Drainage Procedure

Aamir Bilal, Muhammad Salim, Muhammad Muslim, Muqeet ullah

Institution: Dept of CardioThoracic Surgery PGMI Lady Reading Hospital Peshawar.

AIMS: To study efficacy and safety of esophagectomy using left thoracolapratomy and left neck anastomosis with feeding jejunostomy, but no gastric drainage procedure.

METHOD: Computerized clinical data of 108 surgically treated patients during twenty eight months was retrospectively analyzed. Detailed scrutiny of record was carried out to determine the suitability and safety of the surgical procedure and surgical outcome.

RESULTS: A total of 108 patients underwent esophagectomy through left thoracolaparotomy and left neck incision. Male: Female was 72: 36, age range was 18 72 years with a mean age of 42.3 years. The predominant clinical presentation was dysphagia. Tumor level was upper third of thoracic esopahgus in 3 (2.7%), middle third in 48 (44.4%) and lower third in 57 (52.7%) patients. Tumor histology was squamous cell carcinoma in 72 (66.6%) and adenocarcinoma in 36 (33.3%) patients. The mean operative time was 155 (25 ±) minutes. Postoperative morbidity was 19.4% (21/108). The complications were anastomotic leak in 7(6.5%), Hoarseness in 6(5.5%), aspiration in 3(2.7%); reopening in 1(0.9%) and stricture in 4(3.7%) patients. The overall mortality was 8.3% (9/108). Deaths were due to anastomatic leak in 3(2.7%) tracheal injury in 2(1.85%), respiratory failure in 2(1.85%) and pulmonary embolism in 2(1.85%) patients.

28 patients were lost to follow-up while incisional hernia was seen in 1, hoarseness in 3 and stricture in 3 patients over a last one month to 2 years follow-up. Recurrence occurred in 3/108 (2.77%); one developed malignant ascities, after 4 months, one developed nodule in hypopharynx after 18 months, and one developed a subcutaneous nodule on the back after 14 months.

CONCLUSION: Left thoracolaparotomy and cervical anastomosis is a safe approach for carcinoma of the esophagus. A 30 day mortality of 8.3% in a large series of 108 oesophagectomies with 2.7% recurrence and 19.4% morbidity speak volumes for the technique. Omitting a gastric drainage procedure does not adversely effect the outcome, while routine placement of a jejunostomy feeding catheter is a safe and cost effective mode of nutrition. Neck anastomosis gives a generous tumour free margin, as all except one resection margin was free of tumour. This is further consolidated by only 3 cases of recurrence out of 80, with 28 being lost to follow up.

MONDAY MARCH 28, 2005
EMERALD HALL C

ROLE OF DIFFERENT SURGICAL OPTIONS IN MANAGEMENT OF CHRONIC EMPYEMA THORACIS

Brig Muhammad Sultan Muzaffar, Major Farhan.

Institution: Combined Military Hospital Rawalpindi, Pakistan

AIMS AND OBJECTIVES: To share the experience of different surgical options in cases of chronic empyema thoracis.

MATERIALS AND METHOD: A total of 151 cases of empyema thoracis were included in a period extending from Jan 2001 to Jan 2004. There were 93 males and 58 females, The age range was from 6 months to 81 years, The etiology involved were 41 cases of post tuberculosis, 59 cases of post pneumonic, 20 cases of post resectional, 17 cases of post traumatic, 6 cases of idiopathic cause and 8 cases of miscellaneous cause. The treatment modalities varied according to age, general condition, co morbid conditions, condition of the underlying lung and the underlying cause of empyema. The treatment modalities involved chest intubation with or without irrigation in 17 cases, VATD or rib resection in fibrino purulent stage of empyema in 39 cases, decortication with or without lung resection and muscle transfer in 76 patients. Thoracoplasty in 8 and open drainage was chosen in 11 cases.

RESULTS: Empyema, is a clinical condition with a wide variety of variables associated which modify the treatment options of the patient. The aims of treatment were achieved as far as decrease or removal of septic load, reexpansion of healthy lung tissue when available and return of patient to useful life were concerned. There were 3 cases of peri, operative mortality.

CONCLUSION: The treatment of empyema thoracis has to be tailored to individual patient .The ideal result is evacuation of peel and pus and re expansion of healthy lung. However factors as age, general condition, co morbid conditions, condition of the underlying lung and the cause of empyema affect the choice of surgery. Once appropriately chosen the patient can have all acceptable morbidity and mortality.

TREATMENT MODALITIES FOR COMPLICATED EMPYEMA THORACIS

Brig Muhammad Sultan Muzaffar, Major Farhan.

Institution: **Combined Military Hospital Rawalpindi, Pakistan**

AIM: To share our experience of treating complicated empyema thoracis in CMH RWP.

MATERIAL AND METHODS: Complicated empyemas are chronic empyemas which are of long standing duration with polymicrobial infections, underlying lung disease, MDR TB, recurrent empyema, post
resectional and those associated with bronchopleural fistula formation. A total of 39 such cases were encountered from Jan 2001 to Nov 2004.The treatment carried out was decortication along with underlying lung resection with or without muscle transfer. Thoracoplasty was carried out in those without muscle bulk and previous operations. Open drainage with window formation was done in those not fit by general condition. Transpericardial closure of BPF was done in two cases.

RESULTS: The patients achieved the desired goals according to the treatment designed. There were 4 deaths. None of the patient had recurrent, empyema and all recovered.

CONCLUSION: Complicated empyemas are difficult to treat and result in significant mortality and morbidity with prolonged hospital stay and cost. Early appropriate treatment is required as suited to the patient will decrease the cost and suffering to the patient.

MONDAY MARCH 28, 2005
EMERALD HALL C

Single Stage Surgical Procedure for Bilateral Lung and Liver Hydatid Cysts

Prof RS Dhaliwal, D Das, S Luthra, S Goyal, Y Vanna.

Institution: **Departt. of Cardiovascular & Thoracic Surgery, Post Graduate Institute of Medical Education & Research, Chandigarh, India**

INTRODUCTION: In patients who are having bilateral lung and liver hydatid cysts the usual approach is to do three staged operations- two thoracotomies and a laprotomy for removal of these cysts.

This leads to significant morbidity, repeated hospitalization and increased cost to the patient. In order to avoid these problem$, senior author (Prof RSD) devised one stage surgical procedure for bilateral lung and liver hydatid cysts and this paper deals with this experience.

METHODS: Between Jan1988 to Dec 2004 we came across 179 patients of pulmonary Hydatid cysts, out of which 16 patients presented with bilateral pulmonary and liver Hydatid cysts. There were 10 males and 6 females between age of 17 to 56 yrs. Usual symptoms were dull pain in chest or abdomen, cough, hemoptysis and expectoration of fluid and memberane (in 5).The pulmonary hydatids were approached through midsternotomy using double lumen endotracheal tube for alternate one lung ventilation. Cysts were removed using Barret's technique. The liver hydatid cysts were removed by opening the diaphragm in 10 patients and in 6 patients a midline laparotomy was done as a continuation of midsternotomy.

RESULTS: There was no mortality. Post operatively there was no hemorrhage, air leakage, BP fistula or empyema in any patient. There was no recurrence of cyst in any patient - follow up ranged from one month to 15yrs. No sternal complication was seen.

CONCLUSION: Our approach single stage removal of bilateral pulmonary hydatid cysts and liver cysts(midsternotomy + transdiaphragmatic removal or laparotomy) is superior to classic three stage approach as it decreases morbidity, mortality, hospital admissions and stay and decreases cost.

Pulmonary Metastases: Is there a role of thoracic surgery?

Rizwan Qureshi, D Prakash, A. Jilaihawi

Institution: Department of Thoracic surgery, Hairmyres Hospital E. Kilbride, Glasgow United Kingdom.

AIMS/OBJECTIVES: To evaluate the role of Thoracic surgery and prognostic indicators influencing appropriate patient selection in the management of Pulmonary metastases.

METHODS: 250 patients underwent curative resection for lung tumors over a period of 5 years. Twenty one (8%) of these had surgery for pulmonary metastases. There were 16 male and 5 female with median age of 35 years (6 -70). The commonest primary tumor histology was epithelial (62%).Kaplan Meir method was used to calculate the acturial survival and prognostic indicators were analysed for their predictiveness in appropriate patient selection.

RESULTS: Overall median survival was 36 months after a mean follow up of 48 months (1-98). Actuarial survival amongst patients who had resection with curative intent was 61.9% at 1st year, 23.8% at 5 years and 14.2% at 10 years.

However, patients who were inoperable or had incomplete resection, It was 21.5% at 1st year, 8% at 5 years and 3% at 10 years. The 5-year survival was 17.8% with disease free interval (DFI) of >6 months and 3.5% in < 6 months. Median survival of 37 months for solitary / unilateral lesion, 25 months for multiple bilateral lesions, 108 monthsforGermcelltumors,24 months for other histologies,36 months with adjuvant therapy and 25 months without such measures.

CONCLUSIONS: Thoracic surgery in the management of pulmonary metastases is potentially curative.

·Univariate analysis revealed better prognosis of DFI>6 months, solitary/unilateral lesion, Germ cell tumor and adjuvant therapy in selected cases.

MONDAY MARCH 28, 2005
EMERALD HALL C

Video-Assisted Thoracoscopic Surgery (VATS). A novel approach in the management of thoracic empyema in our part of the World. experience at a tertiary care center in Pakistan

Sulat Fatimi, Nawal Salahuddin, Fayyaz Hussain

Institution: The Aga Khan University Hospital.

BACKGROUND: Traditionally non resolving thoracic empyema which cannot be managed with tube thoracostomy is usually treated via posterolateral thoracotomy which required increased pain medications and increased number of hospital stay.Video-assisted thoracoscopic surgery (VATS) is a novel minimally invasive operative technique for the management of thoracic empyema and its use is becoming more widespread in most parts of the world. Here we present our experience of 84 patients who underwent VATS for diagnostic or management purposes.

METHODS: Between January 1, 2000 to August 12004, 84 patients underwent VATS at the Aga Khan University Hospital for management of the empyema.. Their charts were reviewed and data was collected regarding demographics, co-morbidities, postoperative pain requirements, post-operative ICU stay, chest tube requirements, transfusion requirements and total hospital stay.

RESULTS: The age range of these 84 patients who had VATS for empyema was between 5 yrs – 84 years.The indication of VATS in all these patients was multiloculated empyema secondary to bacterial infection. None of the tuberculous empyemas were treated with VATS. Initial tube thoracostomy was tried in 40 of these patients. In 44 patients the VATS was done as a primary treatment for empyema. 75 % of these patients had CAT Scan prior to surgery. The VATS was converted to open thoracotomy in 9 patients—in 6 patients for dense adhesions and inability of the lung to expand completely after VATS decortications and in 3 patients for bleeding. In all patients, we had complete evacuation of pus and loculi and near total expansion of the lung. There were no postoperative complications in any of the patients who underwent VATS successfully. Average hospital stay was 4 days and all patients were discharged with empyema tubes. No patient who successfully underwent VATS required epidural catheter. The average return to full activity was three weeks.

CONCLUSION: VATS is an excellent approach to the management of empyema especially in our setting.. The potential benefits are decreased postoperative pain, decreased hospital stay and earlier return to work and therefore less financial burden.

Video Assisted Thoracoscopic Surgery (VATS)

Brig Muhammad Sultan Muzaffar, Major Bilal.

Institution: **Combined Military Hospital Rawalpindi, Pakistan.**

AIM: To present the variety of procedures performed with VATS our department.

MATERIAL AND METHODS: Patients with indeterminate pleural effusion, pleurodesis for malignant pleural effusion, decortication for stage II empyema thoracis, surgical biopsies, video assisted thoracoscopic lung resection and thoracoscopic sympathectomy are the various procedures performed in our department.

The procedures are carried out under general anaesthesia in a lateral decubitus position. Two, three or four ports are made according to the situation. Disposal ports are used. Zero degree telescope is used. Instruments are designed for the various procedures including local made instruments.

RESULTS: The results are excellent ranging from 90 - 100% success in all the indication. Air leaks, haemorrhage, port site infection were the more important complications. No deaths were directly related to the procedures.

CONCLUSION: Video assisted thoracoscopic surgery is a major advance in thoracic surgery since the 90,s. The scope of procedures needs to be expanded to make use of the approach with, its minimum morbidity and mortality and high percentage of results.

MONDAY MARCH 28, 2005
EMERALD HALL C

Thoracoscopic Resection of Solitary Pulmonary Nodule

Brig Muhammad Sultan Muzaffar, Major Farhan.

Institution: **Combined Military Hospital Rawalpinidi**

AIM: To share our experience of thoracoscopic resection of solitary pulmonary nodule

MATERIAL AND METHODS: Solitary pulmonary nodule presents as a diagnostic challenge. Radiological and other non invasive investigations arc not sensitive enough to rule out a carcinoma unless radiological stability or specific patterns of calcification are present. Bronchoscopy and percutaneous FNAC or biopsy arc also not always diagnostic and have limitations of their own. Thoracotomy is a major undertaking unless strong evidence for the presence of carcinoma are available. In this setting thoracoscopic resection is a very helpful method to diagnose and treat benign lesion. This is the experience of our first case.

RESULTS: The patient made a smooth post op recovery

CONCLUSION: VAT resection in its infancy. Time has come to further our experience of this very' useful diagnostic and therapeutic tool.

How VATS had changed the management of spontaneous pneumothorax in the 21st century.

Saulat Fatimi, Nawal Salahuddin, Fayyaz Hussain

Institution: The Aga Khan University Hospital.

BACKGROUND: Spontaneous pneumothorax with persistent air leak is now universally regarded as an indication of surgery but classical thoracotomy carries significant morbidity. . Video-assisted thoracoscopic surgery (VATS) is a novel operative technique which has influenced the management of spontaneous pneumothorax in the 21st century. Here we present our experience of 22 patients who underwent VATS for spontaneous pneumothorax.

METHODS: Between January1, 2001 to November 2004, 22 patients underwent VATS at the Aga Khan University Hospital for spontaneous pneumothorax. Their charts were reviewed and data was collected regarding success of surgery, demographics, co-morbidities, postoperative pain requirements, post-operative complications, chest tube requirements, transfusion requirements and total hospital stay.

RESULTS: The age range of 22 patients who had VATS for diagnostic purposes was between 12yrs – 50 yrs. The indication for VATS in all patients was persistent air leak for more than 7 days or recurrence of pneumothorax after chest tube suction was turned off. 3 patients had bilateral VATS for bilateral blebs. The patients with secondary causes of pneumothorax were not included in this though the indications of treatment were the same. Apical pleural tenting, clipping of the bullae and mechanical abrasive pleurodesis was performed in all. Only one patient had limited basilar pneumothorax recurrence which was treated with tube thoracostomy. There was no mortality or requirement for ICU stay. Mean hospital stay was four days. The postoperative pain requirements were minimal and average return to full activity was 2 weeks.

CONCLUSION: VATS has changed the way the spontaneous pneumothorax is managed in the 21st century. Now the patients do not have to be treated conservatively for weeks nor they have to undergo painful thoracotomy. Early clipping of bullae and mechanical abrasive pleurodesis via VATS is the safest and most cost effective approach in the treatment of spontaneous pneumothorax with persistent air leaks.

MONDAY MARCH 28, 2005
EMERALD HALL C

Video-Assisted Thoracoscopic Surgery (VATS): How It has influenced the way mediastinal adenopathy is managed in this part of the world.

Saulat Fatimi, Nawal Salahuddin, Fayyaz Hussain

Institution: The Aga Khan University Hospital.

BACKGROUND: The diagnosis of mediastinal adenopathy or anterior mediastinal masses is usually a dilemma for treating physicians, pulmologists and oncologists. Tradionally, these are treated according to one's clinical suspicion. CT guided biopsies are not usually diagnostic. Video-assisted thoracoscopic surgery (VATS) is a novel operative technique which has changed the way the mediastinal adenopathy or anterior mediastinal masses are being managed in this part of the world. It is superior to mediastinoscopy due to the ability to directly visualize the nodes being biopsied with many times magnification, its access to areas where mediasticoscopy cannot reach and also due to cosmetic reasons. Here we present our experience of 185 patients who underwent VATS for mediastinal adenopathy or for unexplained anterior mediastinal masses.

METHODS: Between January1, 2000 to October 2004, 185 patients underwent VATS at the Aga Khan University Hospital for the diagnosis of mediastinal adenopathy. Their histopathology results were reviewed and patients were divided into those in whom the diagnosis was achieved, those in whom diagnosis was narrowed down and in those in whom the diagnosis was not achieved. Their charts were reviewed and data was collected regarding demographics, co-morbidities, postoperative pain requirements, post-operative ICU stay, chest tube requirements, transfusion requirements and total hospital stay.

RESULTS: The age range of these 185 patients was between 20 yrs – 75 yrs. Diagnosis was achieved in 175 patients. 7 patients required repeat VATS for uncertain diagnosis. Three patients could not achieve any diagnosis inspite of repeat VATS biopsies. There was no mortality or requirement for ICU stay. Mean hospital stay was 36 hours. The postoperative pain requirements were minimal and average return to full activity was 10 days. The most significant finding was a change in treatment in 35% of the patients.

CONCLUSION: VATS is a valuable addition to the thoracic surgical practice in this part of the world. The potential benefits are accurate diagnosis, decreased post-operative pain, decreased hospital stay and cosmesis.

Role of Video Assisted Thoracoscopy in the management of Clotted Hemothorax

Tanveer Ahmad, Zahid Memon, S Waqar Ahmad, Fahim-ul-Haque

Institution: **Department of Thoracic Surgery, Jinnah Postgraduate Medical Centre, Karachi**

AIM OF THE STUDY: To evaluate Therapeutic value of Videothoracoscopy in Chest Trauma patients with Residual Hemothorax

PATIENTS AND METHODS: Fortythree (43) hemodynamically stable patients (34 males and 9 females) with chest trauma (blunt 31, penetrating 21) were examined and treated Videothoracoscopically over a period of 3 years from November 2001 to November 2004 at the Department of Thoracic Surgery, Jinnah Postgraduate Medical Centre. The indication in this group of patients was clotted hemothorax, which failed to be evacuated with conventional large bore (36 F) thoracostomy tube.

RESULTS: Associated injuries were seen in 50 % of the patients. Blunt trauma with flail segment was associated with pulmonary contusion in 10/43 (23.3%) patients and they underwent thoracoscopic examination once the pulmonary function was optimised. preoperatively. Ultrasound examination revealed clots in the pleural cavity with an average amount of 541 ml. Most (63.3%) of the patients underwent VATS in the first week of admission. The rate of conversion to thoracotomy was 6.9% (3 patients), due to failure of the lung to collapse as there were multiple adhesions with the chest wall. Post VATS full lung expansion (chest Xray 24-48 hours) was achieved in 70 % of patients and in 30% of the patients acceptable lung expansion was achieved by the end of the first week. Postoperative pain was minimal in the majority of the patients (VRS). The average duration of VATS was 70.16 minutes (min 60 mins; max 100 mins). Most patients (90%) had the thoracostomy tube removed in the first week after surgery. In only 4 patients was the tube kept for longer duration. Post VATS collection was found in only 4 (9.3%) patients. This was aspirated using US guidance.

CONCLUSION: Video thoracoscopy appears to be a safe, accurate and reliable operative technique for the evacuation of clotted hemothorax in hemodynamically stable patients. It reduces the hospital stay and minimizes pain and other postoperative complications.

KEY WORDS: Videothoracoscopy, chest trauma, clotted hemothorax.

MONDAY MARCH 28, 2005
EMERALD HALL C

VALVULAR HEART SURGERY

2:30 PM-4:00 PM

Panel of experts: Prof Aubyn Marath, Prof R S Dhaliwal, Dr Didier Loulmet, Dr Murali P Vettath, Dr Hani Najm, Prof Aziz Jamal Naqvi.

Coordinator: Dr Behram khan, **Moderator:** Dr Khalid Rasheed

Ahmad Alzaini (Egypt)
Mechanical heart valves: Are two leaflets better than one? Multi Centre Study in Egypt

S Rajan (India)
Left atrial reduction and Pulmonary vein isolation in chronic atrial fibrillation with Mitral Valve Disease.

Riaz Anwar Khan (Pakistan)
Mitral valve replacement (MVR) with and without posterior mitral leaflet preservation

Tariq Azam Siddiqui(Pakistan)
Emergency surgical referral for complications arising from percutaneous transvenous mitral commisurotomy

RS Dhaliwal (India)
TTK Chitra heart valve-our experience.

H Singh Bedi (India)
Use of an electric drill in aortic valve replacement for extensive calcific disease.

M Muneer Amanullah (UK)
Does the use of Steroids affects the inflammatory response following Cardiopulmonary Bypass.

Maqsood M Elahi (UK)
Redox-sensitive mechanisms of nitric oxide: revisiting the concepts in cardiac surgery.

Zahid Mahmood (UK)
Blood Transfusion after Coronary Artery Bypass: Effect of Storage Conditions on Platelet Function.

Left Atrial Reduction and Pulmonary Vein Isolation in Chronic Atrial Fibrillation with Mitral Valve Disease

Suresh Keshavamurthy, Rajan S

Institution: **Institute of Cardiovascular Diseases, Chennai, India**

Between May 1998 and August 2004, 56 patients (34 males and 22 females) with mitral valve disease and chronic atrial fibrillation with ages ranging from 14 – 55 years (mean 42.25 years) underwent mitral valve replacement (MVR) (Isolated MVR 42, MVR with tricuspid valve repair 8, Double valve replacement 6) combined with left atrial reduction and pulmonary vein isolation. Patients with LA size ^{3} 60 mm (69 ± 8mm) and Chronic AF ^{3} 1 year duration only were included. The duration of AF ranged from 1-12.6 yrs. Ten patients were in NYHA class II, 42 patients in class III and 4 in class IV. Forty five patients underwent this procedure as a primary procedure while 11 had mitral valve interventions done earlier (Closed Mitral Valvotomy-7, Open Mitral Valvotomy-1, Paravalvular leak following MVR-2, stuck valve-1). The mean Aortic cross clamp time was 62 minutes (42 - 96 minutes) and the cardio pulmonary bypass time was 96.4 minutes (71 – 141 minutes). There were 3 hospital deaths. Regular follow up examinations were done at 3, 6, 12 months and yearly thereafter. Fifty-two patients were on regular follow-up (98%). Postoperatively 50 patients were in Normal sinus rhythm and at 1 year follow-up 42 remained in NSR. Left atrial activity was demonstrated in 36 patients on echocardiography in the early post op period and in 32 patients at 1 year. Three patients were in atrial flutter and 7 in atrial fibrillation. Three patients required reexploration for excessive bleeding and 6 patients required ventilation for more than 48 hours. Seven patients required temporary pacing but no patient required permanent pacemaker. LA reduction with pulmonary isolation along with mitral valve surgery in patients with large LA dimensions yields satisfactory results with a good conversion to Normal Sinus Rhythm.

Mechanical heart valves: Are two leaflets better than one? Multi Centre Study in Egypt.

Ahmad Alzaini, Sameh Ibrahim sersar , Usama A Hamza

Institution: **Cardiothoracic Surgery department, Mansoura University, Mansoura, Egypt.**

OBJECTIVES: We tried to compare the long-term clinical outcomes of patients who underwent isolated aortic valve replacement with monoleaflet and bileaflet mechanical heart valves.

METHODS: From January 2000 through October 2004, 170 monolealet valves were used for isolated valve replacement, and through the same period of time, 350 bileaflet valves were used for isolated valve replacement. Detailed follow-up was performed to a maximum of 4.4 and 4.5 years with a total of 1250 and 1325 patient-years for single-disc valves and bileaflet valves, respectively. Survival and valve-related events were analyzed.

RESULTS: Both groups of valves were implanted from 2000 through 2004, The bileaflet valve had a significantly lower explantation rate, whereas the single disc valve had a significantly lower thromboembolism rate. No significant differences were detected in early mortality, long-term survival, and other valve-related complications. No significant difference was detected in survival or in any valve-related complication.

CONCLUSION: Single-disc and bileaflet valves provide similar clinical performance. The predominant use of bileaflet valves is not based on clinical outcomes.

Mitral Valve Replacement (MVR) with and without Posterior Mitral Leaflet preservation

Riaz Anwar Khan, Sohail Aslam, Taskeen Ahmad, Khalid Rehman, Nayyar Waseem, Hamid Ahmad, Murad Ali, Javed Nawab, Abdul Malik, Abid Aslam Awan, Jalal Khan, Parvez Mannan

Institution: **Dept of Cardiovascular Surgery PGMI Lady Reading Hospital Peshawar.**

OBJECTIVE: To assess the clinical outcome of two groups of patients with and without preservation of Posterior Mitral Leaflet during MVR.

METHODS: Data retrieved from the hospital record of patients who underwent MVR during Jan 1993 to December 2003. Patients divided into two groups: Group A (51), from Jan 1993 to December 1999, where posterior mitral leaflet was excised. Group B (71) from Jan 2000 to December 2003 where Posterior mitral leaflet was preserved. Data in the two groups analyzed regarding age, sex, NYHA status, Echocardiographic findings, total cardiopulmonary bypass time, cross clamp time, electric cardioversion after declamping, perioperative arrythmias. use of ionotropes while coming off bypass. In postoperative period the duration of ventilatory support, use of ionotropes, diuretics, anti arrythmic drugs,mortality and morbidity was assessed. Postoperative follow up assessment was done by NYHA status and echocardiographic findings at 06, 12 and 24 weeks.

RESULTS: There was no significant difference in cross clamp, cardiopulmonary bypass time in two groups. Spontaneous recovery rate after declamping in Group A (39.21%) vs (80.73%) in Group B. Use of ionotropes while coming off bypass in Group A (90.19%) vs (60.55%) in Group B. Electrical cardioversion after declamping was (60.78%) in Group A vs (07.40%) in Group B. Mortality rate in Group A (27.45%) vs Group B (08.45%). Mechanical ventilatory support time was (mean 15- 20 hours) in Group A vs (mean 05.40 hours) in Group B. Mean duration of postoperative ionotropic support in Group A (22 hours) vs (09 hours) in Group B.

CONCLUSIONS: Preservation of Posterior Mitral leaflet is a better option then excising it in mitral valve replacement.

Emergency surgical referral for complications arising from Percutaneous Transvenous Mitral Commisurotomy

Tariq A Siddiqi, Suhail Siddique, A Durrani, Saadat M Talal, Nadeem Ahmad, ArifurRehman Khan.

Institution: **Department of Cardiology and Cardiac Surgery, NICVD, Karachi.**

INTRODUCTION: Until the first publication by Inoue and coworkers on Percutaneuos Transvenous Mitral Commisorotomy (PTMC) in 1984, surgery was the only treatment available for patients with Mitral Stenosis. A considerable number of patients with MS have now been treated with PTMC, enabling efficacy and risk factors to be assessed.

MATERIAL AND METHODS: From Jan 2001 to December 2002, 181 cases of Mitral Stenosis underwent PTMC at our institute. The techniques employed used the Cribier metallic dilator, Inoue balloon or double balloon. Out of these, 7(3.8%) patients were referred for emergency surgery directly from the cardiac catheterization laboratory. These included 4 patients with decompensated severe Mitral Regurgitation, 2 patients with cardiac tamponade, and 2 patients with the metallic device stuck in the open position.

RESULTS: In 6 patients surgery was carried out under cardio-pulmonary bypass. One patient who had a perforation resulting in pericardial tamponade, was done without bypass. The mean waiting time for surgery was 2 hours (range 1-4 hours). There were 5 female and 2 male patients. The mean age of these patients was 21 years (range18-26 years). Mitral Valve Replacement was carried out in four patients who had developed severe MR after PTMC. In the other three patients, the mitral valve was found to be successfully dilated and surgery was directed towards removal of the device and closure of the perforations producing the tamponade. There was no mortality. All patients were followed up in the out-patients department with an echocardiogram at 1, 3 and 6 months. They were all found to be clinically and echocardiographically satisfactory.

CONCLUSION: PTMC is a safe procedure with relatively good results. The 3.8% incidence of complications necessitating emergency surgery at our institute is comparable to results from other centres. Facilities for emergency cardiac surgery, however, should preferably be available at centres where PTMC is being undertaken to reduce morbidity and mortality.

TTK Chitra Heart Valve- Our Experience

Prof RS Dhaliwal, S Luthra, S Goyal, D Das

Institution: **Departt. Of Cardiovascular &Thoracic Surgery, Post Graduate Institute of Medical Education & Research, Chandigarh, India.**

INTRODUCTION: Rheumatic valvular heart disease continues to be a major indication of closed and open heart surgery in India and other developing countries. The imported heart valves are quite expansive. TTK Chitra valve is the only valve manufactured in India which has given very good results .It cost almost half of an imported valve. We present here our experience with this valve over 6 yrs period.

METHODS: Jan, 1999 to Dec 2004, 1200 patients underwent valve replacements with various prosthesis in our department. Of these 257 patients had TTK Chitra valves implanted in various positions. 15 patients were lost to follow up. Of the remaining 246 (131-M, 115-F) 151 had MVR, 41 had A VR and 65 had DVR. Follow up ranged from 2-46 months. 142 patients were in AF. Associated procedures included tricuspid annuloplasty in 116, electrocautery Maze in 58, Aortic root enlargement in 4 and LA Plication in 3.

RESULTS: 30 days hospital mortality was nil. There was no thromboembolism and major bleed on follow up. There was no structural valve failure. Complications included minor wound infection in 14, respiratory infection in 15 and bed sore in 2. Post operative Echo Doppler study showed valve gradient between 3.5+1.29 mm Hg to 5.14+1.14 Hg for different sizes(25- 29) in Mitral position. In Aortic position gradient was 16.0+3.5mm to 17.0+4.0 mmHg for different sizes.(19-23) ,

CONCLUSIONS: TTK Chitra valve is a low cost valve with excellent haemodynamic profile and low complication rate. It is very much suitable for our poor patients.

MONDAY MARCH 28, 2005
EMERALD HALL C

Use of an Electric Drill in Aortic Valve Replacement for Extensive Calcific Disease

Harinder Singh Bedi, Raman Pal Singh, Bhupender Sengar

Institution: **Sigma New Life Heart Institute, Ludhiana, Punjab, India**

OBJECTIVES: Calcification is not uncommon on deformed valves. The calcification is usually on the leaflets but can extend into the annulus and even into the interventricular septum (IVS) . Removal of this calcium is mandatory to reach tissues which will take suturing . At the same time the calcium predisposes the patient to heart block due to damage to the conduction tissue during decalcification by conventional means. We present a method of removing calcium without damaging the surrounding tissues.

METHOD: A 45 year old presented as a diagnosed case of severe calcific aortic stenosis with a recent worsening of dyspnea to NYHA IV. Investigations revealed a severe AS (PG 120 mm) , severe PAH and severe LV dysfunction. The calcification was extensive and going into the IVS and AML. The ECG showed a LBBB. At aortotomy the calcification resembled an ossification and could not be broken with a pituitary ronguer. The smallest bit of a commercial drill was used to make holes in the block of calcium so that it could be removed piecemeal. The annulus was completely debrided and as much as possible of the calcium from the IVS was carefully removed.

RESULTS: A thorough decalcification of the annulus allowed precise and leak proof seating of the valve. The patient did not develop any additional AV block. He is in NYHA I and on 1 year follow up. The technique has been successfully duplicated in 5 more cases so far.

CONCLUSIONS: We present a safe, cheap and easily available technique of decalcification in the patient with a severely ossified valve with minimal risk of damage to the annulus and the conduction tissue.

Does the use of Steroids affects the inflammatory response following Cardiopulmonary Bypass

M Muneer Amanullah, Asif Hasan Jo Roe

Institution: Freeman Hospital, Newcastle upon Tyne

AIMS/OBJECTIVES: Cardiopulmonary bypass (CPB) induces an inflammatory response the intensity of which is proportional to its duration. We ask the question that In children undergoing open-heart surgery, is the use of prophylactic steroids of benefit in terms of attenuated inflammatory response or clinical benefit?
METHOD: A best evidence topic in cardiac surgery was written according to a structured protocol. The above question was addressed Altogether 302 papers were found using the reported search, only six represented the best evidence.
RESULTS: **Checchia** performed a 28-patient PRCT with Troponin I as the primary outcome measure and found significantly increased TnI in the placebo group, and inferred that myocardial damage was attenuated by steroids. **Bronicki** conducted a PRCT on 29 children with improvement in ICU stay, arterial–alveolar oxygenation and reduction in levels of Interleukin-6 in the steroid group. **Lindberg** performed a PRCT on 40 children, CRP was found to be significantly lower. **Varan** compared methylprednisolone at 30 mg/kg and 2 mg/kg and found no differences in clinical parameters, or in IL-6, IL-8, or CRP. **Schroeder** performed a 29 patient PRCT and found that adding methylprednisolone resulted in lower fluid requirement, lower inflammatory markers and shorter ICU stay.
CONCLUSIONS: These studies provide some evidence in favor of giving steroids. Steroids may reduce Troponin I release, CRP and reduce Interleukin-6. In addition there is reduction in ICU stay and fluid requirement, which may decrease post-operative morbidity.

MONDAY MARCH 28, 2005
EMERALD HALL C

Redox-Sensitive mechanisms of Nitric Oxide: Revisiting the concepts in Cardiac Surgery

Maqsood M Elahi, Bashir M Matata

Institution: Department of Cardiac Surgery, Glenfield Hospital, Groby Road, Leicester, LE3 9QP, United Kingdom.

BACKGROUND: We have previously demonstrated during blood recirculation that there is an increased production of oxidant species such as nitric oxide (NO) and peroxynitrite ($ONOO^-$) that are associated with a reduction in antioxidant capacity, proinflammatory cytokines and attenuation of complement activity in blood from patients with ischemic heart disease (IHD) in contrast to that of healthy subjects. However, the effect of these specific oxidant species on the inflammatory response is still not well defined.
METHODS: To investigate whether oxidative stress is responsible for the inflammatory response and the role played by the NO and $ONOO^-$, 50 ml of blood from healthy individuals were recirculated at normothermia (37^0C) in an extracorporeal circuit for 4h in the presence and absence of uric acid (1mM), a $ONOO^-$ scavenger, and L-NAME (10mM), a NO synthase inhibitor (n=15/group). Samples were taken at 0 and 4h for the assessment of TNF-á and IL-6 by sensitive ELISA assays.
RESULTS: Significant increase was observed in TNF-á and IL-6 from 24.5 ± 8.3 and 20.3 ± 5.5 pg/ml at baseline to 1866.6 ± 164.6 and 356.8 ± 78.4 pg/ml, respectively, after 4 h ($p<0.05$). The elevation in TNF-á was blunted by uric acid and L-NAME from 7.42 ± 3.31 to 262.5 ± 68.6 and 394.3 ± 120.0 pg/ml ($p<0.05$ in both instances). The rise in IL-6 was also significantly decreased by the two interventions from 23.3 ± 10.3 to 112.5 ± 17.4 and 74.57 ± 13.0 pg/ml, respectively ($p<0.05$ in both instances).
CONCLUSION: In conclusion, oxidative stress plays a major role in the over expression of TNF-á and IL-6 induced by the recirculation of blood in an extracorporeal circuit and this action is mainly mediated by $ONOO^-$ and NO. These results contribute to the understanding of the mechanism of extracorporeal blood circulation induced tissue damage and may represent a potential in targeting the inflammatory process in IHD patients undergoing cardiopulmonary bypass surgery.

Blood Transfusion after Coronary Artery Bypass: Effect of Storage Conditions on Platelet Function

Zahid Mahmood[1], Ian R Ramnarine[1], Michael J Higgins[2], Anne McGarrity[2], David J Wheatley[2], Philip R Belcher[2]

Institution: **1.Department of Cardiac Surgery, Glasgow Royal Infirmary 2.University of Glasgow Department of Cardiac Surgery, UK.**

BACKGROUNDOBJECTIVES: Cardiopulmonary bypass impairs formation of large stable platelet aggregates (macroaggregation), although formation of small aggregates (microaggregation) is well preserved[1]. A factor in the uncertainThe benefits of autologous intra-operative autologous blood transfusion[2] may be the effects of storage upon platelet function are unclear.

OBJECTIVES: To determine theThe effect on platelet function of: **1.** cCitrate preservative and **2**and**.** H heparinisation before storage on platelet function was therefore assessed.

METHODS: 27 Twenty-seven patients with normal platelet function, undergoing elective aorta-coronary bypass grafting, were randomly allocated to have 450-1000 ml of blood taken into CPDA anticoagulant bags either before (n = 14) or after heparinization heparinisation (n = 13). SBlood samples from the patients and stored blood were anticoagulated with rHirudin 200 U ml^{-1}. Using a sub-maximal concentration of collagen (0.6 mg ml^{-1}), mThe macroaggregatory response to sub-maximal collagenion was measured by impedance aggregometry, and microaggregation by single platelet counting.

RESULTS: 1.MACROAGGREGATION: before cardiopulmonary bypass the ex vivo median [inter-quartile range] response was 16.5 [12.8 – 18.7] W. This fell ten minutes after heparinisation to 9.1 [3.7 – 11.6] W ($p < 0.0001$). In the blood bags (in vitro), the initial response for non-heparinized heparinised blood was 4.8 [0.1 - 7.5] W ($p < 0.002$ vs. ex vivo) and at end-cardiopulmonary bypass was 2.4 [1.6 – 8.2] W ($p=0.84$). This was slightly but not significantly worse for bagged heparinized blood.

2.MICROAGGREGATION: in vivo heparinizsation decreased microaggregation both ex vivo and in vitro in CPDA blood (both $p<0.0001$); the in vitro response of non-heparinisized blood at end-cardiopulmonary bypass was greater than that seen following in vivo heparinization heparinisation ($p<0.007$). No difference in bleeding or transfusion requirements was seen.

CONCLUSIONS: Collecting blood into CPDA anticoagulant caused a marked deterioration in platelet function. This was worse after in vivo heparinisation and included depression of microaggregation. No clinical benefit of autotransfusion was seen.

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KEY WORDS: Cardiopulmonary bypass, platelet function, heparin, transfusion

MONDAY MARCH 28, 2005
EMERALD HALL C

CONGENITAL CARDIAC SURGERY

4:20 PM-6:00 PM

Panel of experts: Dr Zohair Al Halees, Carlo F Marcelletti, Krishna S Iyer, Lt Gen Syed Afzal Ahmad

Coordinator: Dr Haider Zaman, **Moderator:** Dr Ajmal Naqvi

Aubyn Marath (USA)
International Cardiac Surgery: Starting a cardiac program in a developing country.

Dr Zohair AlHalees (Saudi Arabia)
Truncus Arteriosus

M Muneer Amanullah (UK)
Developing Congenital Cardiac Surgery in Pakistan: Is now the right time.

Zahid Mahmood (UK)
Thoracotomy vs. Median sternotomy. Does the approach affect the outcome of BT shunt?

Saulat Fatimi (Pakistan)
Open heart surgeries in children under 6 kg in the 21st century. Experience of a tertiary care hospital in Pakistan.

Amit Mishra (India)
Medium term results of patients after surgical correction for TGA and related disorders

Anil Bhan (India)
Post-operative evaluation of arterial switch by 3D helical computed tomographic angiography

Krihna S Iyer
Management of Fallot's Tetralogy- current status.

Fazle Rabbi (Pakistan)
Vertical Vein Ligation Increases Mortality in Correction of Total Anomalous Venous Return.

MONDAY MARCH 28, 2005
EMERALD HALL C

International Cardiac Surgery: Starting a Cardiac Program in a Developing Country

PROF AUBYN MARATH

Institution: **President Cardiostart International, Tempa Florida, USA**

The ambitious intent, the practical realities and the formidable expense of developing a cardiac program have discouraged many over extended periods of time. Units flourish and fail all over the world, but it is quite often for reasons which have nothing to do with the planning and other basic rudiments of support that would ordinarily assist launch a successful program. It is very unfortunate, that when a program fails, much of the blame is apportioned to the most enterprising in a group who are condemned by colleagues or administrators for what is then seen as a reckless and flawed adventure.

This need not be so, nor are the aspirations of individual leaders unrealistic. To underscore this viewpoint, CardioStart International over a 15 year period, has provided free counseling and operative correction of heart disease to children and adults in under-developed countries utilizing medical, technical and non-medical expertise, irrespective of political position or religious creed. In response to a country's invitation, members of ***CardioStart's*** international management committee evaluate current state and requirements of the region to be assisted and then co-ordinate volunteer teams of experts drawn from specialties including cardiac surgery, cardiology, anesthesia, nursing and biomedical technology. These teams are convened to specifically perform complex heart operations, and provide a substantial basis for instruction and education to assist the development of heart and lung surgery and other related specialties. On most occasions, no team is the same. Volunteer experts arrive with different training backgrounds and experience levels. All come form different hospitals from around the globe. The perception that this places the visiting and local team at a disadvantages is dispelled by the organizational planning of CardioStart missions. Each center being established, visiting teams operate entirely with local surgeons, all related specialties represented by ***Cardiostart*** volunteers are matched by the local team. Equipment donations are provided to relieve budget constraints and assist continuation of the program subsequently and a full teaching program with care plans and procedures are left behind. This strategy helps development of the necessary personnel, and minimizes the discouragement when progress is held up. To date, CardioStart International has accomplished 31 visits to 19 countries.

Developing Congenital Cardiac Surgery in Pakistan: Is now the right time.

M Muneer Amanullah and Asif Hasan

Institution: Freeman Hospital, Newcastle upon Tyne

AIMS / OBJECTIVES: During the past decade significant advances have been made in the surgical management of congenital heart disease (CHD). This has been achieved because of better definition of the natural history, clearer morphologic classification, improvement in diagnosis, and understanding of the role of palliation and primary corrective and staged surgery. Also techniques of myocardial protection and refinements in surgical methods have changed the outlook of children with CHD. Awareness, education and better understanding of the post-operative care have resulted in children with CHD surviving into adulthood.

METHOD: The incidence of congenital heart defects has remained relatively constant over the last few decades at 7 - 8 per 1000 live births. There is an increased incidence of CHD for first-degree relatives at 2-5%. In Pakistan the majority of childbirths take place at home with minimal neonatal screening, thus the true incidence of CHD is Pakistan remains elusive

RESULTS: In the UK, with a population of 60 million, there are 4500 babies born with CHD each year. About 4500 cardiac operations are performed each year. While in Pakistan with a population of over 160 million, the incidence of CHD would be around 13500/year needing at least 10000-12000 operations but less than 1000 operations are performed each year.

CONCLUSIONS: It is time that an all purpose congenital cardiac surgical program is developed to cater to the needs of the children of this country. We need people with a vision, expertise and capabilities to pursue, sustain and develop a congenital cardiac surgical unit.

MONDAY MARCH 28, 2005
EMERALD HALL C

Thoracotomy vs. Median sternotomy. Does the approach affect the outcome of BT shunt?

Zahid Mahmood, Vijay Agarwal, Arjamand Shauq*, Ajith Karunatane, Antonio F. Corno, Marco Pozzi.

Institution: Department of Paediatric Cardiology* and Cardiothoracic surgery, Alder Hey Royal Children Hospital, Liverpool, England, UK

BACKGROUND: The Blalock-Taussig shunt is an excellent palliative procedure for cyanotic congenital heart defects. We reviewed two techniques, median sternotomy and thoracotomy, to study the influence of both the approaches on the morbidity and mortality of modified Blalock-Taussig(BT) shunt.

METHODS: 45 patients underwent BT shunt between January 2002 and October 2004. 24/45 (53.3%) patients underwent BT shunt through thoracotomy (Group A) and 21/45 (46.7%) through median sternotomy (Group B). All cases were operated by two surgeons and the approach was entirely dependent on the surgeon's preference, regardless of the diagnosis or the nature of presentation (elective or urgent). 38/45 (84.4%) patients underwent elective operation and 7/45 (15.6%) patients were operated as emergencies. 30/45 (66.3%) were males and 15/45 (33.7%) were females. In both groups the most frequent diagnosis was Tetrology of Fallot. We used SPSS V10 to analyse the data and unpaired t-test to calculate the P-value.

RESULTS: The post op saturation in both groups was same. However, post op inotropic support, no. of hrs of ventilation, ICU stay and hospital stay was significantly prolonged in group B as shown in table. Both groups were significantly heterogeneous in relation to age and weight (P=<0.05) but this did not affect the ventilation, ICU stay or hospital stay (P= 0.391) There were three early deaths (<30 days), 2/24 (8.3%) in Group B and 1/21 (4.7%) in Group A.

CONCLUSIONS: Median sternotomy approach for BT shunt seems to carry a higher morbidity than thoracotomy.

	Group A	Group B	p value
Age (days)	128.9 (3-1045)	52.7 (1-543)	<0.05
Weight (kg)	5.025±2.2 SD	3.424±1.4 SD	<0.01
Post-op inotropes >24hrs	1(4.2%)	7(33.3%)	<0.05
Post-op saturation %	85.4±4.3 SD	84.2±4 SD	0.351
Ventilation time (hours)	53(0-384)	183.66(1-1320)	<0.001
ICU stay (days)	3.3(1-16)	9.14(1-57)	<0.05
Hospital stay (days)	5(4-18)	14.59(5-40)	<0.005
Early mortality (<30 days)	1(4.2%)	2(9.5%)	0.59

Open Heart Surgeries in Children under 6 kg in the 21st Century. Experience of a Tertiary Care Hospital in Pakistan

Saulat Fatimi, Mehnaz ATIQ, Iqil Naqvi

Institution: **The Aga Khan University Hospital.**

BACKGROUND: Traditionally, open heart surgeries in infants under 6 kilograms are considered to be very high-risk procedures mainly due to the peri-operative complications. However, in the 21st century, due to advancements in peri-operative care, these patients are done routinely in the West. We present our results of open heart surgeries in such small children at the Aga Khan University Hospital.

METHODS: We reviewed all the patients under 6 kg who underwent open heart surgeries underwent open heart surgeries at the Aga Khan University Hospital from January 2003 till October 2004. Smallest baby was 3.2 kg. A total of 28 patients were identified. 24 patients had ventricular septal defects, 1 patient had TOF, two patients had DORV and one had AP Window. Total length of stay, ICU stay, CBP time, cross-clamp time, morbidities such as renal failure, ventilator requirements, liver dysfunction, coaggulopathy, chest re-opening, and low cardiac output were evaluated. Echocardiographic evaluation of all children was done at the time of hospital discharge and at the first outpatient evaluation in the clinic.

RESULTS: The age range of patients was 3 months to 15 months. Average mean pulmonary artery pressures were 52 mm Hg. There were 2 inhospital mortalities; one due to pulmonary hypertensive crises after extubation and another one due to cardiac failure. One patient died a year after surgery from pneumonia. 18 of these patients required ICU stay of more than 2 days. Four patients required re-intubation and required ICU stay of over 1 week. Two patients required re-opening of the chest due to bleeding and one patient required pacemaker for heart block. Average hospital stay was 10 days. Six months follow-up of the 25 patients showed excellent recovery.

CONCLUSION: The open heart surgeries in small babies can be done with minimal mortality in a third world country like Pakistan. However, these procedure are challenging and they do require far more intensive care management than adults.

Medium term results of patients after surgical correction for TGA and related disorders Narayana Hrudayalaya, Bangalore

Amit Mishra, Sunita Maheshwari, Shekhar Rao, Colin John, Devi Prasad Shetty, Rajesh Sharma.

Institution: **Department of Cardiothoracic and Vascular Surgery, Narayana Hrudayalaya, Bangalore, India.**

OBJECTIVE: Analysis of surgical results of TGA and related disorder.

METHOD: From May 2001 to Oct 2004, 135 patients underwent ASO for TGA IVS (N=77), TGA VSD (N=36), DORV VSD (N=22), 5 of the patients with TGA VSD had associated LVOTO. 44 patients underwent Sennings operation. One had Damus Kaye Stansel operation for non transferable coronary arteries.

RESULTS: 2 patents needed diaphragmatic plication ,2 patients needed PPI,1 patient developed moderate aortic regurgitation and 7 patient had mild aortic regurgitation ,two patients had mild ascending aortic gradient 7 patients had mild pulmonary regurgitation,2 patients had residual ASD.Total hospital mortality was as follows.TGA IVS N=3/77, TGA VSD N=2/36,DORV VSD N=2/22.Sennings N=4/42.There was 4 late deaths in ASO group .Incremental risk factors identified in these were co existing coarctation of aorta and intramural coronary artery.

CONCLUSION: ASO is the treatment of choice for TGA &DORV with sub pulmonic VSD. Intramural coronary and coexisting coarctation of aorta are incremental risk factor in our experience.

Post-operative evaluation of Arterial Switch by 3D Helical Computed Tomographic Angiography

Anil Bhan†, Rajesh Manithara Raman, Rajnish Juneja, Shyam Sunder Kothari, Anita Saxena, Sanjeev Sharma, Priya Jagia

Institution: **Max Hospital New Delhi†, AIIMS New Delhi**

OBJECTIVE: Three-dimensional (3D) helical computed tomography (CT) Angiography, in combination with axial images clearly demonstrates shape and spatial relations of great arteries, proximal pulmonary arteries, left and right ventricular outflow tracts, proximal coronary arteries. The renders 3D helical CT angiography as an excellent tool for follow up of arterial switch patients.

METHODS: In a study period from January 2003 to January 2004, 30 post-operative cases of arterial 3-36 months with a median age of 7.5 months. There were 17 boys and 13 girls with a mean body weight of 4.6 kg (range of 2.8-12 kg). Those patients less than 3 months post operative were excluded from the study. Helical CT was performed with a Somatom Sensation 16 scanner. Shaded surface display(SSD), maximum intensity projections (MIP) and multi planar reformatting (MPR) and volume rendering data were obtained after editing axial images. All patients also underwent 12 lead ECG, chest radiography and routine Echocardiography.

RESULTS: 3D helical CT Angiography clearly demonstrated shape and spatial relationship of great arteries, proximal pulmonary arteries, left ventricular outflow tract and right ventricular outflow tract in all patients. One patient had supra valvular left ventricular outflow tract narrowing at anastamosis (2 years postoperatively), correlated with echocardiographic gradient of 48mm of Hg. In two other patients with echocardiographic gradient of 25mm Hg (3 years postoperatively) and 20mmHg (1 year postoperatively), no narrowing was seen on CT. One patient had pseudoaneurysm arising from anastomotic site. One patient had right ventricular outflow tract narrowing at anastamosis correlated with echocardiographic gradient of 50mmHg. None of the 25 patients had proximal coronary narrowing or kinking. In three cases the origin of left main coronary artery was not seen though left anterior descending and circumflex could be seen and was normal. CT showed right pulmonary artery narrowing in 1 patient with echogradient of 33-34 mmHg. Three patients had proximal right pulmonary artery gradient of 24-40mm of Hg but no evident narrowing on CT.

CONCLUSION: 3D helical CT Angiography is an excellent modality to follow up post operative arterial switch patients with regard to reconstruction of great arteries, left and right outflow tracks and proximal coronary arteries, and can be considered as an alternative method to Angiography. It is superior to echocardiography in assessing outflow tracks and proximal coronaries but lacks ability to give functional/dynamic information.

VERTICAL VEIN LIGATION INCREASES MORTALITY IN CORRECTION OF TOTAL ANOMALOUS VENOUS RETURN

Fazle Rabbi, Suhail Siddique, Tariq Siddiqi, Akhtar Hussain.

Institution: **Department of Cardiac Surgery, NICVD, Karachi.**

ABSTRACT: This is a retrospective study of 18 patients operated between January 2000 - December 2003 with Supracardiac Total Anamolous Pulmonary Venous Return. The mean age of these patients was 7.2 years (range 5.1-8.3 years). There were 11 (61%) male and 7 (39%) female patients. The approach to the Pulmonary vein was through the Right Atrium as described by Shumacker and King.The vertical vein was ligated in the first 8 (44%) patients. 5 (62.5%) patients died in the first 48 hours having come off bypass uneventfully. The vertical vein was left patent in the last 10 (56%) patients. 3 (30%) patients died. All patients are still being followed up and are currently asymptomatic.

CONCLUSION: Vertical vein ligation may be detrimental to the postoperative function of the left heart, which is anatomically underdeveloped due to an inadequate pulmonary venous return. Leaving the vertical vein patent may avoid sudden increase of haemodynamic load to a non compliant left ventricle thereby decreasing mortality.

5TH BIENNIAL INTERNATIONAL CONFERENCE

OF THE PAKISTAN SOCIETY OF CARDIOVASCULAR AND THORACIC SURGEONS

SCIENTIFIC PROGRAM

29TH MARCH 2005

CRYSTAL HALL B

PEARL CONTINENTAL HOTEL, LAHORE. PAKISTAN

THORACIC SURGERY

9:00 AM-10:40 AM

Panel of experts: Mr Mike Cowen, Mr Kumarasingham Jeyasingham, Prof Parvez Mannan, Prof Iftikhar Hussain Rathore.
Coordinator: Dr Aamir Bilal, **Moderator**: Dr Iftikhar Hussain.

Kumarasingham Jeyasingham (UK)
The Management of Oesophageal Carcinoma in Developing Countries

Mike Cowen (UK)
Recent Advances in Thoracic Surgery and the management of Lung cancer

Rizwan Qureshi (UK)
Surgical management of gastro esophageal reflux and hiatus hernia in a thoracic surgery unit.

Mike Cowen (UK)
Video-assisted thoracoscopy in the management of pleural disease

Aamir Aziz
Electronic thoracic atlas generated from high resolution Computed Tomography - Use in minimally invasive Cardiothoracic Surgery planning.

The Management of Oesophageal Carcinoma in Developing Countries

Kumarasingham Jeyasingham

Institution: **Consultant Thoracic Surgeon, UK.**

The objectives of surgical treatment in oesophageal carcinoma are cure; failing which, palliation. Where resection is not feasible, some form of non-resectional surgery has to be performed for palliation, e.g. by-pass, intubation, or endoluminal surgery.

In recent years, advances in the diagnostic field have enabled accuracy in the anatomical extent of the tumour, as well as the histopathological nature of the disease. Adenocarcinoma, which was commonly seen at the oesophago-gastric junction, is now being increasingly diagnosed in the lower oesophagus. The exact aetiological cause of this change is not entirely clear; although the occurrence of this after a latent period following the widely held policy of Medical management of acid reflux disease with H2 receptor blockers is not without coincidence.

The early diagnosis of oesophageal carcinoma has its turn enabled less extensive procedures in "early" or "superficial" cancer. Epidemiological studies have also helped in defining populations at high risk, and preventative programmes are being instituted on a national as well as an international scale.

Despite the advent of Neo-adjuvant Trials, the expense involved in the efficient management of these studies and the excellent results of extensive resection in the early stages lend justification for developing countries to adopt a purely surgical approach to this problem.

TUSEDAY MARCH 29, 2005
CRYSTAL HALL B

Surgical management of Gastro-esophageal reflux and hiatus hernia in a thoracic surgery unit

Rizwan Qureshi, Kieren McManus,James McGuigan.

Institution: **Department of Thoracic surgery Royal Victoria Hospital Belfast United Kingdom.**

AIMS/OBJECTIVES: To evaluate efficacy of surgical procedures performed for elimination of hiatal hernia and relief of gastroesophageal reflux disease (GERD) in a Thoracic surgery unit.

METHOD: 134 patients who underwent a primary surgery for hiatal hernia, GERD or both over a period of 10 years were evaluated. Appropriate procedure was selected on the basis of anatomical and physiological assessments by means of barium studies, endoscopy, monometry and 24-hour pH monitoring. The outcome of the procedure were graded according to previously published criteria and were compared with the log-rank test. Patients with recurrent symptoms were fully re-investigated. Mean follow up was 4.95 years (0.5-16)

RESULTS: Nissen Fundoplication (n=85) by abdominal approach was mainly reserved for sliding hiatus hernia associated with GERD with minimal or no mucosal inflammation and normal motility on esophageal monometry.Thoracic (n=29) approach was considered in patients with esophageal shortening. Belsey Mark IV (n=20) was the preferred procedure in the presence of impaired motility and no evidence of severe esophageal inflammation or shortening. Overall excellent or good result was achieved in 123(91.7%) patients, 93.9 % in Trans-abdominal Nissen, 89.7% in Transthoracic Nissen and 88.3% in BM-JV group, p=0.02

CONCLUSIONS: Our experience in a Thoracic surgery unit suggest that surgery for hiatus hernia and GERD can achieve satisfactory success rate ,where the appropriate procedure is selected.

Electronic thoracic atlas generated from high resolution Computed Tomography - Use in minimally invasive Cardiothoracic Surgery planning

Aamir Aziz

Institution: **Biomedical Imaging Laboratory (BIL), Agency for Science, Technology and Research (ASTAR), Matrix, Singapore**

LEARNING OBJECTIVES: To develop a digital thoracic model using data from diagnostic high resolution CT for planning of minimal invasive cardio-thoracic surgery (MICTS). It incorporates basic concepts of image segmentation, model building, endoscopic visualization and insertion of tools in chest wall predicting the correct portals and verification.

BACKGROUND: Cardiac disease is on the rise and is the biggest killer in men. Surgery is often the only means to manage it and newer and safer techniques are now available. One of such technique is minimally invasive cardiothoracic surgery (MICTS). Few small portals are incised in the chest and manipulators are inserted in the chest. This reduces the surgical burden and complications. Successful MITS depends on training of the surgeon and proper planning of the procedure [1] [2]. Surgeons select port locations using external anatomical landmarks as an estimate of patient's internal anatomy. The port location directly influences the access to surgical sites and maneuvering of the instruments. This clinical method is often inaccurate and external landmarks may not correspond to patient's internal anatomy. It is desirable to have digital thoracic model, which can be used for training and planning of MICTS.

IMAGING FINDINGS OR PROCEDURE DETAILS: Data available with contrast enhanced high resolution CT is first segmented according to the tissues of interest into chest wall (bone and soft tissue) and mediastinum (blood vessels, heart and soft tissue). This process is done rapidly and semi- automatically using segmentation algorithm developed by us (patent pending). A 3D rotatable, deformable thoracic model is constructed that represents each segmented entity and is labeled in an atlas format. The system interface is well rendered and is easy to use. The port placement is then simulated considering the target internal anatomy.

CONCLUSION: A high-resolution digital thoracic model in atlas format can be readily obtained with segmentation algorithm and can be developed to form the basis for a MICTS simulation / planning system.

TUSEDAY MARCH 29, 2005
CRYSTAL HALL B

CONGENITAL CARDIAC SURGERY

11:00 AM-1:30 PM

Panel of Experts: Prof William Novick, Prof Roberto R. Favaloro, Prof Rodolfo Neirotti, Anil Bhan, Lt. Gen. Syed Afzal Ahmad.

Coordinator: Dr Asim, Moderator: Dr Raja Parvez Akhtar

William Novick (USA)
Flap valve double patch closure of ventricular septal defects in children with increased pulmonary vascular resistance.

Suresh G Rao (India)
Lessons learnt in performing Congenital Heart Surgery on neonates in developing countries.

Rajesh Sharma (India)
Medium Term Results of Patients after Surgical Correction for TGA and Related Disorders.

Carlo Vosa (Italy)
Paediatric complex cardiac cases from emergent countries: Preliminary Results

Hani Najm (Saudi Arabia)
Current management of pulmonary atresia with intact ventricular septum.

Carlos J Troconis (Venezuela)
Tropicalization of vanguard CHD management in Emergent Countries: achievable or not.

Anil Bhan (India)
Ross procedure in children – surgical experience

TUESDAY MARCH 29, 2005
CRYSTAL HALL B

Flap Valve Double Patch Closure of Ventricular Septal Defects in children with increased Pulmonary Vascular Resistance.

William M Novick, Nestor Sandoval, Vasily Lazorishinets, Alexander Baskevitch, Ivan Malcic, Gustavo Carrillo, Xiomung Mo, Robert Reid, Thomas G Di Sessa.

Institution: **INSTITUTIONS: University of Tennessee, Memphis, TN, USA; Clinica Shaio, Bogota Colombia; Amosov Cardiovascular Intstitute, Kyiv, Ukraine; First Children's Surgical Center, Minsk, Belarus; Rebro University Hospital, Zagreb, Croatia; Nanjing Children's Hospital, Nanjing, China, University of Kentucky, Lexington, Kentucky, USA; International Children's Heart Foundation, Memphis, TN, USA.**

OBJECTIVES: Closure of a large ventricular septal defect (VSD) in children with an elevated pulmonary vascular resistance (PVR) is associated with significant morbidity and mortality. Sophisticated medications and circulatory assist devices may not be available to assist in the care of children with elevated PVR undergoing VSD closure. We designed a fenestrated flap valve double VSD patch to decrease the morbidity and mortality associated with closure of a large VSD in this high risk group.

METHODS: Ninety-one children (4.0 ± 3.1 years) with a large VSD and elevated PVR (10.5 ± 4.9 Wood units) underwent double patch VSD closure. The routine VSD patch was fenestrated (4-8 mm) and on the left ventricular side of the patch, a second smaller patch was attached to the upper third of the fenestration prior to VSD patch placement.

RESULTS: Fifty-six children with a VSD as the primary lesion, 16 with complete AV Canal, 10 with Double Outlet Right Ventricle/VSD, 2 Interrupted Aortic Arch/VSD, 2 Truncus Arteriosus, and one each of Transposition/VSD, Corrected Transposition/VSD, Total Anomalous Pulmonary Venous Connection/VSD, VSD/left PA atresia and Aortopulmonary Window received operation with an overall early mortality of 7.7% (7/91). Early survival was significantly different ($P < 0.05$) between the VSD only group (54/56) and complex defects group (30/35). Cardiopulmonary bypass time (CPBT) and ischemic time (IT) were also significantly different between the two groups (both $P < 0.001$). There have been 7 late deaths; 2 VSD and 5 complex defects.

CONCLUSIONS: Closure of a large VSD with elevated PVR can be performed with acceptable mortality and morbidity.

Medium term results of patients after surgical correction for TGA and related disorders Narayana Hrudayalaya, Bangalore

Amit Mishra, Sunita Maheshwari, Shekhar Rao, Colin John, Devi Prasad Shetty, Rajesh Sharma.

Institution: **Department of Cardiothoracic and Vascular Surgery, Narayana Hrudayalaya, Bangalore, India.**

OBJECTIVE: Analysis of surgical results of TGA and related disorder.
METHOD: From May 2001 to Oct 2004, 135 patients underwent ASO for TGA IVS (N=77), TGA VSD (N=36), DORV VSD (N=22), 5 of the patients with TGA VSD had associated LVOTO. 44 patients underwent Sennings operation. One had Damus Kaye Stansel operation for non transferable coronary arteries.
RESULTS: 2 patents needed diaphragmatic plication ,2 patients needed PPI,1 patient developed moderate aortic regurgitation and 7 patient had mild aortic regurgitation ,two patients had mild ascending aortic gradient 7 patients had mild pulmonary regurgitation,2 patients had residual ASD.Total hospital mortality was as follows.TGA IVS N=3/77, TGA VSD N=2/36,DORV VSD N=2/22.Sennings N=4/42.There was 4 late deaths in ASO group .Incremental risk factors identified in these were co existing coarctation of aorta and intramural coronary artery.
CONCLUSION: ASO is the treatment of choice for TGA &DORV with sub pulmonic VSD. Intramural coronary and coexisting coarctation of aorta are incremental risk factor in our experience.

Pediatric Complex Cardiac Cases From Emergency Countries: Preliminary Results

Gabriella Farina, Veronica Russolillo, Ettore Merlino, Giuseppe Caianiello, Gaetano Palma, Felice Rosapepe, Sabato Cioffi, Marco Mucerino, Sergio Palumbo, Riccardo Tozzi, Carlo Vosa

Institution: **Second University of Naples, Italy.**

Pediatric cardiac surgery of most congenital heart disease is currently performed in the early months of life, in industrialized countries. In areas of social and political emergency, International Organizations are hardly working to support economic charges in order to warrant medical care and surgery, locally, for every children affected with congenital heart disease.

Since February 2003 until now, with the collaboration of International Organizations working on emergencies countries such Palestine and Iraq, we received at Department of Paediatric Cardiac Surgery of the Second University of Naples, Monaldi Hospital, Italy, 46 children affected by different congenital heart diseases: 2ASD, 2aortic coarctation, 11VSD, 1subaortic stenosis, 3PA+VSD, 3TGA+VSD, 4CCTGA+VSD, 3complete AVSD, 10TOF, 1Truncus, 1Ebstein, 3univentricular heart, 1DCM, 1aortic valve regurgitation.

The mean age was 4.4 years. All patients were severely symptomatic for poor weight growth in 40pts, severe cyanosis in 18pts, previous embolism in 2pts, pulmonary infections in 5pts. Complete correction was performed in 39pts, palliative surgery in 6; cardiac transplantation in 1. Three pts died after surgery (2.1%), 2pts needed surgical haemostasis for bleeding. The mean time of assisted ventilation was 12.3 hours, the mean time of permanence in the ICU was 30.5 hours. All other 43pts were discharged home in good clinical conditions.

In spite of the excellent results in these complicated patients, we can affirm that the surgical risk and the incidence of immediate complications are similar to normal matched population, but the delayed surgical timing causes a prolonged use of inotropic drugs and a prolonged stay in the ICU.

Ross procedure in Children – Surgical Experience

A Bhant, A Sampath Kumar, Sandeep, SS Kothari, R Juneja

Institution: Max Hospital and All India Institute of Medical Sciences, New Delhi

Ross in 1967 first described the use of pulmonary autograft for aortic valve replacement. The procedure is widely used since then for bicuspid aortic valve with aortic stenosis and regurgitation. We report our experience with ross procedure in children at our institute. Since 1994, 39 patients below 15 years of age underwent Ross procedure. Nine patients had rheumatic aortic valve disease and 30 patients had congenital aortic stenosis and regurgitation. Aortic valve balloon dilatation was done in 12 patients and severe AR following the procedure necessitated the procedure. Infective endocarditis was present in 11 patients. Pulmonary homograft was used in 32 patients, while seven patients had bioprosthesis used at pulmonary position. Follow-up of 3 – 36 months of these patients showed that those patients with rheumatic valve disease underwent reoperations either for aortic valve or mitral valve and were at increased risk of valve degeneration and failure. While those with congenital aortic stenosis were having mild or trivial AR, no aortic gradient and minimal pulmonary gradient. Only four deaths were reported. Ross procedure has been found to be very useful in congenital aortic stenosis in paediatric population as well. The autograft grows with the patient and none of the problems encountered with mechanical valves are encountered here. Primary autoraft failure or pulmonary homograft failure have been reported by many but is rare and late in the course.

CARDIAC ANESTHESIA / INTENSIVE CARE & VASCULAR SURGERY

2:30 PM-4:00PM

Panel of Experts: Dr Grayson Wheatly, Prof James Thomas, Prof Renato Pacis, Dr I M Ervine, Dr Abdul Waheed.

Coordinator: Dr Riaz Anwar Khan,
Moderator: Dr Ajmal Naqvi

Rodolfo Neirotti (USA)
Early extubation in Congenital Heart Surgery

IM Ervine (UK)
Mechanical support for the failing heart. Issues and implications for critical care.

Renato Pacis (Philippine)
Recent Trends in Cardiac Anesthesia.

Teruhisa Kazui (Japan)
Thoracic Aortic Aneurysm Surgery – "How to protect Brain

Grayson Wheatly (USA)
Endovascular Techniques and Technology – Benefits to the emergent countries.

Anil Bhan (India)
Optimal Blood Gas strategy for brain protection in Pediatric Cardiac Surgery

Thoracic Aortic Aneurysm Surgery- How to Protect the Brain

Teruhisa Kazui, M.D.

Institution: First Department of Surgery
Hamamatsu University School of Medicine, Japan

It has been recognized that an appropriate selection of cerebral protection method has significant impact on the surgical outcome of thoracic aortic aneurysm or dissection. However, the optimal method for brain protection is yet to be established, and varies from institution to institution. The methods currently used are deep hypothermic circulatory arrest (DHCA) with or without retrograde cerebral perfusion (RCP), and antegrade selective cerebral perfusion (SCP).

Recent experimental and clinical studies indicate that DHCA with or without RCP has a limited "safe" duration of the systemic circulatory arrest. Therefore, our current strategy for cerebral protection is DHCA with or without RCP applied in selected cases where the expected cerebral protection time to be required is less than 25 minutes. On the other hand, SCP is exclusively used in cases requiring longer cerebral protection time.

The three different cerebral protection methods were used in 521 patients till the end of August, 2004 with the following distribution; DHCA alone in 10%, DHCA with RCP in 13%, and SCP in 77% of the patients.

Overall in-hospital mortality in recent series with SCP was below 5% including the emergency cases, while the incidence of stroke was 3%.

In conclusion, antegrade SCP facilitates complex surgical procedures like total arch replacement by providing a longer cerebral protection time and therefore, is the method of choice for cerebral protection in such cases.

TUSEDAY MARCH 29, 2005
CRYSTAL HALL B

Early Extubation in Congenital Heart Surgery

Rodolfo Neirotti

Institution: DeVos Children's Hospital, Grand Rapids MI, USA

ABSTRACT: The concept of early extubation following congenital heart surgery is not new. Changes in health care have generated increasing interest in this technique. Some of the problems following surgery are related to the endotracheal tube, mechanical ventilation, and interventions necessary to maintain them. In order to evaluate the impact of early extubation (within six hours postoperatively) on children undergoing congenital heart surgery, retrospective data were obtained from records of 1000 consecutive patients. Early extubation occurred in 80.2% (73% in the operating room). Early extubation was not limited to simple anomalies. This was also possible in complex anomalies, such as Fallot's tetralogy including those with pulmonary atresia, absent pulmonary valve and complete atrioventricular septal defects (n=106) 91% and Fontan operations (n=17) 88%. There were no deaths related to early extubation. Preoperative intubation was a risk factor for postoperative ventilation. As expected, the patients requiring ventilation after surgery were younger, smaller and more critically ill than those that met the criteria for early extubation. A change in attitude combined with appropriate anesthetic and surgical techniques permitted safe, early extubation in a large number of patients. Patient populations vary between institutions. Early extubation is not always possible, but for those patients, in whom it is feasible, the benefits included simplified postoperative care and increased patient and family satisfaction. When combined with clinical practice guidelines, it can result in significant reduction in the cost of patient care after cardiac surgery.

OPTIMAL BLOOD GAS STRATEGY FOR BRAIN PROTECTION IN PEDIATRIC CARDIAC SURGERY

Anil Bhan†, Saket Agarwal, Rajesh Sharma*, Pravin Sexena†

Institution: Anil Bhan†, Saket Agarwal, Rajesh Sharma*, Pravin Sexena†

OBJECTIVE: Hypothermic cardiopulmonary bypass poses a risk to the viability of brain. The data available on neurological recovery after use of pH-stat modes is quite variable. A randomized control trail of the two modalities was performed to determine the superior strategy in terms of brain protection in pediatric cardiac surgery.

METHODS: The study was a prospective data analysis of consecutive performed reparative cardiac procedures in pediatric age group (less than 14 years) using the alpha-stat modality (n=280) and compared with corrective cardiac procedures in similar patients with the pH-stat modality (n=283). All the clinical variables (CPB time, cross clamp time, lowest temperature reached, perfusion pressures), anaesthetic protocol and perfusion protocol in the two groups were similar. However in the alpha-stat group no CO2 was flushed into the circuit while in the pH-stat group CO2 was flushed into the circuit to maintain normal pH and pCo2 at the desired temperatures. All the patients were operated at moderate or deep hypothermia. None of the patients had circulatory arrest.

RESULTS: There were 7 early deaths (2.5%) (p=0.02) associated with neurological complications in the alpha-stat group. The computer tomographic picture was uniformly same in all these patients. Grey-white matter differentiation was lost, supra-tentorial compartment looked more hypodense compared with posterior fossa and corpus striatum definition was lost. There was no neurological damage of any magnitude in the pH-stat group.

CONCLUSIONS: pH-stat strategy seems to be the superior strategy in terms of brain protection for management of hypothermic (moderate or deep) cardiopulmonary bypass in pediatric cardiac surgery.

TUSEDAY MARCH 29, 2005
CRYSTAL HALL B

RECENT ADVANCES

4:20-6:00 PM

Panel of Experts: Dr Leif B. Nilsson,
Dr Amit Banerjee, Dr Wiley Nifong, Dr AKhtar Hussain.
Coordinator: Dr Shahid Ahmad Sami,
Moderator: Dr Zafar Tufail

Leif B Nilsson (Sweden)
Surgery for Atrial Fibrillation.

Amit Banerjee (India)
Non-Coronary open heart surgery on beating heart.

Murali P Vettath (India)
Vettath's Anastomotic Obturator – our experience of 269 proximal anastomoses.

Vijay Kohli (India)
Effect of ventricular reshaping by septal exclusion in patients with severe left ventricular dysfunction.

Tarmizi Hakim (Indonesia)
Off Pump Or On Pump CABG: The Smart Surgeon;s decision toward the better outcome.

Brig. Azhar Rashid
Benefits of Preoperative IABP in patients with reduced Left Venticular Function

TUSEDAY MARCH 29, 2005
CRYSTAL HALL B

Surgery for Atrial Fibrillation

Leif Nilsson M.D.

Institution: **University Hospital, Uppsala Sweden**

Atrial fibrillation has a significant impact on quality of life, morbidity and mortality. Pharmacological treatment is not always succesful. Lifelong drug treatment is expensive and carries a substantial risk for side effects. A curative non-pharmacological treatment would solve a lot of problems for patient and doctor. A pioneering research work by Dr James Cox resulted in the Maze operation, first performed in 1987. Other techniques have been developed, catheter based and surgical. Different energy sources have been used for ablation instead of the "cut and sew" technique in classical Maze.

The author will present an overview and personal experience of the different methods including a follow-up of 150 Maze operations.

Non-coronary open heart surgery on beating heart

Amit Banerjee

Institution: **Director-Professor of Cardiothoracic Surgery, Govind Ballabh Pant Hospital, New Delhi, INDIA**

It has been observed that left ventricular function is minimally affected during open heart surgery if there is no ischemia or induction of cardioplegic arrest. The last few years have seen a phenomenal increase in the popularity of CABG on a beating heart to avert postoperative myocardial dysfunction following ischemia, hypoxia and reperfusion. Although tremendous advancement has been made in research on myocardial protection during cardiac surgery, the final word is yet to be said on the composition, temperature and delivery technique of an ideal cardioplegic solution. In a prospective study carried out on valve replacement cases performed under cardioplegic arrest, we have found that there is a statistically significant deterioration in left ventricular function within the first few days of surgery, irrespective of the type of cardioplegia used or the cross-clamp duration. It is our contention and experience that open heart surgery with continuous antegrade/retrograde perfusion of an empty beating heart with normothermic blood avoids myocardial ischemia and the detrimental effects of cardioplegic arrest on the myocardium. In quite a few centers, this concept of beating heart surgery has recently been extended to noncoronary open heart procedures. Depending on the type of cases, this is possible with or without cross-clamping the aorta. Such surgery has been performed by us for atrial septal defect repair; open mitral valvotomy or mitral valve replacement (with or without removal of left atrial clot) along with ablation of chronic atrial fibrillation, where indicated; aortic valve replacement; double valve replacement; tricuspid annuloplasty; and removal of right atrial myxoma, totalling over a hundred cases. Our experience and the current world scenario will be presented.

TUSEDAY MARCH 29, 2005
CRYSTAL HALL B

Vettath's Anastamotic Obturator - Our Experience of 269 Proximal Anastomoses

Muralli P Vettath, MCh*, AV Kannan, MD, CS Sheen Peeceeyen, MCh, AK Baburajan, MCh, Abdul Vahab, MD and MP Sujith, MD

Institution: **Department of Cardiac Surgery, Malabar Institute of Medical Sciences, Kozhikode, Kerala, India.**

BACKGROUND: Coronary artery bypass grafting (CABG) has come full circle-it started as an off-pump affair, then became an on pump one and now we are trying to keep off the pump again. One of the main reasons for this has been the neurological sequelae subsequent to CABG. But neurological problems kept causing concern even in off-pump CABGs (OPCAB). Side clamping the aorta was thought to be the major factor and thus came the concept of 'no touch proximal anastomoses' onto the aorta. Though a variety of proximal anastamotic devices are available in the market, high cost is a matter of real concern in third world countries like India. Hence this endeavor of ours to fabricate an anastamotic device of our own-'the Vettath's anastamotic obturator' (VAO) for proximal anastomoses of saphenous vein grafts (SVG) onto the aorta. VAO is a stainless steel rod with three grooves and a guard at the end, which sinks into the aorta, through a punch hole, cordoned off by two wide purse string sutures.

METHODS: After trials on perfused animal heart models, we started using this device on humans. We have performed 269 proximal anastomoses using the VAO in 177 of our OPCAB patients in the past 1 year (till July 2003). Ninety-five of them had single top ends, 72 had 2 top ends and 10 had 3 top ends onto the aorta. We have used this on disease free islands on four patients with palpable aortic plaques. Initially all anastomoses were of the proximal first type (to ensure that the flow was adequate). Now-a-days, with confidence, distal first anastomoses are being performed.

RESULTS: We had no operative mortality in this group. None of our patients needed IABP support. One patient reported back with angina, after 3 months-he was studied and his grafts were found to be patent. All patients, except three, are being followed up till date and they are leading active symptom free and event free lives.

DISCUSSION: It is logical to think that avoidance of side clamp on the aorta reduces the risk of neurologic complications. Vettath's anastamotic obturator is an indigenous, cheap and reusable alternative to the other costlier devices, which serve the same purpose. Though there is a small learning curve, results are gratifying and complications are few.

KEYWORDS: Vettath's anastamotic obturator; Proximal anastomoses; Coronary artery bypass grafting.

Effect of Ventricular Reshaping by Septal Exclusion in patient with Severe Left Ventricular Dysfunction

Vijay Kohli, Mukesh Goel, Harpreet Wasir, Sanjay Mittal, Anil Karlekar, Yatin Mehta, Naresh Trehan

Institution: **Escorts Heart Institute and Research Centre, Okhla Road**

AIMS/OBJECTIVES: Post myocardial infarction anteroseptal dysfunction or akinesia is treated by septal reshaping to improve the surgical outcome in patients with severe left ventricular dysfunction.

METHOD: Between February 2002 to December 2003, 30 consecutive patients with previous anterior wall myocardial infarction and severe ventricular dysfunction underwent septal reshaping. All the dyskinetic and akinetic septal areas were excluded using an oval Dacron patch which was sutured from the healthy septal area to the anterior wall and which resulted in formation of a new apex.

RESULTS: There were two mortalities in the group. After mean follow up of 4.2±1.6 months (1-7 month) it was seen that this procedure resulted in significant reduction of ventricular volume, increase in ejection fraction, an improvement in New York Heart Association (class) from 2.9±1.1 and 1.7±0.3, and a better apical geometry.

CONCLUSIONS: In selected patients with left anterior descending artery occlusion resulting in anteroseptal dyskinesia or akinesia, septal exclusion technique provides good clinical and morphological results with significant improvement in left ventricular function.

TUSEDAY MARCH 29, 2005
CRYSTAL HALL B

OFF PUMP OR ON PUMP CABG: " The Smart Surgeon's decision toward the better outcome "

Tarmizi Hakim, MD, FCCP, FICS

Institution: **National Cardiovascular Center HARAPAN KITA Jakarta, INDONESIA**

SUMMARY: Off pump coronary artery by pass (OPCAB) is being used with increasing frequency in many cardiac centers worldwide (Hart 2000).

The avoidance of cardio pulmonary by pass is believed to result in lower morbidity and mortality rates, particularly in high risk patients. Early proponents of beating heart coronary artery by pass grafting (CABG) limited their target arteries primarily to anterior wall vessels, with some operation on the right coronary artery (RCA) as well (Benetti 1991).

With improvement in technology, the accessibility in grafting of lateral and posterior wall of the heart became feasible (Calafiore 1999). Refinement in surgical technique in the last 2-3 years, allows better patentcy rates, less morbidity and mortality. Yet, there will always be the patients that need on pump surgery for various reasons that will be appears base on individual surgeon experiences such as: Poor LV function, hemodynamic instability and small and diffuse disease target vessels.

BACKGROUND: Since 1996, we at National Cardiovascular Center HARAPAN KITA Jakarta, started to implement OPCAB, although it was mainly LIMA to LAD, whether through limited sternotomy (inferior sternotomy, Benetti 1997), full sternotomy or left antherior small thoracotomy (Calafiore 1998).

Apart from maintaining hemodynamic stability, the surgeon's main problem are stabilization, fixation and visibility of the target vessels. In our first 9 cases, we used a bended kitchen fork as a stabilizer for left internal mammary artery (LIMA) graft to left descending artery (LAD) (Tarmizi 1997).

From June 1997 to May 2000, we started to perform OPCAB in two vessels graft, LAD and RCA (right coronary artery) area, facilitated by sling exposure in between pulmonary vein in 24 cases. From May 2000 to March 2001, we applied the right pleura opening and used a sling technique lateral to inferior vena cava for cardiac displacement in 39 cases. Since March 2001 to December 2004, the author has performed 710 OPCAB procedure, using a commercially available suction based on appex tilting (Apex – Sucker – Guidant). In this period, 80 % of CABG patients have been operated without CPB.

In our setting off pump CABG for suitable cases not only improve results but also reduce the cost significantly which is very important factor in our society.

BENEFITS OF PREOPERATIVE IABP IN PATIENTS WITH REDUCED LEFT VENTICULAR FUNCTION

Azhar Rashid, Abid Hussain, Syed Afzal Ahmad, MBY Bilal, Asif Ali Khan, Muhammad Afsheen Iqbal, Muhammad Waseem

Institution: **Department of Cardiac Surgery, Armed Forces Institute of Cardiology & National Institute of Heart Diseases, Rawalpindi, Pakistan.**

AIM: The purpose of this study is to determine the efficacy of prophylactic insertion of intraaortic balloon pump in patients with severe left ventricular dysfunction during coronary artery bypass graft surgery.

MATERIAL AND METHODS: Between Jan 2003 and Nov 2004, 162 consecutive patients with a left ventricular ejection fraction 30% or less underwent isolated coronary artery bypass grafting. An intraaortic balloon was inserted electively before operation along with the inotropic support in 35 patients (group A). The remaining 127 patients underwent surgery without preoperative insertion of the device (group B).

RESULTS: The median postoperative hospital stay was 11.9 days and 15.4 days for group A and group B, respectively. The hospital mortality was 5.71% and 13.38% for the groups. In group B, 20 patients (15.74%) required an intraaortic balloon pump after cardiotomy for low cardiac output, 10 (50%) of whom died. Majority of deaths occurred in functional class (NYHA III & IV) and in unstable patients (CCS III & IV).

CONCLUSION: Our experience suggests that patients with severe left ventricular dysfunction undergoing coronary artery bypass grafting may benefit from preoperative IABP insertion, especially in patients in functional class III & IV, and CCS class III & IV. This approach improved survival significantly and reduced hospital stay sufficiently.

TUSEDAY MARCH 29, 2005
CRYSTAL HALL B

5TH BIENNIAL INTERNATIONAL CONFERENCE

OF THE PAKISTAN SOCIETY OF CARDIOVASCULAR AND THORACIC SURGEONS

29TH MARCH 2005

EMERALD HALL C

PEARL CONTINENTAL HOTEL, LAHORE. PAKISTAN

TUSEDAY MARCH 29, 2005
EMERALD HALL C

CORONARY ARTERY SURGERY

9:00 AM-10:40 AM

Panel of experts: Antonio Maria Calafiore, Dr OP Yadav, Dr Harinder Singh Bedi, Prof Muhammad Rehman, Prof Jawad Sajid Khan.
Coordinator: Dr Shahid Sami **Moderator:** Dr Riaz Anwar Khan

Murali P Vettath (India)
Off-pump reconstruction of diffusely diseased LAD without endarterectomy, easy reproducible-again how to do it?

Khalid Hameed (Pakistan)
Off-pump coronary artery bypass grafting decreases risk-adjusted mortality and morbidity.

Harinder Singh Bedi (India)
Optimising Intra Aortic Balloon Timing By Pulse Oximeter Tracing

Virender Sarwal (India)
Surgical revascularization in acute myocardial infarction

Saulat Fatimi (Pakistan)
Morbidity and Mortality in CABG After Early Acute Myocardial Infarction — Risk Factor Analysis

Harinder S Bedi (India)
Aggressive pre-operative use of intra-aortic balloon pump in high risk cases

Bakhtawar Humayun (Pakistan)
The use of Intra Aortic Balloon Pump in patients undergoing Coronary Artery Bypass grafting in a tertiary care hospital.

Hunaid A Vohra (UK)
Elective Insertion of Intra-Aortic Balloon Pump in High-Risk Off-Pump Coronary Artery Bypass Grafting Reduces the Risk of Acute Renal Failure

Deepak Puri (India)
Surgical treatment for ischemic left ventricular failure

Tariq Azam Siddique (Pakistan)
Tranexamic acid occludes coronary artery grafts

S Bazaaz (India)
Beating heart reflections on morbidity and mortality.

Off-Pump reconstruction of diffusely diseased LAD without endarterectomy, easy reproducible-again how to do it?

Murali P Vettath

Institution: Department of Cardiac Surgery Malabar Institute of Medical Sciences Govindapuram, Calicut, Kerala INDIA

INTRODUCTION: Today the cardiac world, especially in south East Asia is confronted with increasing numbers of patients with a different pattern of coronary disease- diffuse cad. coronary revascularisation in the conventional ways will not restore optimal blood flow in diffuse cad and many patients end up with less than optimal revasularisation, if not tackled properly. This leaves coronary artery reconstruction (CAR) as the only option left for optimal revascularisation in diffuse cad. We are presenting our rich experience with off pump mammary patch angioplasties without endarterectomy

PATIENTS: 864 OPCAB procedures were performed in the past 4 years. 172 of them had diffusely diseased LADs and underwent patch angioplasty without endarterectomy. The mean age of this group being 44 years. 47 of them were branded inoperable in other centers. LAD diameters varied from 1 to 1.5 mm. Mean arteriotomy length was 3.3 cm. All these patients had LIMA to LAD as their principal grafts. 83% of patients had normal LV function. 97% were males, 73% were diabetics, 61% smokers and only 4% were obese.

METHODS: Left Internal Mammary Artery is harvested as a pedicle, sometimes extending beyond the bifurcation, in order to gain extra length. The Octopus or Guidant stabilizer systems are used. At times, when the arteriotomy was very long, two stabilizers were used to stabilize the whole length. Intracoronary or Aortocoronary shunts were used for maintain coronary perfusion. LIMA is spit longitudinally and anastamosed using 7-0 Prolene sutures. Plaques are not removed, but are instead plastered onto the wall by the above suture.

RESULTS: We had no operative mortality in this group. One patient needed IABP support. Mean stay in the ICU/ Hospital was comparable with other patients. Postoperative Echo revealed improved LV functions in 97% of the patients. All patients were followed up at 1 week, 3 weeks, 3 months, 6 months, 1 year from the day of discharge and half yearly thereafter. We have had 14-drop outs. All others are leading event free active lives.

CONCLUSION: Mammary patch angioplasty without endarterectomy is an excellent option providing gratifying results in these patients who were branded inoperable otherwise. Preservation of the intimal layer aids in the long-term patency of these grafts.

Off-pump coronary artery bypass grafting decreases risk-adjusted mortality and morbidity

Khalid Hameed, Fayyaz Haider Hashmi, Sarah Saleem

Institution: Doctors Hospital & Medical Center, Lahore, Pakistan

AIMS: The purpose of this study was to determine whether coronary artery bypass grafting without cardiopulmonary bypass (off-pump CABG) decreases risk-adjusted operative death and major complications after coronary artery bypass grafting in selected patients.

METHODS: Procedural outcomes were compared for conventional and off-pump CABG procedures from January 1, 2000, through December 31, 2004. Mortality and major complications were examined, both as unadjusted rates and after adjusting for known base line patient risk factors.

RESULTS: 3543 total CABG procedures were performed. The number of off-pump CABG cases was 2262 cases (63.84% of total cases). The use of an off-pump procedure was associated with a decrease in risk-adjusted operative mortality from 2.3% with conventional CABG to 0.5% in the off-pump group. The use of an off-pump procedure decreased the risk-adjusted major complication rate from 5.60% with conventional CABG to 2.2% in the off-pump group. Patients receiving off-pump procedure had lesser hospital stay (4.4 days) as compared to conventional CABG (5.6 days).The use of an off-pump procedure had minimal blood requirement (0.5%) vs 1.50%.

CONCLUSIONS: Off-pump CABG is associated with decreased mortality and morbidity after coronary artery bypass grafting. Off-pump CABG may prove superior to conventional CABG in appropriately selected patients.

OPTIMISING INTRA AORTIC BALLOON TIMING BY PULSE OXIMETER TRACING

Harinder Singh Bedi, Raman Pal Singh, Bhupender Sengar

Institution: **Sigma New Life Heart Institute, Ludhiana, Punjab, India**

OBJECTIVES: IAB counterpulsation is the most widely used cardiac assist device. Exact timing of inflation and deflation are mandatory for proper functioning. In fact improper timing can cause a deterioration in hemodynamics. Optimal timing requires an initial manual adjustment which requires a crisp arterial trace which may not always be available (damped radial artery line, long narrow arterial lumen of IAB getting blocked, contralateral femoral artery trace being damped as it is downstream to the IAB etc) . We describe a method of optimizing timing using the pulse oximeter trace in such cases.

METHOD: The probe of the pulse oximeter is attached to one of the fingers of the hand. This gives a sharp trace. The exact timing of inflation is adjusted at the dicrotic notch of the pulse oximeter trace . Similarly the exact point of deflation is optimized using the sharp visual display.

RESULTS: Good hemodynamics were achieved in 50 cases using this technique. In cases where the direct arterial trace was not damped a good temporal relationship was noted between the direct arterial and the pulse oximeter trace.

CONCLUSIONS: We recommend our simple technique for optimizing IAB timing when the direct arterial trace is damped.

TUSEDAY MARCH 29, 2005
EMERALD HALL C

Surgical Revascularisation in Acute Myocardial Infarction

Virender Sarwal, Deepak Puri, Manoranjan Sahoo, Achintya Moulick

Institution: **Fortis Heart Institute, Mohali (Punjab), India**

BACKGROUND: Early revascularisation after myocardial infarction salvages myocardium at risk and prevents mortality due to arrhythmias. We analyzed Troponin I levels as predictor of operative risk in these patients.

METHODS: Between January 2001 to November 2004, 198 patients with acute MI had CABG, according to time lapsed after MI, were divided into Group A (34) operated within 8 hours included evolving MI, failed PTCA. Group B (29) between 8 to 48 hours had hemodynamic instability, uncontrolled arrhythmias and recurrent rise in Troponin-I levels (15 to 50) inspite of optimum medical management and IABP. Group C (135) had CABG after 48 hours (mean 7.4 days) stable with declining Troponin-I levels (<5).

RESULTS: Ventricular arrhythmias, prolonged ventilation were highest in Group B. Postoperative mortality was 7 (Group-B 5, Group-A 1, Group-C 1). Patients with Troponin-I levels <5 at intervention, had no mortality. There was 1 mortality in those with Troponin I -5 to 15 and 5 with Troponin-I >15.

CONCLUSION: Morbidity and mortality is maximum when CABG is performed within 8-48 hours of acute MI and when Troponin-I levels are >15. Patients with Troponin-I levels <5 at time of surgical revascularization have best outcome.

Morbidity and Mortality in CABG After Early Acute Myocardial Infarction — Risk Factor Analysis

Saulat H. Fatimi, M.D., Ahsan Siddiqui, Asad Latif

Institution: The Aga Khan University Hospital

BACKGROUND/AIMS: Emergency CABG for acute myocardial infarction is associated with increased mortality as compared to <2% mortality in an elective CABG operations. In this paper, we have looked at our experience of emergency CABG at a tertiary care center and evaluated the factors influencing early post-operative morbidity and mortality.

METHODS: 214 patients had CABG within two weeks of acute myocardial infarction at the Aga Khan University Hospital from Jan 1999 to December 2003. Patients with cardiogenic shock and those requiring mitral valve repair or replacement or VSD closure were excluded. The patients were divided into three groups—those requiring CABG within 48 hours, those requiring CABG within one week and those requiring CABG between 7 and 14 days. Total length of stay, ICU stay, IABP use, co-morbidities such as diabetes, hypertension, smoking, dyslipidemia, previous MI history, previous angioplasty, CBP time, cross-clamp time, and number of bypass grafts used were evaluated.

RESULTS: Total mortality of patients operated within two weeks of myocardial infarction was 12.1% (26 of 214 patients). 19 patients who expired were operated within 48 hours as compared to only two patients who were operated after one week. Anteroseptal MI, EF < 30%, age > 60 and CABG within 48 hours of MI were found to be statistically significant predictors of mortality for CABG after an MI ($p < 0.05$). Diabetes, hypertension, dyslipidemia, smoking, prior angioplasty, no. of grafts used, cross-clamp time and IABP use, were not found to be statistically significant.

CONCLUSION: Emergency CABG for acute MI is associated with increased mortality and the factors which contribute towards it are pre-operative EF < 30%, anteroseptal MI, age < 60 and CABG within 48 hours of MI. Waiting a week in patients with acute MI may help reduce the mortality in such patients.

Aggressive Pre-Operative use of Intra-Aortic Balloon Pump in high risk cases

HarinderSingh Bedi, Raman Pal Singh, Bhupender Sengar

Institution: Sigma New Life Heart Institute, Ludhiana, Punjab, India

OBJECTIVES: Intra-aortic balloon pump (IABP) use in patients undergoing CABG is often associated with a high complication rate (due to unplanned, hurried and technically difficult insertion in a very sick patient) and adverse outcome (due to delay in institution of IABP, use/overuse of CPB, use of heavy inotropes in an attempt to avoid IABP and device related complications).

METHOD: We have used the IABP electively preoperatively in 212 high risk patients (poor LV function – LVEF < 0.25, PA pressure > 2/3 systemic, cardiac index < 2l/min/sq m, unstable angina, cardiogenic shock, MR) . Wherever possible the insertions were in the cath lab under flouro control by the percutaneous sheathless technique. Patients underwent CABG 0 to 24 hours after IABP institution. Where CPB was used the IABP was put on internal mode during aortic cross clamping to give a pulsatile flow.

RESULTS: In the majority of patients (88%) an off pump CABG could be carried out. The number of grafts were 2.6+/-1.6. In the CPB group 85% patients could be weaned off CPB with no or mild inotropic support. The IABP was weaned off over 30+/-6.7 hrs after shifting to the ICU. 2 patients in the CPB group and 1 in the off pump group died from multiorgan failure, sepsis and GVH.

CONCLUSIONS: Aggressive use of IABP preoperatively in selected high risk patients improves survival, reduces hospital stay, makes off pump CABG possible even in patients with distended hearts and MR, and is cost effective. Our motto is 'IF A PUMP HAS TO BE USED IT SHOULD BE IABP AND NOT CPB' . Complication rate can be reduced by use of small diameter catheters, improving the technique of insertion, insertion under flouro control and more rigorous surveillance.

The Use of Intra Aortic Balloon In Patients Undergoing Coronary Artery Bypass Grafting In A Tertiary care Hospital:

Bakhtawar Humayun, Mohiudin Kamran, Shafique Ahmed, Sharif Hasnat

Institution: **Aga Khan University Hospital**

INTRODUCTION: Since its first clinical use in 1968, the intra aortic balloon pump (IABP),with improvements and advancements, has been routinely used as a treatment modality in a wide range of situations ranging from hemodynamic instability, in patients suffering from complications of acute MI or cardiogenic shock to very high risk patients undergoing angioplasty or CABG.

OBJECTIVE: The aim of this study was to review and assess the usage of Intra Aortic Balloon Pump (IABP) in patients undergoing Coronary Artery Bypass Grafting (CABG) at our hospital and then compare the results with the international literature.

DESIGN: Retrospective study. Medical records of all patients undergoing CABG between November 1994 and August 2002 were reviewed and patients in whom IABP was used peri-operatively, were included in this study.

SETTING: The Aga Khan University Hospital, Karachi.

RESULTS: A total of 135 patients underwent CABG with peri-operative support of IABP during the study period. The patient population studied consisted of 109 (80.74%) males and 26 (19.26%) females with mean ages of 58.3 years and 60.7 years respectively, and an overall mean age of 58.76 years. About 71 % of the patients had moderate to severe LV dysfunction. 93 (68.9%), 32 (23.7%) and 10 (7.4%) patients had IABP inserted pre-operatively, intra-operatively and post-operatively respectively. The most frequent reason for the insertion in these groups was low EF, difficulty to wean off from the pump and hemodynamic instability respectively. 113 (83.7%) of the patients had surgery on an urgent or an emergent basis whereas the remaining had on an elective basis. The cardiac index increased from the mean pre-IABP value of 1.97 to post- IABP value of 2.77, showing an increase of about 40%. The median duration of dependence on IABP was 2 days. There were a total of 35 (25.9%) mortalities with the lowest mortality rate in the group with IABP inserted preoperatively. The morbidity directly related to the IABP use was nearly 6%.

CONCLUSION: This data represents the experience of the use of IABP in patients undergoing CABG at the Aga Khan University Hospital. The overall morbidity and mortality rates of our study sample are comparable with the international literature and within acceptable limits for the high-risk patients included.

Elective Insertion of Intra-Aortic Balloon Pump in High-Risk Off-Pump Coronary Artery Bypass Grafting Reduces the Risk of Acute Renal Failure.

Hunaid A Vohra, Wade R Dimitri

Institution: **Department of Cardiothoracic Surgery, University Hospitals Coventry & Warwickshire NHS Trust, Walsgrave Hospital, Coventry, United Kingdom.**

INTRODUCTION: The beneficial effects of intra-aortic balloon pump (IABP) in CABG with cardiopulmonary bypass have been extensively documented. However, the role of elective IABP in high-risk off-pump coronary artery bypass grafting (OPCAB) remains to be established.

METHODS: The study group comprised 625 patients who underwent OPCAB. High-risk patients (two or more of the following: left main stem stenosis >70%, unstable angina and poor left ventricular function) who had an elective pre-operative IABP inserted (Group I) by the open technique (n=20) were compared with similar high-risk patients (Group II) who did not (n=25).

RESULTS: There were no significant differences in the risk factors between the two groups (euroscore 5.68). Mean number of grafts were similar. Post-operatively, there were no significant differences in the need for inotropes, duration of ventilation, arrythmias, cerebrovascular, gastro-intestinal and infective complications (p=NS). There were no IABP-related complications. Acute renal failure requiring haemofiltration was higher in Group II ($p<0.05$). Four patients (16%) in Group II required post-operative IABP. Although intensive care stay was longer in Group I than in Group II (27.6±15.3 vs 18.6±9.1 hours; $p<0.05$), patients in Group I were discharged earlier. The overall mortality was 1.8%. There was one death in each group.

CONCLUSIONS: In high-risk patients undergoing OPCAB, routine pre-operative insertion of IABP leads to a lesser incidence of acute renal failure. Elective insertion of IABP by the open technique in this group of patients results in minimal complications, avoids emergency insertion post-operatively and may result in earlier discharge. However, randomised controlled trials are needed to further evaluate these findings.

KEY WORDS: intra-aortic balloon pump, off-pump coronary artery bypass grafting, high-risk, renal failure. Word Count: 255

Surgical treatment for Ischemic Left Ventricular Failure

Deepak Puri, Virendar Sarwal, Gilbert Joseph, Manoranjan Sahoo, A Moulick

Institution: **Fortis Heart Institute, Mohali (Punjab), India**

INTRODUCTION: Coronary artery disease is leading cause of left ventricular failure. We present our strategies on surgical management of such patients.

PATIENTS AND METHODS: Between July 2001 to November 2004, 234 patients with left ventricular ejection fraction (LVEF) less than 40% ± mitral regurgitation and NYHA class II to IV were included. Classified according to LVEF, they were EF 20-25% (n = 8), 25-30% (42), 30-35% (75), 35-40% (99). Left main disease was in 22, TVD (160), DVD (42) and SVD (10). Rest thallium scan was done to assess viability in akinetic myocardium. Revascularisation was done on pump (120), off pump (114) and mean no. of grafts was 3.6 ± 1.4 (Range 1 to 5). Ventricular restoration was done in 13 while mitral valve was repaired in 4 and replaced in 1.

RESULTS: Post-operative ventilation time, ICU and hospital stay were longer in on pump cases. There were 7 mortalities (On pump 4, Off pump 3), cause of death was intractable arrhythmias (2), renal failure (2), multi-organ failure (2) and septicemia (1). More than 90% are asymptomatic and all improved to class I or II.

CONCLUSION: Appropriate surgical treatment benefits patients with ischemic left ventricular failure, morbidity and mortality is acceptable. However long term survival benefit is under evaluation.

TUSEDAY MARCH 29, 2005
EMERALD HALL C

TRANEXAMIC ACID OCCLUDES CORONARY ARTERY GRAFTS.

Tariq A Siddiqi; Suhail Siddique; Muhammad Zahidullah; Nadeem Ahmad; ArifurRehman Khan.

Institution: **Department of Cardiac Surgery, National Institute Of Cardiovascular Diseases, Karachi.**

INTRODUCTION: Diffuse microvascular bleeding is a common problem after CABG operations. Various antifibrinolytic agents including Tranexamic Acid have been used to combat this problem.

AIMS: This was a retrospective study in patients who underwent emergency reopening for postoperative bleeding between Jan-Dec 2002, and were found to have occluded coronary grafts. The one common factor in these patients was that most had received postoperative Tranexamic Acid to control haemostasis. To further ascertain whether this was an incidental finding or had any significance, no Tranexamic Acid was used for haemostasis between Jan-Dec 2003.

MATERIAL AND METHODS: From Jan-Dec 2002, 582 patients underwent CABG procedures. There were 52 (8.9%) emergency reopenings. All CABG patients, independent of the operating surgeon, were included in this study. Patients undergoing redo CABG surgery were excluded. During re-operation, after the emergency had been dealt with, graft patency was checked and occluded grafts identified. Between Jan-Dec 2003, 565 CABG operations were carried out. No Tranexamic acid was used for the control of postoperative bleeding. Data for the years 2002 and 2003 was collected and compared.

RESULTS: Between Jan-Dec 2002, 8/582 (1.3%) patients had occluded grafts. 5 patients had 1 occluded graft, 2 patients had 2 occluded grafts and 1 patient had three occluded grafts. 6/8 (75%) patients with occluded grafts were given Tranexamic acid postoperatively to achieve haemostasis. Between Jan-Dec 2003, in 46 reopenings, when no Tranexamic Acid was used, only 3/565 (0.53%) patients with occluded grafts were identified. All these patients had single graft occlusions.

CONCLUSION: Intravenous use of antifibrinolytic agents have been associated with graft occlusions in post CABG patients. This data suggests that the intravenous use of Tranexamic Acid might also be liable to cause graft occlusions. However, this needs additional assessment and randomized prospective trials are necessary for further evaluation.

CORONARY ARTERY SURGERY

11:00 AM-1:30 PM

Panel of experts: Prof. Dimitri Novitzky, Dr Valavanur Subramanian, Dr Vijay Kohli, Prof Parvez Mannan
Coordinator: Dr Arif Rheman,
Moderator: Dr Tariq Azam Siddique

Dimitri Novitzky (USA)
The scientific rationale for hormonal therapy of the brain-dead organ donor and the organ recipient

Deepak Puri (India)
Off Pump Surgical Myocardial Revascularization in Elderly with Co-Morbidities.

Afsheen Iqbal (Pakistan)
Coronary endarterectomy: a safe and effective procedure.

Hunaid A Vohra (UK)
Outcome of Coronary Endarterectomy and Bypass Grafting without Cardiopulmonary Bypass

Zahid Mahmood (UK)
Decreased morbidity following long saphenous vein harvesting using a minimally invasive mayo vein stripper harvesting technique: A randomized controlled trial comparing two techniques for long saphenous vein harvest.

Harinder S Bedi (India)
Morphometric and histologic analysis of the radial artery and its comparison with the IMA.

Hossameldin Eid (UAE)
Management of Mediastintis Following Open Heart Surgery: Dubai hospital Experience

Shahid Sami (Pakistan)
Coronary artery bypass graft surgery in elderly patients.

R Juneja (India)
Prophylactic Amiodarone in High Risk CABG Patients

Vijay Kohli (India)
Survival and quality of life with mitral valve repair in ischemic cardiomyopathy

Ahmad Alzaini (Egypt)
Ocular complications following open heart surgery

Renato Pacis (Philippine)
Off Pump CABG

Rajneesh Malhotra (India)
Concomitant Carotid endarterectomy and CABG: Outcome of On-pump and Off-pump techniques.

The Scientific Rationale for hormonal therapy of the Brain-Dead Organ Donor and the Organ Recipient

Dimitri Novitzky, MD.

Institution: **University of South Florida. USA**

INTRODUCTION: It is now generally accepted that the impact of brain death can have a detrimental effect on subsequent donor heart function following transplantation into a recipient, and may result in the patient's death. The administration of hormonal therapy, by 'salvaging' organs that would otherwise be unacceptable, has brought about an exponential increase in the number of organs available for transplantation.

PATHOPHYSIOLOGICAL EFFECTS OF BRAIN DEATH: Two experimental models of brain death were developed in the baboon and the pig. The animals' cardiovascular status was fully monitored for 24 hours. In the baboon, a Foley catheter was placed into the subdural space though a burr hole, and the bulb inflated with saline. In the pig, following sternotomy, both brachiocephalic arteries were ligated .

In both models, during and following the agonal period there was a short-lived, but devastating, catecholamine 'storm', which was the result of endogenous catecholamine release from the post-ganglionic sympathetic nerve endings. The hemodynamic response was a significant elevation of the systemic vascular resistance, resulting in systemic hypertension, acute left ventricular failure, fall in cardiac output, and rise in left atrial pressure.

Histological examination of the organs used for transplantation showed the adverse effect of endogenous catecholamine release. In the heart, the myocardium suffered various modalities of cell necrosis, and infiltration of mononuclear cells around necrotic cells. The coronary arteries showed smooth muscle contraction bands and calcium deposits, and injury was also observed in the conducting system. In some animals, pulmonary edema and hemorrhage were observed (8, 9). Electron microscopy showed diffuse mitochondrial injury in the heart (Figure 4), and also in the liver and kidneys.

ENDOCRINE CHANGES AFTER BRAIN DEATH: As the catecholamine levels normalized, new endocrine changes developed, some related to pituitary gland failure, such as lack of antidiuretic hormone production, low plasma ACTH, cortisol, and insulin levels, while glucagon and the thyroid stimulating hormone remained normal. The most dramatic endocrine change was found in the plasma thyroid profile; there was a rapid reduction in plasma free

triiodothyronine (T3) and levothyroxine (T4), which in the baboon became undetectable within a few hours. This thyroid profile is characteristic of the "euthyroid sick syndrome" observed in critically ill patients.

From these studies, the concept of hormonal therapy to the brain-dead potential donor evolved. Extensive trials were conducted in brain-dead animals in which replacement therapy was given in the form of T3, cortisol and insulin .

HORMONAL THERAPY TO THE BRAIN-DEAD SUBJECT: The initial metabolic and hemodynamic studies were carried out in a modified Langendorf model, in which the preload and afterload remained constant, with blood oxygenation being provided by a support pig. Hearts were procured from healthy anesthetized animals (Group A), from brain-dead animals (supported on a ventilator) that received fluids and dopamine for four hours (Group B), and from brain-dead animals treated similarly but to which hormonal therapy (T3 2mcg/h, cortisol 100 mg/h, and insulin 10 IU/h) was added for a further two hours (Group C). Following cardiac explantation, the hearts were reperfused and, after one hour of *ex vivo* support, were hemodynamically tested. Myocardial biopsies were taken for measurement of high energy phosphates, glycogen, and tissue lactate. Brain death had significant negative hemodynamic and metabolic impacts on the hearts of Group B whereas hormonal therapy normalized the hemodynamic and biochemical abnormalities in Group C.

Importantly, the endocrine changes that develop after brain death affect all major organs, and we provided evidence that hormonal therapy proved beneficial to the kidney as well as to the heart. This series of experiments confirmed the impact of brain death on the animal as a whole, affecting preferentially the aerobic pathways, with progressive depletion of the high-energy phosphates essential for the adequate function of multiple cellular ATPases responsible for cellular homeostasis, leading to progressive organ deterioration.

ENDOCRINE CHANGES FOLLOWING CARDIOPULMONARY BYPASS: Further research subjecting healthy pigs and baboons to cardioplegic arrest on cardiopulmonary bypass confirmed that, following cardiac reperfusion, control animals were unable to be weaned from cardiopulmonary bypass and demonstrated significant myocardial depletion of high-energy phosphates with accumulation of lactate. The administration of T3 at the time of cardiac reperfusion normalized high-energy phosphates and prevented tissue lactate accumulation. This was associated with recovery of cardiac contractility, allowing weaning of all animals from bypass.

FIRST CLINICAL TRIALS: These series of experiments conclusively confirmed the beneficial effect of hormonal therapy in the experimental animal, which led us to embark on a small clinical trial in brain-dead potential organ donors. A control group of brain-dead donors became refractory to inotropic support, and required increasing bicarbonate to correct acidosis; a significant number of hearts were considered unsuitable for transplantation. Those potential donors treated with T3, cortisol and insulin showed significant and rapid hemodynamic improvement, allowing reduction of inotropic support, reduced need for bicarbonate, and normalization of elevated lactic acid. Furthermore, all hearts from hormonally-treated donors were used successfully for transplantation, with good immediate function in the recipients.

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A final step was to demonstrate the similarity between the endocrine characteristics shown by brain-dead organ donors and those of patients following cardiopulmonary bypass; both exhibit the "euthyroid sick syndrome". T4 is rapidly converted into reverse T3, which is an inactive metabolite; plasma free T3 recovery requires several days. Therefore, T3 was administered to the organ donor before excision of the heart *and* to the transplant recipient at the time of removal of the aortic cross-clamp and reperfusion of the heart. Using this therapeutic approach, we were able to transplant hearts declined by other transplant programs, and yet observe excellent graft function in the recipients.

Thus, T3 therapy to the donor *and* to the recipient became our standard practice, an approach that has not yet been widely followed. This therapeutic modality may become the future standard of care, not only with regard to the transplantation of hearts, but also of other major organs.

OFF PUMP SURGICAL MYOCARDIAL REVASCULARIZATION IN ELDERLY WITH CO-MORBIDITIES

Deepak Puri, Manoranjan Sahoo, Achintya Moulick.

Institution: **Fortis Heart Institute, Mohali (Punjab), India**

OBJECTIVE: Co-morbidities like diabetes, hypertension, nephropathy and pulmonary diseases are common in elderly patients. We adopted virtues of OPCAB to improve outcome in them.

METHODS: Between July 2001 to September 2004, 727 patients who had CABG were in age group 60-80 years (Group A), and 37 between 80 to 90 years (Group B). In Group A, 314 (43%) were diabetic, 13 (2%) had renal failure, 608 (84%) had hypertension and 106 (15%) had pulmonary co-morbidities. In Group B, only 3 (8%) were diabetic, all 37 (100%) were hypertensive while 8 (22%) had pulmonary problems. Off pump procedure was done in 624 patients-Group A, and all 37 patients-Group B. Internal thoracic artery was anastomosed to LAD in all and sequential grafts were preferred. Two-year cardiac event free survival is 98% (Group A) vs 95% (Group B).

RESULTS: In Group B, postoperative ventilation time was longer (11.6±2.6 hours vs. 7.2±2.3 hours), ICU stay was longer (3.5 days vs. 2.3 days), cardiac failure more frequent (6% vs. 2%) but one patient had stroke and mortality was 6 in Group A.

CONCLUSION: Off pump revascularization helps in reducing operative morbidity and mortality in elderly patients with co-morbidities.

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Coronary Endarterectomy: A safe and effective procedure

Muhammed Afsheen Iqbal, Ali Gohar Zamir, Azhar Rasheed, Syed Afzal Ahmad

Institution: **Armed Forces Institute of Cardiology/ National Institute of Heart Diseases, The Mall, Rawalpindi.**

AIMS: to find out complication rate and results of coronary endarterectomy in our patient population.

METHOD: total of 2655 patients under went coronary artery bypass grafting surgery (CABG) in our institute from January 2001 to November 2004 out of which we performed 55 (2.07%) coronary endarterectomies. There were only 2 females and 32 (58.18%) patients were diabetic. 37 patients had endarterectomy of the LAD, 14 of RCA and PDA and only 04 patients had endarterectomy of the OM's. The techniques of endarterectomy and the conduits used will be discussed during presentation.

RESULTS: The mortality rate was 3.63% (2 patients out of 55). 23 (43%) patients had poor left ventricular function (EF <30%) whereas 8 patients (14.54%) had moderate left ventricular function. The incidence of early post operative myocardial infarction (diagnosed by raised creatine kinase MB fraction and development of Q waves or requirement of inotropes / IABP, post operatively in the presence of adequate surgical revascularization) was 7.272% (4 cases), three of these cases had endarterectomy performed on left anterior descending (LAD) system and one had it on right coronary artery (RCA). The average hospital stay was 7.4 days, 2 days longer than the average for CABG, 32 (58.18%) patients needed inotropic support and only 7 patients (12.72%) required intra aortic balloon counter pulsation. Anti coagulation protocol remained intravenous heparin infusion 3 hours after shifting the patient to ICU from operation theatre and then oral warfarin 2.5 – 5 mg along with Disprin 100mg for 6 months at least.

CONCLUSIONS: We conclude that coronary end arterectomy is a safe procedure provided it is performed adequately and with utmost care. The complication and mortality rates are acceptable

Outcome Of Coronary Endarterectomy And Bypass Grafting Without Cardiopulmonary Bypass

Hunaid A Vohra[1], Raj Kanwar[1], Tanveer Khan[1], Wade R Dimitri[1]

Institution: [1]Department of Cardiothoracic Surgery University Hospitals Coventry And Warwickshire NHS Trust Walsgrave Hospital, Coventry, United Kingdom

OBJECTIVES: The aim of this study was to review the results of off-pump coronary endarterectomy and bypass grafting in patients undergoing surgical revascularisation at our institution.

METHODS: Between January 1995 and May 2004, out of 680 OPCAB patients, 70 patients(10.29%) who underwent coronary endarterectomy as well were studied retrospectively.

RESULTS: The mean age was 63.6±9.29 years. Thirty three patients (55%) were CCS class III/IV and twenty four (40%) patients were NYHA class III/IV. Eighteen patients (35%) had impaired LV function. Fifty seven patients (81%) underwent RCA endarterectomy (3 radial, 1 SSV, 47 LSV) and 12 patients (17%) underwent LAD endarterectomy (7 LIMA, 4 LSV). Four patients (5.7%) had two vessels endarterectomised while the rest had single vessel endarterectomy. The mean number of grafts were 2.01±0.44. The 30-day mortality was 2.85% (n=2). Only three patients required post-operative IABP insertion. The mean duration spent in ITU was 17.6±8.1 hours. Patients were extubated after a mean of 10.38±4.9. The mean length of hospital stay was 6.1±2.0 days. Fourteen patients (20%) had post-operative atrial fibrillation and only one patient (1.42%) suffered from a transient stroke with complete recovery. There were no conversions to cardio-pulmonary bypass. A mean of 0.86±0.17 units of blood were transfused post-operatively. There was one reopening for bleeding and one patient went into renal failure requiring hemofiltration. The mean follow-up was 58.5±30.0 months and the overall survival was 76%.

CONCLUSIONS: Off-pump coronary endarterectomy and bypass grafting is feasible to achieve complete revascularisation in patients undergoing OPCAB.

Decreased morbidity following long saphenous vein harvesting using the a minimally invasive Mayo vein STRIPPER harvestinG technique: a randomised controlled trial comparing two techniques for long saphenous vein harvest

Zahid Mahmood, Sammy Al-Benna, Udim Nkere, Andrew Murday.

Institution: Department of Cardiothoracic Surgery, Glasgow Royal Infirmary, 16 Alexandra Parade, Glasgow G31 2ER, United Kingdom.

OBJECTIVES: The objective of this study was to compare the morbidity associated with long saphenous vein harvesting using the traditional open technique (A) against a minimally invasive technique using the Mayo vein stripper (B) that involves multiple short incisions. We also assessed the effect of the two harvest techniques on smooth muscle contractility of the vein.

METHODS: We conducted a prospective randomized controlled study in 80 patients undergoing isolated first time coronary artery bypass graft operations. After informed consent patients were randomized by minimization to technique A or B. Pain was assessed by visual analogue scores on each postoperative day whilst in hospital. Healing was assessed using the ASEPSIS score for the first five postoperative days. Rings of long saphenous vein from a sample of subjects were subjected to organ-bath evaluation of endothelium-dependent and endothelium-independent relaxation.

RESULTS: One patient was unavoidably excluded from the study before vein harvest commenced. Of the remaining seventy nine79 patients there were no differences between the 2 groups in patient's demography or pre-existing co-morbidity. Two patients, who died within the first forty eight48 hours after surgery, were excluded from further analysis, leaving thirty eigh38 patients in Group A and thirty nine39 in Group B. With respect to operative procedure, Group A had a greater length of vein harvested than Group B. The median time taken was 26 minutes for Group A and 15 minutes for Group B (p=0.002). There was no statistical difference in pain scores between the two groups. However there were significantly more infections in Group A (8/38) compared with Group B (2/39) (p<0. 001). There were no differences between the two techniques with respect to either endothelium-dependent or endothelium-independent relaxation.

CONCLUSIONS: This study supports the notion that harvesting vein through multiple incisions using the Mayo vein stripper is quicker, results in fewer infections and has no deleterious effect on endothelial function compared to the more commonly used open technique.

KEY WORDS: minimally invasive; coronary artery bypass grafting; wound infection.

Morphometric and Histologic Analysis of the Radial Artery and its comparison with the IMA

HarinderSingh Bedi, Raman Pal Singh, Bhupender Sengar

Institution: Sigma New Life Heart Institute, Ludhiana, Punjab, India

OBJECTIVES: Excellent long term patency of the IMA has stimulated search for other comparable conduits. The radial artery (RA) is very frequently being used as a conduit of choice after the IMA. However there are no detailed studies justifying the assumption that the RA matches the IMA.

METHOD: Detailed morphometric measurements and histologic analysis were performed on the distal segments of the IMA and RA in 25 patients undergoing CABG. The perimeter of the media , luminal circumference, cross sectional area of the lumen and of the media, external radius, internal radius, intimal thickness and intimal thickness index (ITI) were measured and calculated in both vessels.

RESULTS: There were significant differences in morphometric measurements indicating an increased propensity to atherosclerosis in the RA.

	IMA mean	IMA SD	RA mean	RA SD
Luminal circ	3.26	0.82	3.89	1.01
Area media	0.96	0.26	2.07	0.42
Area intima	0.086	0.003	0.22	0.06
ITI	0.09	0.002	0.11	0.07
Media index	0.46	0.10	0.64	0.16

CONCLUSIONS: In view of our findings some caution is warranted in the use of the RA in CABG till long term results are in.

Management of Mediastintis following Open Heart Surgery: Dubai Hospital Experience

Hossameldin Eid, Mirza Al sayegh, Mohamed Abdelaziz, Najib Al Khaja

Institution: Cardiology and cardio-thoracic surgery center, Dubai Hospital, Dubai, UAE

Out of Series 1682 patient required median Sternotomy for open heart surgery, 67 patients (3.98%) developed deep Sternal wound infection and dehiscence. Most of these infections were associated with a number of risk factors: diabetes mellitus, preoperative hospital stay, obesity, malnutrition, and increased time for surgery, Perioperative bleeding and prolonged ventilator support. Most of Mediastintis patients 62/67(92.5%) were coronary artery bypass and valve surgery were 4/67(6%) while one patient (1.5%) was repair of Fallot tetra logy. Main causative organism isolated was staphylococcus (90%). The management included, clinical, microbiological, hematological and radiological diagnosis followed by surgical debridement of the sternum and mediastinum followed by mediastinal drainage. Postoperative mediastinal irrigation with povidone iodine 0.5% was used in 10 patients (15%), total sternectomy and pectoral musclocutaneous flap was performed in one patient (1.5%) and partial sternectomy with musclocutaneous flap was done in 7 patients (10.5%). Sternal rewiring using simple interrupted stainless stitches in 40 patients (60%) and Robicsek in 20 patient (30%) and figure of eight in 4 patients (6%). Repeat of Sternal debridement were required in 5 patients (7.5%). The mortality was around 6% (4 patients) this relatively low mortality is due to early diagnosis and surgical intervention following diagnosis.

KEY WORDS: Sternum, Mediastintis and Management.

Coronary artery bypass graft surgery in elderly patients

Shahid Sami, Kamboh, GS, Siddique FJ, Sharfuddin SS, Ahmed B

Institution: **Aga Khan University Hospital**

INTRODUCTION: In Pakistan life expectancy is increasing so as the number of elderly patients requiring coronary artery bypass surgery (CABG). These patients have higher risk of mortality as compared to younger ones and cost v / s benefit is presumed to be unrewarding. This has led to the disinclination for operating on such patients. In this situation we, at Aga Khan University, did a 10-year (1994-2004) medical record review of CABGs on the patient's aged 70 years or above. We looked at outcomes of the patients in terms of mortality, morbidity & improvement in the NYHA functional class after CABGs.

RESULTS: 3312 CABGs were done from 1994 - 2004. Out of these 242(12.8%) were CABGs done on patients age 70 year or older with no valve or congenital abnormality. Median (IQR) age of the patients was 72(70-75) years, [n(%)] 207(85.5) were males, 73(30.2) were non-elective surgeries whereas 9(3.8) were re-do surgeries. In 4 patients concomitant procedures were done including 3 endarterctomies and 1 nephrectomy. Associated conditions were hypertension in 185(76.4), diabetes in 108(44.6) and dyslipidaemia in 116(47.9) patients. As per EuroSCORE 1 (0.4), 64(26.4) & 177(73.1) patients were of low, medium and high risk. Thirty-day follow up was 100%. Mortality within 30 days was 21(8.7); 33(13.6) patients experienced complication after surgery. Long term follow-up of 113(46.6) patients could be done. Median (IQR) follow-up duration was 2 (1 - 4) years. Nine (6.7) patient found to have died from other reasons. Out of 104 patients 81(77.9) patients improved their pre-op NYHA functional class.

CONCLUSION: Despite limitations of our study there is indication that CABGs done on elderly patients may be rewarding. Further studies should be done to get more evidence.

SURVIVAL AND QUALITY OF LIFE WITH MITRAL VALVE REPAIR IN ISCHEMIC CARDIOMYOPATHY

Vijay Kohli, Mukesh Goel, Harpreet Wasir, Ramesh Kumar Bapna, Zile Singh Meharwal Yugal Mishra, Rajneesh Malhotra, Surinder Bazaz, Yatin Mehta, Naresh Trehan

Institution: **Escorts Heart Institute and Research Centre, Okhla Road**

AIMS/OBJECTIVES: Mitral regurgitation in ischemic cardiomyopathy worsens the prognosis and its repair improves symptoms and quality of life.

METHOD: 24 patients underwent mitral valve repair with coronary artery bypass grafting in ischemic cardiomyopathy between June 2003 and October 2004. Age varied from 43 to 72 years with a mean of 60.1 years. LV ejection fraction ranged from 15 to 45% (mean 30.33). Mean NYHA class was 3.1±1.2. Mitral repair carried by either posterior annuloplasty or ring placement. Mean number of grafts was 2.6±0.6.

RESULTS: Mean ICU and hospital stay was 60.25 hrs and 11.2 days. Mean follow up was 6.5±1.5 months (1-15 months). Severity of mitral regurgitation improved from 3.4 to 1.1 and NYHA class from 3.1±1.2 to 1.6±0.3 postoperatively. Mean Ejection fraction improved from 30 to 36%. Readmission for heart failure was nil. One patient died in the hospital.

CONCLUSIONS: Mitral valve repair in ischemic cardiomyopathy can be carried out with acceptable morbidity and mortality and leads to improved quality of life.

Ocular complications following open heart surgery.

Ahmad Alzaini, Sameh Ibrahim sersar MBBCH [a], Usama A. Hamza [a] MD And Ashraf I.Moawad [b] MD

Institution: [a] Cardiothoracic Surgery department, [b] pohthamology centre, Mansoura University, Mansoura, Egypt.

INTRODUCTION: Neurologic injury following cardiac surgery with cardiopulmonary bypass is a well known squela and is an important cause of mortality and morbidity. The aim of this study is to evaluate the incidence and types of postoperative ocular complications which may occur following open heart surgery.

PATIENTS AND METHODS: This prospective study included 47 adult consecutive patients undergoing elective open heart procedures on cardiopulmonary bypass. Numerous perioperative clinical, technical and laboratory variables were analyzed. The patients included in this study were subjected to preoperative and postoperative full ophthalmological examination, fundus fluorescene angiography and visual field test.

RESULTS: One patient had postoperative anterior ischemic optic neuropathy in one eye and two patients had postoperative variable visual field defects.

CONCLUSION: Ocular complications following open heart surgery are rare but devastating with poor treatment results. Prophylactic measures that are important to guard against embolization must be insisted upon. However, further studies are still required.

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CONGENITAL CARDIAC SURGERY

2:30 PM-4:00 PM

Panel of experts: Prof R Lange, Prof William Novick, Prof Rodolfo Neirotti, Dr Krishna S Iyre, Lt Gen Syed Afzal Ahmad, Dr Abdul Waheed.
Coordinator: Dr Zafar Tufail, Moderator: Dr Haider Zaman

William M Novick (USA)
Anomalous Left Coronary Artery from the Pulmonary Artery: Coronary elongation and translocation procedure results

Anil Bhan (India)
Neonatal and infant coarctation of aorta? which is superior surgical strategy

Shahid M Khan (Saudi Arabia)
Bicuspid pulmonary valve! not a contraindication for arterial switch operation.

M Muneer Amanullah (UK)
Anomalous Left Coronary Artery from the Pulmonary Artery: Techniques for Creating Two Coronary Artery Systems.

Tariq Ahmed (India)
Bidirectional Glenn shunt without CPB, is it a safe option?

Kamal Saleem (Pakistan)
Ventricular septal defects & pulmonary hypertension experience at AFIC / NIHD, Rawalpindi

Amit Mishra (India)
Three years experience with RV to PA conduits.

T S Mahant (India)
Current scenario of Neonatal Cardiac Surgery in India.

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Anomalous Left Coronary Artery from the Pulmonary Artery: Coronary elongation and translocation procedure results.

William M Novick, D Aniæ, I Malèiæ, N Sandoval, G Carillo, A Lora, TA Chin, TG Di Sessa

Institution: **Department of Surgery and Pediatrics, University of Tennessee, Memphis, TN., USA, Departments of Cardiac Surgery and Pediatrics, KBC-Zagreb, Zagreb, Croatia, Departments of Cardiac Surgery and Pediatrics, Clinica Shaio, Bogotá, Colombia, Department of Pediatric Cardiac Surgery, INCOR, Lima, Peru, Department of Pediatrics, University of Kentucky, International Children's Heart Foundation, Memphis, TN., USA**

PURPOSE: Several surgical approaches have been described for correcting anomalous left coronary artery from the pulmonary artery (ALCAPA). A two coronary system is preferred; however translocation of the left coronary is not always possible. The purpose of this report is to describe a new technique and the intermediate results of left coronary elongation and translocation using pulmonary artery flaps.

MATERIALS AND METHODS: Records of patients undergoing operation by the International Children's Heart Foundation team were reviewed (April 1993-July 2004) to determine those undergoing operation for ALCAPA. Patient's records undergoing left coronary elongation and translocation were extracted. Follow-up with their local cardiologists was conducted between June 15 and August 9, 2004. All patients received a 2-D echocardiographic evaluation to asses left ventricular ejection fraction, degree of mitral regurgitation and patency of the left coronary elongation.

RESULTS: A total of 10 patients were identified as recipients of an operation for ALCAPA. Seven underwent left coronary elongation and translocation. Six patients were female, age ranged from 6 months to 41 years. One patient had previously undergone a Tacheuchi procedure with mitral annuloplasty. All 7 patients presented primarily with mitral regurgitation and cardiac failure. Mitral regurgitation preoperatively was determined to be severe in 5 and moderate to severe in 2. All seven patients survived operation and were alive at follow-up. Mean cardiopulmonary bypass time was 96±27 minutes and mean ischemic time was 63±17 minutes. The coronary elongation and translocation procedure was performed in all patients; however, in one patient it was performed in conjunction with the takedown of a Takeuchi procedure and mitral valve replacement. Another patient underwent a mitral annuloplasty with a flexible ring when the intra-

operative transesophageal echocardiogram revealed severe mitral regurgitation following bypass. Follow-up ranged from 1 month to 4.9 years postoperatively. Color Doppler showed a patent left coronary artery in all patients. Moreover, left ventricular ejection fraction was normal in all patients. Mitral regurgitation was absent in 4, mild to moderate in 2 and moderate to severe in 1.

CONCLUSIONS: The technique of left coronary elongation using pulmonary artery flaps provides an alternative approach for the creation of a two coronary system in patients with ALCAPA. Intermediate results show good ventricular function, patent left coronary elongations and improved mitral regurgitation in these patients.

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NEONATAL AND INFANT COARCTATION OF AORTA? WHICH IS SUPERIOR SURGICAL STATEGY

Anil Bhan†, Saikrishna cheemalapati, Rajnish Juneja, Gurpreet Gulati, Shyam Sunder Kothari

Institution: **Max Hospital New Delhi†, AIIMS New Delhi**

OBJECTIVE: A retrospective comparison of clinical, echocardiographic and radiologic outcome following surgical correction of coarctation of the aorta by subclavian flap aortoplasty or resection end to end anastomosis at less than 3 months of age.

METHODS: 62 patients under 3 months of age with isolated coarctation of the aorta who underwent surgical correction between 1997 and 2002 (34 resections and 28 subclavian flap aortoplasties) were studied. Age at time of repair was comparable (p=0.54). Weight at time of repair was lower in the resection group (p=0.0008). Follow up included clinical evaluation, echocardiographic estimation of residual gradient and left ventricular mass index in all patients and CT Aortography if there was evidence of recoarctation. Measurements of mid-arm circumference, acromion to olecranon distance along with brachial artery flow velocity and flow pattern in both upper limbs were carried out in the flap aortoplasty group.

RESULTS: Mean follow-up was 33.21±14.78 months (range 12-65 months) which was similar in both groups (p=0.26). 12 in the resection group (35%) and 4 in the flap group (15%0 had recoarctation. Left ventricular mass index was higher in the resection group (mean 76.50±11g/m²) than the flap group (mean 58±4.77g/m²) p=0.00. There were no obvious upper limb ischaemic complications in the flap group, but the left arm was significantly shorter than the right.

CONCLUSIONS: Subclavian flap procedure is superior in terms of lesser recurrence, and also lower left ventricular mass index. Minor differences in limb length were noted though none of the patients were symptomatic.

BICUSPID PULMONARY VALVE! NOT A CONTRAINDICATION FOR ARTERIAL SWITCH OPERATION.

Shahid M Khan, A Sallehuddin, M Al Aklabi, K Al Dhafiri, M Al Joufan, Z Al Halees

Institution: King Faisal Heart Institute, Riyadh, Saudi Arabia.

OBJECTIVES: Identify the incidence of bicuspid pulmonary valve (PV) in the patients undergoing arterial switch operation (ASO) and determine long term integrity of the bicuspid pulmonary valve when used an aortic valve in ASO, as proper recommendation of its use is not established.

METHODS: Patients who had arterial switch operation between 1986 and 2001 were retrospectively reviewed. Clinical and echocardiographic data was analyzed. A poor outcome is defined echocardiographically as, valve stenosis (mean gradient of >20 mm Hg) and/or incompetence grade >/=2+. Poor left ventricular dysfunction was defined by an ejection fraction < 50%.

RESULTS: 380 patients had ASO for simple transposition (D-TGA), D-TGA/ VSD and Taussig Bing anomaly. Twelve patients had bicuspid pulmonary valve (age 4days – 2 Yrs), 9 were identified preoperatively and were considered good for ASO, and the other three were diagnosed at surgery. Fifteen patients with echocardiographically bicuspid Pulmonary Valves were considered unsuitable for ASO and had Senning procedure. Hence, overall incidence of bicuspid PV is 6.8%. Mean follow up was 63 months (range 11 – 139). One patient was lost to follow up. There was no hospital or late mortality. At last follow up: 7 valves were found to be competent, 3 with 1+ aortic regurgitation and one required valve replacement four years after ASO for Taussig Bing anomaly. The latter had repair of Coarctation and pulmonary artery banding prior to ASO. No patient developed valve stenosis. LV function was preserved in all but the patient who had aortic replacement.

CONCLUSIONS: Bicuspid pulmonary valves are stable in the neoaortic position and should not contraindicate ASO. Echocardiographic criteria of the bicuspid valve to rule out ASO need to be better redefined. Caution must be exercised when there is an associated VSD with dilated pulmonary annulus.

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Anomalous Left Coronary Artery from the Pulmonary Artery: Techniques for Creating Two Coronary Artery System

M Muneer Amanullah, Anthony Rostron, Asif Hasan, John Leslie Hamilton

Institution: Freeman Hospital. Newcastle upon Tyne. UK

AIMS / OBJECTIVES: Among the variety of surgical techniques available, maintaining dual arterial supply is the ideal method for long-term patency, adequate blood supply and survival. We describe various methods to maintain a dual coronary artery system.

METHOD: 10 out of 14 patients underwent direct re-implantation of the ALCAPA to the aorta from 1990 to 2003.

RESULTS: Median age 4.5 months (2 – 66 months). 7 referred for incidental cardiomegaly, 2 for heart transplant and one with sudden death. TTE confirmed the diagnosis in all but 2. All had severe LV dysfunction with moderate to severe MR. 6 techniques were used to create 2 coronary systems in 10 patients. No deaths. Mechanical assist in 4. Median of 4 years follow-up (14 years to 6 months). No MR and near full recovery of LV function in all patients.

CONCLUSIONS: All patients with the diagnosis of ALCAPA should be operated on usually within days of making the diagnosis with the goal of providing a two-coronary artery system, No matter how severe the ventricular dysfunction appears, we recommend aortic implantation of the ALCAPA as the primary therapy.

BIDIRECTIONAL GLENN SHUNT WITHOUT CPB, IS IT A SAFE OPTION?

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Institution: **Max Hospital New Delhi, AIIMS New Delhi.**

OBJECTIVES: The bi-directional cavopulmonary (Glenn) shunt (BDG) is often performed as the first stage palliation for children with univentricular physiology. It is usually performed under cardiopulmonary bypass (CPB) with its associated adverse effects and costs. We report our early results of BDG operation done without CPB.

METHODS: Between January 2002 and July 2003, a total of 37 patients with complex cyanotic congenital heart defects underwent BDG operation by a single surgeon at our center. Of these, 22 patients had the procedure performed without CPB. Age of the patients ranged from 7 months to 11 years (mean 3.09 years). The procedure was done with temporary clamping of the superior vena cava. Four patients had bilateral BDG done and one had additional right pulmonary artery (RPA) plasty done. All the patients underwent complete neurological examination, CT scan of head and developmental quotient (D.Q.)/ intelligence quotient (I.Q.) test both preoperatively as well as postoperatively.

RESULTS: There was no operative mortality in our patients. The follow-up has ranged from 3-19 months. The internal jugular venous (IJV) pressure on clamping the SVC ranged from 17-57 mm Hg (mean 34.2 mm Hg). The clamp time ranged from 4.5-10 minutes (mean 6.8 min). There was no hemodynamic instability during any of the procedures and oxygen saturation was maintained at more than 70% throughtout the procedure. The average ICU stay was 1 day. There were no neurological complications in any patient as assessed clinically and by CT scan of the head. None of the patients showed deterioration of D.Q./I.Q. score during follow-up (3-19 months) evaluation.

CONCLUSIONS: Our early results show that in selected patients, Bidirectional Glenn operation without CPB is a safe procedure. It avoids CPB related problems and is economical, with excellent results.

VENTRICULAR SEPTAL DEFECTS & PULMONARY HYPERTENSION EXPERIENCE AT AFIC/NIHD, RAWALPINDI

Kamal Saleem, Syed Afzal Ahmad, Azhar Rashid, Asif Ali Khan, Muhammad Zameer, Shahab Naqvi, Iftikhar Ahmad, Dr Mahrukh Zahoor

Institution: **Armed Forces Institute of Cardiology / National Institute of Heart Diseases (AFIC / NIHD), Rawalpindi**

AIMS: To review our experience of early primary closure of Ventricular septal defects and effectivity of Nitric Oxide in children less than 5 years of age.

MATERIAL & METHODS: During period from 1st January 2002 to 30th October 2004, 73 patients with 45 males and 28 females were studied retrospectively.

RESULTS: Mean age was 2.07 ± 1.59 years (127 days to 5 years) with mean body weight of 7.60 ± 3.33 Kg (3.1-16) and mean body surface area of 0.44 ± 0.18 mm^2 (0.21- 0.96). Additional lesions included Atrial septal defect (ASD) in 8 patients, Patent ductus arteriosus (PDA) in 10 patients and Aortic regurgitation in 3 patients. 4 patients had multiple VSDs and 5 patients had Down syndrome. Cardiac catheterization was carried out in 42 cases. Nitric oxide was used in 34 cases.

Major complications included pulmonary hypertensive crisis, systemic inflammatory response syndrome, pulmonary infections and serous effusions. Mortality was 9 / 73 (12.3%) (23.5% in patients < 5 kg and 5.5% in patients > 5 Kg ($p = 0.05$), no death in babies > 10 kg). Patients who died were younger (0.75 ± 0.34 years vs 2.24 ± 1.16 years, $p = 0.01$) with less weight (4.91 ± 1.56 Kg vs 7.94 ± 3.35, $p = 0.03$), less body surface area (0.31 ± 0.07 mm^2 vs 0.45 ± 0.18 mm^2, $p = 0.03$), and high pulmonary artery to systemic pressure ratio at the time of coming of bypass (0.63 ± 0.13 vs 0.43 ± 0.09 $p < 0.001$). 6 / 9 (66.6%) patients had another hemodynamically significant lesion. Mortality for patients with associated PDA was 28.5% and with associated ASD was 33.3% ($P < 0.05$).

CONCLUSION: Primary VSD repair should be done at an early stage to provide maximum benefits to these babies. Mortality and morbidity in babies with low body weight is high but acceptable. Nitric Oxide is a good adjuvant therapy in patients with resistant pulmonary hypertension. It is likely to improve with experience and better perioperative care.

THREE YEARS EXPERIENCE WITH R.V. TO P.A. CONDUITS NARAYANA HRUDAYALAYA, BANGALORE

Amit Mishra, Suresh PV, Shekhar Rao, Colin John, Devi Prasad Shetty, Rajesh Sharma.

Institution: **Department of Cardiothoracic and Vascular Surgery, Narayana Hrudayalaya, Bangalore, India.**

INTRODUCTION: Availability of homograft has broadened the scope for biventricular repair for patients with R.V. to P.A. discontinuity. We report our 3 years experience with homograft reconstruction of RVOT.

METHOD: 85 patients of age from 2 months to 27 years underwent homograft reconstruction of RVOT. 18 patients had Pulmonary Atresia with VSD, 14 has TGAVSD & PS , 9 had Truncus Arteriosus, 1 had TGA VSD with non-transferable coronaries , 3 patients had l-TGA,VSD,PS, 5 patients had TOF with Coronary Anomalies, 5 had TOF with Absent pulmonary valve , one patient had DORV, VSD,PS. 2 patients underwent re-do homograft replacement for PA, VSD and 2 patients underwent patch replacement of the homograft. 55 Patients underwent homograft replacement on the right side as a part of Ross Procedure. Most patients received fresh antibiotic preserved homograft. Aortic homograft was used in 24 patients and pulmonary homograft in 53 patients. 6 patients had Biocor Valved Conduit and in 2 patients Goretex Tube grafts were used.

RESULTS: 4 patients had mild residual gradient across the conduit. One patient had mild RPA stenosis. 9 patients had needed Tracheostomy for ventilatory weaning. One patient needed re-operation for systemic venous baffle leak following Double Switch Operation. 8 patients died due to Septicemia and One patient died due to Low Cardiac Output in the immediate post-operative period. There was no mortality in the Ross group.

CONCLUSION: Availability of Homograft has widened the scope for biventricular repair for complex congenital cardiac lesions with RV to PA Discontinuity.

TUSEDAY MARCH 29, 2005
EMERALD HALL C

Current scenario of Neonatal Cardiac Surgery in India

TS Mahant

Institution: **Executive Director, CTVS, Fortis Hospital, Mohali, India.**

Congenital heart defects occur in about 1 percent of all newborns, and about one-quarter of these infants will need surgery to correct their condition. India produces the largest number of children in the world. So, going by the incidence of congenital heart disease we produce the largest number of children with heart diseases in the world (approximately 3 lakh children every year)

We treat people with congenital heart disease over the entire age spectrum, from 1-day-old infants to middle-aged adults who have grown up with their condition. Our primary interest is neonatal cardiac surgery on premature or low birth weight infants. The small size of the patients, coupled with the fact that many premature infants also have immature organ systems or multi-organ disease, make them a challenge.

Optimizing their cardiac efficiency soon after birth boosts their overall health. Previously, these tiny infants may not have been considered for surgery or would have been given only palliative care. We have got significant achievements in development of a state-of-the-art neonatal and infant cardiac surgery facility.

Our team of paediatric cardiac surgeons is one of the most experienced in the world in terms of specializes in operating on children, especially children suffering from complex heart problem called Tetralogy of Fallot (TOF), d-TGA or TAPVC. Arterial switch operations, repair of total anomalous pulmonary venous connection are routinely performed at our setup in newborns and very small infants. The smallest child undergoing a successful arterial switch operation at our setup was 1.8 Kg while a child undergoing VSD with Co-arctation repair was of 1.3 kg.

FREE PAPERS
4:20 PM-6:00 PM

Panel of experts: Prof Omer Isik, Dr Deepak Puri, Dr Murali Vettath, Dr Abdul Waheed
Coordinator: Dr Riaz Anwar Khan,
Moderator: Dr Saulat Fatimi

Aubyn Marath (USA)
A new International database for developing countries.

Ahmed El Sayed (Sudan)
Cardiac Surgery in Sudan- past, present and future.

Saw Huat Seong (Singapore)
Why Tissue Heart Valves in Emergent Countries?

AG Ahangar (India)
Prosthetic valve endocarditis- Current Concepts and Management.

Fehmi Katircioglu (Turkey)
Early and late results of closed mitral valvotomy.

Munir Ahmad (Pakistan)
Surgery for congenital Heart Disease - Initial experience at Shifa International Hospital.

Dr S Muralidharan (India)
Development of Cardiac Surgery in smaller cities "Travails and Triumphs".

Ahmet Saritas (Turkey)
Aortic Arch Repair with antergrade cerebral perfusion via Right Brachial Artery.

Hubert Haider (Pakistan)
Modified Ultrafiltration (MUF) - Role in Pediatric Cardiac Surgery.

Nusrat Rizvi (Pakistan)
Vacuum assisted venous drainage system (VAVD)

TUSEDAY MARCH 29, 2005
EMERALD HALL C

A NEW INTERNATIONAL DATABASE FOR DEVELOPING COUNTRIES

PROF AUBYN MARATH, TIM ORVALD, GIANCARLO GRUPI, LARS ANDERSEN, MATT DAVIS, SUSANNE HOLME

Institution: **Oregon, Washington, USA, Bergamo, Italy & Copenhagen, Denmark.**

The need for data tracking of consultations and operations performed is vital in any hospital setting, but especially important in developing countries. To assist development of a new program, the most important medical and social issues should be identified first and differences between cultures in which variations in heart disease occur determined, so that longer-term management can be achieved.

Many databases are available, but in developing countries they sometimes answer questions that physicians are neither asking nor seem helpful to the realities faced by themselves or the local communities in those countries aspiring to develop a cardiac program. For some families, the cardiac lesion is of less importance than the severe socio-economic issues they face.

CardioStart International now has a comprehensive 600-question database in which five key participants who determine the peri-operative management each contribute data on a patient. The database allows a hospital department to attempt to examine the medical and social issues faced by patients in the context of their families in addition to the cost-benefit evaluations. It is projected to determine outcomes in the communities most in need of assistance and it is hoped that the information gained will lead to more financial support for such programs by their health ministries. It will also evaluate the medical outcomes of surgical results by local and visiting surgical teams when severe equipment and personnel shortage exist. Our current experience has been that operations performed in severely adverse conditions fare equally well to those in established centers. Such information, however, should be subject to audit by a database in which the same core elements are examined as those applied in developing countries... but, one that factors in those variables which reflect the various shortcomings faced.

DEVELOPMENT OF CARDIAC SURGERY IN SMALLER CITIES "TRAVAILS ANDTRIUMPHS"

S Muralidharan

Institution: G. Kuppuswamy Naidu Memorial Hospital, Coimbatore, India.

Coimbatore in South India has a population of 10 lakhs. In this town cardiology and Cardiac Surgery was thought to be a necessity and was started in a small way in 1974 with a Cardiac Care Unit and a facility for doing closed heart surgery.

The essence of development is to provide a service complete in all forms to the population. A stand alone Cardiac facility is not always possible. Planning staff and manage interrelated services, buildings and equipment is only one aspect of this project. What is not often taken care of is in service training of medical and paramedical workers who form the key to success. Education of local physicians by lectures, camps and correspondence to increase their awareness of what can be done.

Economics of heart surgery, to make it affordable yet safe by the use of cost effective techniques and equipment. Seeking help from Government and non governmental sources for the patients in need of funds also becomes a necessity. Any service to be accepted has to be a credible service.

The criteria for setting up a Department, Intensive care, Operating Room and equipment requirement will go through in detail, drawing from our experience in our centre and our support in starting other units.

AORTIC ARCH REPAIR WITH ANTEGRADE CEREBRAL PERFUSION VIA RIGHT BRACHIAL ARTERY

Dr. Ahmet Sarýtaþ

Institution: Cardiovascular Surgery Clinic, Türkiye Yüksek Ýhtisas Hospital, Ankara, Turkey

Aortic arch surgery and methods of cerebral protection has been an unsolved discussion in surgical literature for more than three decades. Profound hypothermic circulatory arrest was the pioneering technique and, later as an adjunct to it, retrograde cerebral perfusion have been the preferred procedures for successful aortic arch repair. However safety with these techniques was not satisfactory as far as neurological results are concerned. Recently many authors have switched to selective antegrade cerebral perfusion techniques. However uniformity does exist neither for neurological results nor for the technical applications of antegrade cerebral perfusion.

Our group at Turkiye Yuksek Ihtisas Hospital cardiovascular surgery clinic is using a modified antegrade cerebral perfusion technique via right brachial artery, in conjunction with moderate hypothermia (26°C). Between January 1996 and July 2004, 189 patients underwent aortic arch repair by the use of this technique. Total major neurological event rate was 2.1 %.

Dissection and cannulation of the right upper brachial artery was done prior to median sternotomy. After heparin administration, arterial soft clamps are placed proximal and distal to the cannulation site. The artery is cannulated with a nonwire-reinforced venting catheter (California Medical Laboratories, Irvine, CA), the tip of which is trimmed to 16 to 18 F diameters according to the size of patient's brachial artery. The cannula is connected to the CPB circuit as usual for any arterial return cannula. Following median sternotomy, venous cannulation is done using a two-stage single venous cannula. Cardiac arrest is established by cold crystalloid antegrade/retrograde cardioplegia. Cardiopulmonary bypass is instituted at a rate of 2.0-2.2 L/min/m^2. Flow is decreased to 500 to 600 mL/min (8 to 10 mL/kg/min) at 26°C rectal temperature. The innominate, left common carotid, and, occasionally, the left subclavian artery (but only if the returning blood interferes with suturing) are clamped with soft vascular clamps. Cross-clamp on the aorta is released. All arch reconstructions and distal anastomosis were performed with open aortic anastomosis technique while low-flow perfusion through the brachial artery continued. After terminating the distal repair the flow through the upper brachial artery cannula is increased gradually as the soft clamps on the brachiocephalic vessels are released. Air is removed from the vessels and

grafts, which are then filled with blood, and the distal graft is cross-clamped. Normal flow rate is reached through the brachial artery cannula and rewarming is begun in accordance with the time necessary for proximal repair.

Arch repair with antegrade cerebral perfusion through right brachial artery has excellent neurological results, provides technical simplicity and optimal repair without time restraints, does not necessitate deep hypothermia and requires shorter CPB and operation times.

TUSEDAY MARCH 29, 2005
EMERALD HALL C

MODIFIED ULTRAFILTRATION (MUF)-ROLE IN PEDIATRIC CARDIAC SURGERY

Mr. Hubert Haider, Mr. Muhammad Zaman, Mr. Raheel Anjum, Dr. Khalid Rasheed, Dr. Munir Ahmad, Dr. Tamkeen Pervez, Dr. Harris Baig

Institution: **Department of Cardiac Surgery, Shifa International Hospital, Islamabad, Pakistan.**

AIMS: To evaluate the role of MUF in reversing hemodilution after termination of cardiopulmonary bypass (CPB) and its deleterious effects on hemodynamics in pediatric patients. The MUF circuit, its conduct, technical complications and safety devices are also discussed.

DESIGN: Retrospective analysis of 24 patients who underwent CPB for surgical correction of congenital heart disease. They were divided into two subgroups: (i) conventional ultrafiltration i.e. hemofiltration during CPB, .and (ii) MUF after coming off CPB. This study evaluates the effects of the two techniques on hematocrit, systolic blood pressure and heart rate.

RESULTS: Of all these patients, 50% underwent conventional ultra-filtration and 50% MUF. MUF was found to be more effective in achieving better elevation of hematocrit and excellent hemodynamics in all the patients.

CONCLUSIONS: MUF technique greatly reduces the amount of fluid patients retain during CPB and results in better hemodynamics. This, ultimately, prevents organ dysfunction and allows more expeditious recovery and shorter ICU stay.

Cardiac Surgery in Sudan Past, Present and Future

Mr Ahmed ElSayed, Mr Zeead Karani, Dr Mohieldin Mohammad

Institution: **Cardiothoracic Surgery Department Sudan Heart Center Khartoum Sudan**

Cardiovascular disease is generally considered a disease of the developed world. However it is quickly becoming apparent in the underdeveloped world to an extent that the WHO is repeatedly warning about the double burden of disease with diseases of the poor (malnutrition infectious diseases etc) joining up with diseases of the rich such as cardiovascular disease to stretch the services and meager resources of third world countries. Realistically what happens is due to the cost of treating diseases such as cardiovascular disease the services rendered to patients in third world countries are abysmal to say the least. So for example, the number of open heart operations done per million of population in the USA is 1200, in Europe is 600 and in Africa is 18.

In this presentation we highlight the progress of cardiac services in Sudan from its inauguration in the 60s, progression in the 70s, disappearance in the 80s and reemergence in the 90s.

We would also like to highlight our plans for the future which have taken into consideration the past and present and are trying to make Sudan a beacon to spread this specialty to our neighbors and Sub-Saharan Africa.

TUSEDAY MARCH 29, 2005
EMERALD HALL C

SURGERY FOR CONGENITAL HEART DISEASE - INITIAL EXPERIENCE AT SHIFA INTERNATIONAL HOSPITAL

Munir Ahmad, Khalid Rasheed, Dilawar Cheema, Harris Baig, Tamkeen Pervez, Umair Aslam

Institution: **Department of Cardiac Surgery, Shifa International Hospital, Islamabad, Pakistan**

AIMS: To assess the prognosis, various factors influencing development, and quality of surgery for congenital heart disease in a new center.

DESIGN: Retrospective analysis of 55 subjects who underwent surgery for CHD in our center, with comparison between subgroups.

RESULTS: A total of 55 surgeries were performed for CHD. Of these, 9% were done on children aged less than 1 year, 78% on those aged between 1-18 years, and 13% on patients above 18 years. 67% of the patients were males and 36% were females. 11%of these were closed-heart surgeries and 89% were open-heart surgeries, of which one-third were for complex CHD. The mortality for open-heart surgery was 4%. Early post-operative complications were re-operation (2%), recurrent pericardial effusions (2%) and complete heart block (2%). Late re-operation was required in one patient only.

CONCLUSIONS: In our initial experience, the results of congenital heart surgery were encouraging and comparable to international standards. The difficulties encountered during the development of this congenital heart program included availability of trained staff and financial constraints, which will be discussed.

VACUUM ASSISTED VENOUS DRAINAGE SYSTEM (V A V D)

Nusrat Rizvi

Institution: Aga Khan University Hospital, Karachi

AIM: To increase venous drainage with small size venous Cannulae and small size of tubing circit .for less Hemodilution and batter surgical field

The venous drainage during cardio pulmonary by pass(C P B) is from the gravity without support of any pump

To Increase the venous drainage was a dream for every perfusionist and surgeon using a non occlusive pump in the venous line is a most common method of assisting venous drainage while many of the techniques are currently used at one center or another no any technique is final anyhow if we have enough venous drainage with smaller size of venous cannula and small venous line it does effect in the adult Less Hemodilution empty heart but also important for pediatric and infant patients we have very small surgical filled in pediatric and neonate patients with the support of VAVD we have a better surgical field in AKUH we developed our own locally VAVD system with some changes in the tubing circit to use it safely and satisfactory although we have used successfully on 112 patients included adult Peadiatric and neonate .

PAPERS APPROVED FOR PRESENTATION

RESULTS OF SURGICAL CLOSURE OF ISOLATED SECUNDUM ATRIAL SEPTAL DEFECT IN 1100 PATIENTS

Prof R S Dhaliwal, S Luthra, D Das, Sumeer Goyal , Jaswinder Singh, S K Thingam, S S Rana, R K Soo, J S Gujral

Institution: **Depatt. Of Cardiovascular & Thoracic Surgery, Postgraduate Institute of Medical Education & Research, Chandigarh, India.**

BACKGROUND: Isolated ASD account for about 10-15% of the cardiac malformations that are amenable to corrective surgery. It was the first intracardiac lesion to be successfully repaired under direct vision under hypothermia and later on cardiopulmonary bypass. This paper is based on retrospective analysis of 1100 patients who underwent closure of an isolated secundum atrial septal defect in our institute between January 1974 to Dec 2004.

METHODS: These 1100 patients were divided into two groups. Group I included 645 patients less than 20 yrs of age (334 males and 311 females). 418 (72%) were asymptomatic and 498 (89%) were in sinus rhythm.141 patients complained of shortness of breath and 115 had palpitations. No patient presented with congestive heart failure. Diagnosis was confirmed by 2 D Echo. Prior to 1989 patients underwent cardiac catheterization. Only 71 patients showed mild to moderate PAH. Cardiomegaly was present in 58%.

Group II included 455 patients' between 21 and 53 yrs - 157 males and 318 females. Only 41 (9%) were asymptomatic, 343 had dyspnoea and 280 had palpitations. 245(52%) were in sinus rhythm, and 210 (48%) had AF.CHF was present in 69(16%).Cardiac catheterization (prior to 1989) showed P AH in all .Cardiomegaly was present in 84% patients .CP bypass was used in all to close ASD. Fibrillatory arrest was used in 380 (59%) in Group I and 260 (48%) in Group II. Cardioplegia was used in 256 (41 %) of group I and 198 (47%) of group II patients. Direct closure was done in 63% and a synthetic or pericardial patch was used in 37% of group I patients. In group II 54% patients had direct closure and 46% had patch closure.

RESULTS: Mortality was 0.2% in Group I and 1.3% in Group II. Follow up ranged from 6 months to 30 yrs, mean being 19.3yrs in Group I and 12.8 yrs in Group II. Only 3% patients have some symptoms in Group I whereas 13% patients were symptomatic in Group II due to AF or PAH. Cardiomegaly persisted in 28% of Group II, it was absent in all Group I patients.

CONCLUSION: Surgical closure of isolated secundum atrial septal deffect is safe and is best perormed in early childhood and adolescence before complications develop.

SURGICAL LUNG BIOPSY FOR INTERSTITIAL LUNG DISEASE

Rizwan Qureshi. Antony Grayson, Ajaib Soorae

Institution: **Department of Thoracic surgery The Cardiothoracic Centre Liverpool UK.**

AIMS / OBJECTIVES: To evaluate our experience with surgical lung biopsy (open OLB and Video Thoracoscopic VLB) in the management of interstitial lung disease (ILD).

METHOD: One hundred patients underwent lung biopsy for ILD over. a five-year period. There were 59 men and 41women; with a median age of 51.5 years. Thirty patients underwent OLB, while 70 patients had VLB. Patient and disease characteristics, prior diagnostic studies, pre-operative therapy, biopsy type, site, size, number, laterality, morbidity, mortality and diagnostic yield were reviewed.

RESULTS: Tissue diagnosis was obtained in all patients (100%). Of those, 42 patients with a specific diagnosis, 59.5% had therapy altered, compared to 55.2%of 58 patients with a non-specific diagnosis (p=O.664). The most frequent diagnosis obtained was non-specific interstitial fibrosis (n =42) Right side was selected in 58.6% in VLB group and 36.7 % in open group (p =0.04) Right lower lobe was the main site for biopsy in the VLB group compared to lingula in open group (18.6 % versus 3.3%, p=0.04). Mean volume of biopsy was 15.6 cm3 in VLB group and 12.5cm3 in open group (p=0.04). Two or more biopsies were carried out in 37.1% of the VLB group compared to 16.7% of the open group (p=O.O4) There was no in-hospital death. Post-operative complications occurred in 18 patients (18%), atelectasis 7%, persistent air leak 5% respiratory failure 3%, ventilation 1%, wound infection 2%. The mean chest drain duration was 1 day (1-7) and length of hospital stay was 3 days (2-10)

CONCLUSIONS: Our experience suggest that

·Surgical lung biopsy is a safe, useful diagnostic procedure in the management of ILD.

·Right sided VLB has an advantage of greater volume and selection of biopsy sites.

The timing of cession of clopidogrel does not influence blood product usage or need for re-exploration following coronary artery bypass grafting

Zahid Mahmood, Praveen Menon, Heyman Lucraz, Peter O' Keefe

Institution: **Department of Cardiothoracic Surgery, University Hospital of Wales, Cardiff. United Kingdom**

BACKGROUND: Clopidogrel, an adenosine diphosphate receptor(ADP) antagonist has been shown to reduce the risk of cardiovascular death or nonfatal myocardial infarction among individuals presenting with acute coronary syndromes.

The potent inhibition of platelet function achieved by clopidogrel leads to prolongation of bleeding time and an increased risk of major hemorrhage,thus raising concerns about their safety around the time of CABG. We evaluated the effect of clopidogrel on patients with specific regard to blood product usage and re-exploration.

METHOD: We conducted a retrospective study in our Cardiac centre at University Hospital of Wales.The postoperative care of these patients is provided through dedicated cardiac intensive care unit and cardiac ward.

A total of 767 consecutive patients isolated first time CABG were studied between June 2002 and December 2003.Patients were grouped according to having been prescribed clopidogrel(n=200) or not (n=567). Packed red cells (PRC), blood products usage and surgical re-exploration were the end point compared.

The sub group analysis of clopidogrel group was also undertaken according to the time scale of cessation of drug administration prior to surgery which includes 1) until day of surgery, 2) Within 5 days of surgery and 3) more than 5 days of surgery. We compared packed red cells (PRC), blood products usage and surgical re-exploration in this sub group of patients.

We included use of all units of PRC and blood products in each patient group intra operative and until day of discharge.

We also included all the patients who underwent emergency, urgent or elective first time CABG. In this study we soley designed to examine packed red cells (PRC), blood products usage at the need for surgical re-exploration, no information was obtained about pre operative hematological indices, post operative chest tube drainage or hemodynamics.

RESULTS: There was a significant increase in the median number of blood($p=0.03$) and platelets($p<0.001$) units transfused between the two groups. The fresh frozen plasm(FFP) and cryoprecipitate requirements were not statistically different. The re-exploration rate was higher in the clopidogrel group (2% v/s 4.5% , $p=0.06$).

Sub group analysis showed that there was not any difference in blood, platelets, FFP and cryoprecipitate transfusions and re-exploration rate if clopidogrel was taken up to the time of surgery(n=56) compared to stopping the drug within five days (n=101) or over 5 days (n=43).

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CHEST WALL TUMOR RESECTION AND RECONSTRUCTION

Brig Muhammad Sultan Muzaffar, Major Bilal.

Institution: **Combined Military Hospital Rawalpindi, Pakistan**

AIMS AND OBJECTIVES: To present the experience of chest wall tumor resection and reconstructions in the thoracic surgery unit of CMH RWP

MATERIALS AND METHODS: A total of 18 cases of chest wall tumors requiring resection with reconstruction were encountered in our unit in last 3 years. Tumors not requiring reconstruction were not included in the study. They included primary malignant tumors in 13 cases and metastatic deposits in 5 cases. All were resected with clear margins and reconstruction was carried out with laying of prolene net and overlay of prolene mesh. Coverage was provided with rotation or advancement of chest wall musculature.

RESULTS: The patients made good post op recovery with minimal morbidity

CONCLUSION: Chest wall tumor requiring resection and reconstruction are a major undertaking and involve the expertise of thoracic surgeon, plastic surgeons and the anaesthesiologists. With proper evaluation and preparation they can be operated and do well.

SURGERY FOR BRONCHIECTASIS

Brig Muhammad Sultan Muzaffar, Major Farhan.

Institution: **Combined Military Hospital Rawalpindi, Pakistan**

AIM: To present the results of surgery for bronchiectasis in our department

MATERIAL AND METHODSL: The period of study from Dec 2000 to Dec 2004.The patients were selected for surgery by pulmonologistPatients with post tuberculosis were excluded.A total of 16 patients were operated. The mean age of presentation was 19 years ranging from 4 to 38 years,There 6 females and 10 males.The patients were adequately prepared. The resections involved right upper lobe in 3 cases, right lower lobe in 2, right middle lobe in one ,right bilobectomy involving 2 cases, left upper lobe in 2 , left lower lobe in 5 cases and one left lower lobectomy and limgulectomy in one case.

RESULTS: The resections were complicated by wound infection, empyema with Bronchopleural fistula formation in two cases.there was one post operative death.The symptomatic improvement was good but three patients with residual minor disease were satisfactorily managed medical treatment.

CONCLUSION: Bronchiectasis is a medical problem with varying etiology. Strict criteria for selection of patients requiring surgery is needed. Once appropriately selected patients and' prepared patients are served well after surgery. The residual disease may require good medical care.

OFF PUMP CORONARY ARTERY BYPASS GRAFT SURGERY- EARLY EXPERIENCE AT THE NICVD

Mohammad Zahidullah, Aurangzeb Durrani, Tariq Azam Siddiqui, Faridullah Khan, Fazl-e-Rabbi, Akhtar Hussain, ArifurRehman Khan.

Institution: **National Institute of Cardiovascular Diseases, Karachi.**

AIMS: To assess the safety of the procedure and evaluate the short and medium term results.

METHODS: Patients with single, double and triple vessel Coronary Artery Disease, with disease pattern suitable for off pump coronary artery bypass surgery, were selected from all those referred for coronary artery bypass surgery, since June 2003. Patients with diffuse disease and smaller size coronaries were not chosen for the procedure. Similarly patients requiring grafting of Obtuse Marginal II branch were offered conventional on pump surgery. Octopus II was used for stabilizing the heart during the procedure. Either intra coronary shunts or snaring of the coronary arteries proximal and distal to the site of anastomosis was used to ensure a blood-less field for surgery. Left Anterior Descending artery was grafted first, followed by grafting of the other systems.

A data of 150 cases is presented. 13 patients had to be converted to conventional on pump surgery, because of haemodynamic instability, during grafting of circumflex system or posterior descending artery.

Patients were assessed with routine post operative 12 lead ECG and cardiac enzymes for any peri-operative myocardial insult.

RESULTS: There have been two in-hospital deaths. The rest of the patients are being followed up regularly, with good clinical results.

CONCLUSION: Off pump coronary artery surgery can be performed safely, with good short and medium term results, in selected group of patients. The procedure can be more widely as more experience is gained.

FREE CARDIAC SURGERY – A REALITY

Abdul Bari Khan, Syed Aftab Mahmood, Jawairia Shakil, Hina Tehsin, Samiullah, Shahid, Umer

Institution: **Dow University of Health Science & Civil Hospital Karachi**

AIMS: To (highlight) various types of Adult and Paediatric Cardiac Surgery done free of cost at our Department

METHOD: Audit Report 2000 – September 2004

RESULTS:

TOTAL NO OF SURGERIES	**756**	
Breakdown by gender	**445 male – 311 female**	
Breakdown by procedure	**CABG**	**203**
	CLOSE M COM	**124**
	ASD	**97**
	MVR	**98**
	AVR	**34**
	DVR	**21**
Total mortality	**>10 yrs age group 1.6 %**	
	< 10 yrs age group 7%	

CONCLUSION: This report shows the magnitude of work done in our department free of cost which clearly shows our dedication in providing quality care for the under privileged society.

BLOOD CARDIOPLEGIA versus CRYSTALLIOD CARDIOPLEGIA

Sohail Aslam, Taskeen Ahmad, Khalid Rehman, Nayyar Waseem, Hamid Ahmad, Murad Ali, Javed Nawab, Abdul Malik, Abid Aslam Awan, Riaz Anwar Khan, Jalal Khan, Parvez Mannan

Institution: **Dept of Cardiovascular Surgery PGMI Lady Reading Hospital Peshawar.**

OBJECTIVE: To assess the clinical outcome of two groups of patients by using blood cardioplegia versus crystalloid cardioplegia for myocardial protection in Open Heart Surgical cases.

MATERIAL AND METHODS: This study was conducted from July 1993 to Dec 2004 to asses the blood cardioplegia versus crystalloid cardioplegia for myocardial protection in Open Heart Surgical cases. Clinical data was retrieved from hospital records of the patients who underwent mitral valve surgery, aortic valve surgery, coronary artery bypass surgery, atrial septal defect repairs, open pulmonary valvotomies, right ventricular out flow obstruction. Patients were divided into two groups i.e. July 1993 to December 2002 (GPA) where cold cyrtalliod cardioplegia was used for myocardial protection. (GPB) from Jan 2003 to Dec 2004 (GPB) where cold blood cardioplegia was used. Data was analyzed in both groups regarding age, sex, NYHA status, total cardiopulmonary bypass time, cross clamp time, electrical cardioversion after declamping, peri-operative arrythmias, use of inotropes while coming off bypass. Post-operatively duration of inotropic support, ventilatory support, diuretics, antiarrythmic drugs, mortality and morbidity was assessed.

RESULTS: There was no significant difference in terms of cross clamp time, bypass time in both groups whereas spontaneous recovery of cardiac rhythm after declamping GPA (7.69%) versus GPB (36.36%). Need for electrical cardioversion after declamping GPA (92.30%) versus GPB (58.74%). No difference in use of inotropes while coming off bypass or use of pacing in both groups.Operative mortality was 3.86% in GPA versus zero in group B. Duration of mechanical ventilatory support was more in GPA than GPB, 19 hours vs 5.4 hours. Similarly duration of inotropic support to maintain systolic blood pressure > 90-100 mmHg in ICU 56 hours in GPA versus 24 hours in GPB. Postoperative use of diuretics was 100% in GPA vs 58.74% in GPB. No significant difference in control of major arrythmics by IV amiodrone i.e. 8.69% GPA vs 9.09 GPB.

CONCLUSION: Cold blood cardioplegia proves to be effective in myocardial protection as compare to cold cyrtalliod cardioplegia

NOTES

NOTES

Surgery for Hemoptysis

Aamir Bilal, Muhammad Salim, Muhammad Muslim

Institution: **Dept of CardioThoracic Surgery PGMI**
Lady Reading Hospital Peshawar.

AIMS: To determine aetiology of patients presenting with hemoptysis and evaluate their management and outcome.

METHOD: This prospective study included 72 patients; 51 (71%) were males and 21 (29%) were females. Male: female ratio was 2.5:1 Age range was from 7 years to 81 years with a mean age of 36.3 years. All the patients had hemoptysis on presentation while 25 (35%) also experienced dyspnea. Chest radiograph was obtained in all, CT Thorax in 60 (83%) while pulmonary function tests were performed in 68 (94%) patients. Out of 72 cases 09 patients had to undergo immediate surgery, 27 underwent surgery within one week after initial stabilization and 36 were operated upon electively. All patients, except 6 paediatrics cases, had one lung ventilation during surgery.

RESULTS: The mean operative time was 55(±20) minutes. Out of 72 patients 30 had lobectomy, 24 had hydatid cystectomy, 9 had wedge excision, 3 had pneumonectomy and 6 had thoracoplasty. Mortality was 2/72 while morbidity was 6/72 comprising 4 wound infections

(in the emergency group) and 2 each had persistent air leak and empyema. Hospital stay ranged from 7 36 days with mean of 12.6 days. Pathological breakup of the 72 cases was bronchiectasis 30, mycetoma 2, lung abscess 9, hydatid cysts 24, carcinoma 6 and AV

malformation 1.

CONCLUSION: Inflammatory lung disease, especially TB and its sequelae is the commonest cause of hemoptysis. Elective surgery with one lung ventilation after initial stabilization in a well equipped & well staffed cardiothoracic unit (OT & ICU) is a safe option for hemoptysis, not responding to medical management.

Thoracoplasty - An Obsolete or Still Useful Procedure

Aamir Bilal, Muhammad Salim, Muhammad Muslim

Institution: **Dept. of CardioThoracic Surgery PGMI Lady Reading Hospital Peshawar.**

AIMS: To assess role of thoracoplasty for dealing with persistent infected spaces, and hemoptysis in malnourished patients with poor PFT's.

METHOD: Thoracoplasty, a procedure in vogne in 1950's an 60's for tuberculosis was later on abanded because (i) better anti TB drugs (ii) multilating nature. Over the past 7 years out of Hobson's choice we performed 36 thoracoplasties (outer of over 3000 thoracic procedure) of theses there were 24 full thoracoplasties and 12 partial thoracoplasties. The main indications were persistent infected spaces in cachectic patients (21/36), (iii) hemoptysis due to destroyed lung in malnourished patients with poor PFTs 15/36.

RESULTS: Out of 36 cases 33 had TB of which 18 were on 2nd line ATT. there was no mortality and morbidity was 6/36 in the form of a small residual apical space.

CONCLUSION: To conclude, with the resurgence / high prevalence of TB, especially MDR TB, there is still a very select group of cachectic patients with poor PFTs / destroyed lungs / infected spaces, where thoracoplasty may be the only pragmatic and useful option.

Pulmonary Embolectomy iu Acute Pulmonary Embolism-Experience at Aga Khan University Hospital

Asma Munir, Hasanat Sharif

Institution: **Aga Khan University Hospital**

BACKGROUND: Acute pulmonary embolism (which includes massive and submassive pulmonary embolism) continues to have a high mortality rate if left untreated (35%). The clinical presentation may vary considerably, and a large number of patients with pulmonary embolism are still misdiagnosed. Optimal management remains controversial despite advances in diagnosis and therapy including anticoagulation, thrombolysis, catheter embolectomy, and open pulmonary embolectomy.

In the past, open pulmonary embolectomy was reserved for patients with massive pulmonary embolism and severe hemodynamic instability, or who had failure of or contraindication to thrombolytic therapy. Such a second choice indication may alter operative risks or late outcome.

OBJECTIVES: The purpose of this series is to review our experience over the past three years with open pulmonary embolectomy as a modality of treatment for patients with a major pulmonary embolus.

METHODS: All patients who underwent pulmonary embolectomy for acute pulmonary embolism, between 200I - Aug. 2004 were reviewed.

RESULTS: During a 3-year period, four patients underwent emergency pulmonary embolectomy at the Aga Khan university Hospital. All patients were still alive at follow-up of 5- 36 months and were all in good health. No recurrent pulmonary embolism or late clinical symptoms related to embolectomy were observed. One had suffered recurrent deep venous thrombosis.

CONCLUSION: We conclude that emergency pulmonary embolectomy is a viable and effective lifesaving procedure in selected patients with acute pulmonary embolism.

KEY WORDS: pulmonary embolectomy, acute pulmonary embolism

Predictors of Mitral Valve Repair durability in Congenital Mitral Stenosis

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Institution: **The Cleveland Clinic Foundation, Cleveland, OH**

INTRODUCTION: Surgical treatment of congenital mitral stenosis (CMS) is still a challenge. From a cohort of patients with CMS, a study was done to determine patient outcomes, predictors of valve reparability and predictors of durability of valve repair.

HYPOTHESIS: We assessed the hypothesis that mitral valve repair for CMS is safe and durable.

METHODS: From July 1993 through December 2002, 20 patients [median age at operation 18 months (range 2-204 months)] underwent surgical treatment for CMS. Patients with common atrioventricular canal and single ventricle forms were excluded. Seventy five percent had associated anomalies including Shone's complex in 45% and pulmonary hypertension in 60%. The median transmitral gradient was 16 mmHg (range 9-32); mitral stenosis was severe in 12 patients (60%) and moderate in the remainder. Mitral valve repair was performed in 16 patients (80%) and valve replacement in 4 (20%). Repair techniques included papillary muscle splitting (n=9), excision of supravalvular ring (n=8) and commissurotomy (n=6). Twelve patients (60%) required procedures for associated conditions.

RESULTS & CONCLUSIONS: There were no early or late deaths at a median follow-up of 34 months (range 1-95). The presence of more than moderate preoperative mitral regurgitation predicted the need for valve replacement (p=0.02). 6 patients (30%) who underwent mitral valve repair required reoperation (2 early, 4 late); 3 patients underwent a second repair, 3 patients required mitral valve replacement. Actuarial freedom from reoperation at 5 years was 68% (95%CI 57%-79%). Negative predictors of mitral valve repair durability were preoperative pulmonary hypertension (p=0.04) and Shone's complex (p=0.05). Presently, all but 2 patients are in NYHA class I with no more than mild mitral stenosis and/or regurgitation. In conclusion: 1)Mitral valve repair can be done safely in most cases of congenital mitral stenosis. 2) Pulmonary hypertension and Shone's complex may predict the need for reoperation after mitral valve repair. 3) Mitral valve repair is especially useful in treating infants in whom the aim is to preserve the native valve for as long as practical, which delays the almost inevitable, valve replacement.

CRITICAL LOWER LIMBS ISCHEMIA

BRIGADIER (DR) EITEZAZ AHMED BASHIR FCPS

Institution: **Department of General and Vascular Surgery Combined Military Hospital Rawalpindi**

BACKGROUND: A retrospective study was carried out at the Department of General and Vascular Surgery, Combined Military Hospital Rawalpindi from January 1995 to January 2000, to conduct an audit of our policy of aggressive arterial reconstruction in patients with critical lower limb ischemia, so as to determine the success in treatment of these cases in terms of limb salvage and patient survival.

MATERIALS AND METHODS: A consecutive series of 114 cases was studied. All patients were admitted for assessment of an ischemic leg. Pre operative angiography was routinely performed. All patients underwent definitive treatment (bypass surgery, amputation and lumber sympathectomy) within three days of admission. Pre operative risk factors including age, sex, pre-existing diabetes mellitus, presenting symptoms, ankle systolic pressure were evaluated, with there effect on limb salvage and patient survival.

RESULTS: Of the 114 cases included 102 (89.5%) were males. Forty-six patients (40.3%) were diabetic. Revascularization was attempted in 76 limbs, 61 (80.3%) underwent femoropopliteal bypass and 15 (19.7%) underwent femorodistal bypass. Twenty patients (17.5%) with Berger's disease, of the 114 cases included, were treated by lumbar sympathectomy. Eighteen limbs were beyond salvage necessitating amputation. Risk factors had no effect on limb salvage or mortality. Overall mortality was 4% and over all 30-day graft patency rate was 77.7%. One-year graft patency rate was 62.5%.

CONCLUSION: By pursuing an aggressive policy of revascularization, good results can be obtained in terms of limb salvage and survival rates.

ROLE OF V.A.C. IN RECONSTRUCTION OF CHEST WALL WOUNDS

Farid Ahmad Khan, Hamid H Ansari, SM Ammar, Nadeem Yusuf, Shahzad Yunus.

Institution: **King Edward Medical College, & Mayo Hospital, Lahore-Pakistan**

OBJECTIVE: To modify the technique and gadgets of vacuum assisted closure according to the requirements of our setup and assess its efficacy when combined with different reconstructive options in chest wall defects.

METHODS: Open pore foam was used with suction drains and sucker machine(ATMOS)with intermittent negative pressure on thirty cases of chest wall defects, on excisional wounds , sternotomy wounds after cabbage, burn wounds during last two years followed by reconstruction with different flap techniques.

RESULTS: Wounds contracted considerably with less bacterial count in less hostile environment.It made reconstruction relatively easy with different types of flaps.

CONCLUSION: VAC if practiced with the help of reconstructive techniques, can be helpful in our setup for complex reconstruction of chest wall.

SURGERY FOR THE POST INFARCT VENTRICULAR SEPTAL DEFECT: RESULT WITH THE PATCH EXCLUSION TECHNIQUE.

Zahid Khan, Ali Zamir Khan, James Kuo.

Institution: **Southwest Cardiothoracic Centre, Derriford Hospital, Plymouth, UK.**

AIM: To report our experience with pericardial patch exclusion technique for the closure of post infarct ventricular septal defect.

METHODS: Between April 1998 to November 2004, 15 patients underwent surgery for post infarct VSD. Bovine pericardium was used for repair in all the cases.

Data was analysed for the following points: type of VSD, age of the patient, preoperative intra aortic balloon pump, cross clamp and bypass time, ICU stay, hospital stay, morbidity and mortality.

RESULTS:

Anterior VSD repair	8
Posterior VSD repair	7
Preoperative intra aortic balloon pump	12 (75%)
Concomitant coronary bypass grafts	14 (92%)
Cross clamp time (mean)	79 mins
Bypass time (mean)	121 mins
ICU stay (mean)	5.8 days (range 1 to 30 days)
Hospital stay (mean)	13 days (range 6 to 50 days)
Mortality	2 (13.3%)

There was no significant difference in the mortality for anterior and posterior VSD.

CONCLUSION: We conclude that the results with patch exclusion technique for post infarct

VSD closure are satisfactory and easily reproducible.

ATRIAL FIBRILLATION POST CORONARY ARTERY BYPASS GRAFT SURGERY: INCIDENCE, PREDISPOSING FACTORS AND PROGNOSTIC IMPLICATIONS.

Imran Iftikhar, Nadir A Kamal, Waqas Ahmed, Ali Yawar, Naveed Akhter, Mumtaz A Shah, Habib-ur-Rahman

Institution: **Shifa International Hospital, Islamabad, Pakistan**

BACKGROUND: Atrial fibrillation is the most common arrhythmia occurring post cardiac surgery and is associated with significant morbidity, increased overall hospital stay and cost. Anecdotal observation suggests very low incidence in Pakistani patients undergoing coronary artery bypass graft surgery (CABG).

METHODS: A retrospective study of 201 consecutive patients undergoing cardiac surgery at a tertiary care center. Clinical characteristics and peri-operative data was collected & analyzed. Z-test was used for continuous variables and chi-square for categorical variables. Multiple logistic regression analysis was used to determine independent predictors of atrial fibrillation.

RESULTS: Atrial fibrillation occurred in 9 (4.8%) patients undergoing CABG alone, 4 (33.3%) undergoing valve replacement and 2 (100%) undergoing combined procedure. Univariate analysis revealed that female gender and increased left atrial size had significant association with post-CABG atrial fibrillation (P value = 0.03 & 0.01 respectively). In addition, atrial fibrillation was significantly associated with the type of cardiac surgery, valvular surgery patients being at the highest risk (P value = 0.05), and use of dopamine and epinephrine post operatively (P value= 0.03& 0.002 respectively). Multiple logistic regression analysis revealed that increased left atrial size (odds ratio 0.08, 95% CI 0.008-0.99 P value = 0.05) and concomitant valvular surgery (odds ratio 0.89,95% CI 0.79-0.99P value= 0.04)were independent predictors of post CABG atrial fibrillation. Mean hospital stay was significantly longer & overall cost was significantly higher in patients who developed atrial fibrillation (p value = 0.000 respectively).

CONCLUSIONS: The incidence of atrial fibrillation post CABG is extremely low in Pakistani patients. The occurrence of atrial fibrillation, albeit for short duration, is associated with significantly longer hospital stay and higher overall cost. Preventive strategies need to be employed.

PREVENTION OF HYPOTENTION DURING CPB AND THE HIDDEN CAUSES

Nusrat Rizvi

Institution: **Aga Khan University Hospital, Karachi**

AIM: -prevention of accidents is one of the fundamental elements of the perfusionist quality, to prevent the sudden drop of patient's blood pressure (Hypotention) during cardiopulmonary by pass

The practice of a clinical cardio- vascular perfusionist has experienced major changes during cardiopulmonary by pass (CPB) off course Hypotention is a major problem for the perfusionist and a major risk factor for Intraoperative myocardial infraction it is confirm by the literature that sudden drop of the pressure at the time of beginning of CPB is a major cause of the Mayo- car dial infraction

Already a lot of pressure is on the perfusionist because he has to look at all the parameter including body temp, renal function, pumps, suction, vent , Blood Gasses, Blood Flows ,Level ,and a lot more other things to do at this stage if Hypotension accrued What he has to do most of the perfusionist are giving Inotropic Support bolus, some of them increasing blood flow and a lot of different techniques to treat the Hypotention but every thing have some other problems there are some hidden causes of Hypotention and it is necessary for the perfusionist to know about it

And if we could avoid those causes then the event of the Hypotention would not be a big deal for any perfusionist in fact the knowledge of a perfusionist play a major role to prevent the Hypotention during C P B because prevention is better then treatment.

ACUTE ISCHEMIA OF EXTREMITIES MANAGED BY EMBOLECTOMIES - PESHAWAR EXPERIENCE

Sohail Aslam, Taskeen Ahmad, Khalid Rehman, Nayyar Waseem, Hamid Ahmad, Murad Ali, Javed Nawab, Abdul Malik, Abid Aslam Awan, Riaz Anwar Khan, Jalal Khan, Parvez Mannan

Institution: **Dept of Cardiovascular Surgery PGMI Lady Reading Hospital Peshawar.**

OBJECTIVE: To evaluate the outcome of acute embolic episodes in extremities managed by embolectomies.

METHODS: A retrospective study at Department Of Cardiovascular Surgery, Lady Reading Hospital, Peshawar - Pakistan. Sex, Age groups, origin of arterial emboli, site of occlusions, presentation time since onset of symptoms and early postoperative outcome assessed in 80 patients since Jan 1995 to Dec 2002. In all cases diagnosis were clinical. Deaths and amputation rates were compared in early and late presented cases.

RESULTS: There was 39 males and 41 females with age ranged from 13 years to 80 years with mean age of 58 years.42% of patients were more than 60 years of age. 61.44% embolectomies were done in lower limbs. Ischemic heart disease (67.46%) was commonest associated condition. 100% cases had pulse deficit and temperature changes. (97.46%) had history of pain. 65% had rhythm abnormality. There was no significant difference in deaths in early and late presented cases. Where as amputation rate was more in late presented cases.

CONCLUSIONS: Late recognition of acute arterial occlusions results in more amputations as compared to early recognized cases. Underlying cardiac ailments is mainly responsible for mortality in these cases.

SURGICAL EXCISION OF CAROTID BODY TUMOUR (CBT) PESHAWAR EXPERIENCE

Sohail Aslam, Taskeen Ahmad, Khalid Rehman, Nayyar Waseem, Hamid Ahmad, Murad Ali, Javed Nawab, Abdul Malik, Abid Aslam Awan, Riaz Anwar Khan, Jalal Khan, Parvez Mannan

Institution: **Dept of Cardiovascular Surgery PGMI Lady Reading Hospital Peshawar.**

OBJECTIVE: To assess outcome in surgically managed carotid body tumour.

METHODS: Retrospective study of 18 cases of carotid body tumour (CBT) from Jan 1994 to June 2004 at Department of Cardiovascular Surgery, Lady Reading Hospital, Peshawar Pakistan. Age, sex, clinical presentation, investigations, surgical excision and outcome analyzed regarding mortality and morbidity.

RESULTS: 55.55% patients were female. Age ranged from 20 years to 53 years (mean age 33 years). All patients presented with pulsatile neck swelling. Carotid Doppler and Angio done in all patients. All patients underwent surgery, however one had non-resectable tumour, which turned out to be malignant. There was no hospital mortality and no recurrence in excised tumour on 06 months to six years follow-up. About 17% patients had cranial nerve deficits postoperatively.

CONCLUSIONS: Most of CBT are benign and resectable. Morbidity is mainly due to cranial nerve injuries.

DEVEGA'S TRICUSPID VALVE ANNULOPLASTY STILL A GOOD ALTERNATIVE IN OUR SETUP

Sohail Aslam, Taskeen Ahmad, Khalid Rehman, Nayyar Waseem, Hamid Ahmad, Murad Ali, Javed Nawab, Abdul Malik, Abid Aslam Awan, Riaz Anwar Khan, Jalal Khan, Parvez Mannan

Institution: **Dept of Cardiovascular Surgery PGMI Lady Reading Hospital Peshawar.**

OBJECTIVE: To assess the durability of Devega's repair of tricuspid valve in severe tricuspid regurgitation (TR).

MATERIAL AND METHODS: From January 2002 to December 2003. 22 Devega's surgical repairs of tricuspid valve in severe TR were done either with mitral valve replacement or with Atrial Septal Defect (Secondum Type) repair. Clinical data was retrieved from hospital records and analyzed post-operatively on the basis of NYHA status and echocardiagraphic findings at the interval of 6, 12 and 24 weeks. The durability of Devega's repair was assessed.

RESULTS: Out of 22 Devega's repair, over 80% of the patients having severe TR+3 reverted to no TR and about 20% patients had mild TR post-operatively at the interval of 6 months and the repair was intact on echocardiography.

CONCLUSION: Devega's repair of tricuspid valve in severe TR is a safe & economical procedure in our setup.

VARIABILITY IN LIPID PROFILE BEFORE AND AFTER CORONARY ARTERY BYPASS GRAFTING (CABG)

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Institution: **[1]Department of Biological & Biomedical Sciences, [2]Department of Surgery (Section of Cardiothoracic Surgery), The Aga Khan University Karachi**

ABSTRACT : Monitoring the lipid status of angina patients following coronary artery bypass grafting (CABG) is extremely important to prevent any further cardiovascular events.

AIM: The objective of the study was to investigate changes in total cholesterol, low density lipoprotein (LDL) cholesterol, high density lipoprotein (HDL) cholesterol, and triglycerides in serum of Pakistani patients before, immediately after and 5 days post CABG.

PATIENTS AND METHOD: Serum samples from eleven consecutive Pakistani angina patients undergoing CABG at the Aga Khan University Hospital were analyzed for total cholesterol, LDL cholesterol, HDL cholesterol and triglycerides using kit methods.

RESULTS: Immediately after CABG, there is a sharp decline in the mean levels, of serum cholesterol, LDL cholesterol, HDL cholesterol and triglycerides. However, 5 days post CABG, there is a significant increase in the concentrations of total cholesterol (P=O.O3), HDL cholesterol (P=O.O31) and triglycerides (P=O.OO2). Among the diabetic patients (n=4), the changes in the levels of the above mentioned 4 lipid parameters were not statistically significant. Compared to European patients, Pakistani patients tend to have low levels ofHDL cholesterol « 35mg/dl) and higher levels of triglycerides (> mg/dl) on day 5 post CABG.

CONCLUSION: Since risk of mortality following CABG increases with low level of HDL cholesterol and high level of triglycerides, a close monitoring of the lipid status of Pakistani patients following CABG is necessary to prevent any further coronary events.

KEY WORDS: coronary artery bypass grafting, cholesterol, triglycerides, lipid profile.

IS PALLIATIVE ESOPHAGECTOMY FOR CARCINOMA ESOPHAGUS WORTHWHILE?

S Waqar Ahmed, S Azfer Hussain and Tanveer Ahmad

Institution: **Department of Thoracic Surgery, Jinnah Postgraduate Medical Center, Karachi**

The patients with carcinoma esophagus in our clinical practice present late with advanced disease. The palliative treatment of esophageal carcinoma includes intubation, bypass, dilatation, irradiation and esophagogastrectomy in selected cases. The last has been criticized by some on the basis of high operative morbidity and mortality. To assess the success of this procedure in our institute, we reviewed 25 cases which underwent esophagectomy in last four years from January 2000 to November 2004. The respectability of the tumor was assessed clinically and radiologically with barium swallow and CT scan. Patients who were found to be irresectable preoperatively were not included in the study.

Twenty-two patients had an Ivor Lewis (Right sided Transthoracic Esophagectomy) while 2 had a left sided abdomino-thoracic esophagectomy and one had a McKeown's three-stage esophagectomy. Sites of the carcinoma included mid esophagus and lower esophagus. Although, there was no intraoperative mortality but we had 5 deaths in the perioperative period. The cause of deaths included Myocardial infarction (1), anastomotic leak with sepsis (2), pulmonary edema (3), respiratory failure (1), and renal failure (1).

Other less important complications included intractable atrial fibrillation (1), lung abscess (1), gastric outlet obstruction (3), chest complications (4), esophageal motility problems (5). We had no significant problem of narrowing at the esophagogastric anastomoses.

Some patients were lost to follow up after 4-6 months but in a few cases patients survived over 2 years.

CONCLUSION: In selected cases Transthoracic palliative esophagectomy is a safe procedure if under taken at a specialized center. It improves the quality of life, although it may not influence survival.

EXPERIENCE OF EMERGENCY THORACOTOMY AT DEPARTMENT OF THORACIC SURGERY, JPMC, KARACHI.

SYED AZFER HUSSAIN, SYED W AQAR AHMED

Institution: **Department of Thoracic Surgery, JPMC, Karachi**

OBJECTIVE: To study the indications, presentation and outcome of emergencies thoracotomies.

DESIGN: Random prospective hospital based study.

PLACE AND DURATION OF STUDY: Department of Thoracic Surgery Jinnah Post Graduate Medical Center, Karachi.

MATERIAL AND METHODS: Seventeen patients above the age of twelve years who underwent emergency thoracotomies were included in the study. All patients were male. The most common indication for emergency Thoracotomy was massive and continuing hemothorax secondary to penetrating chest trauma. Morbidity and mortality was low when surgery was carried out within four hours of initial assessment. Younger patients had better recovery. Major post-operative complications included severe systemic infection/septicemia(2) , wound infection(5), wound dehiscence(2). Three patients died.

CONCLUSION: When performed early emergency thoracotomy is a safe life saving procedure. Delay in surgery increased morbidity and mortality. Younger and otherwise fit patients have a better prognosis.

KEYWORDS: Emergency thoracotomy, massive hemothorax, thoracotomty.

BILATERAL INTERNAL MAMMARY ARTERY REVASCULARIZATION- AKUH EXPERIENCE

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Institution: Aga Khan University Hospital, Karachi.

BACKGROUND: The increasing incidence of coronary artery disease and its occurrence in young patients led to the idea of durable revascularization with arterial conduits. The left internal mammary artery has proven beyond any contradiction the long term survival benefit. The use of right internal mammary artery (RIMA) add to this benefit was controversial. Recently it has been shown survival benefit of bilateral IMA beyond the years. In our country younger people are afflicted more and more and should be addressed with maximal arterial revascularization.

OBJECTIVE: To assess the safety and short term complication of the bilateral internal mammary artery revascularization

METHOD: Between January 2003 and January 2005 fourteen patients underwent bilateral IMA grafting at Aga khan university hospital for coronary revascularization. Their charts were reviewed and data was collected regarding their demography, left ventricular (L V) function, pre-op myocardial infarction, co morbid factors and post operative data including cardiopulmonary bypass (CPB) and aortic cross clamp timing, use of inotropes, complications and follow up were recorded.

RESULTS: The age range was 31-61 yrs. The left ventricular (LV) function was more than 40% in all cases. There was no mortality, one patient has positive EET at 2 months post op, in rest of the patient ETT's were negative. Two patient required post operative inotropic support. None of the patient developed cardiac complication. One patient developed diabetes insipidous. In one patient RIMA was stretched and went into spasm and has to be abandoned and replaced with vein graft.

CONCLUSION: Bilateral internal mammary arterial revascularization although very demanding but can be performed safely and satisfactorily in a selected group of patients. The major morbidities are infrequent. The alternate strategy of vein graft should be opted if major compromise is encountered.

Use of 12.5mm moulded PolyVinylethylene hose pipe as traction stent for palliation of dysphagia in advanced / in-operable oesophageal cancer.

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Institution: Nishtar Hospital and Medical College, Multan.

More than 50% patients with oesophageal cancer are in-operable at the time of presentation. Almost all of them suffer from disabling dysphagia. Relief of dysphagia therefore is an important palliative goal in these patients. Most reliable and quick relief of dysphagia is achieved by insertion of some sort of endo-luminal oesophageal stent. Current gold standard for this purpose is self expanding metallic Nittinol stent. These are however very costly (average price per stent is Rs. 75,000) which make them practically un-usable in our patients. Most of the other tube stents cost in the range of Rs. 8000 each but their availability is very unreliable as most of the manufacturers have stopped manufacturing these stents.

In our unit, we use a piece of 12.5mm polyvinylethylene hose pipe tube available commercially at a rate of Rs. 5 per foot. Its top end is funneled by heat moulding which makes it resemble and function like a Mousseau-Barbin tube. Over the past three years we have inserted 39 such stents by traction technique in 27 male and 12 female patients of age range 42 years to 82 years (mean 58 years). We had 4 in-hospital mortalities (10.25%). Of the survivors, 9 were lost to follow up. Remaining 26 patients were followed up for a mean of 5.4 months. 20 died with a mean survival of 4.2 months. 6 are still alive 4 to 13 months after insertion of their stents. During the period of follow up 7 patients presented with stent malfunction. In 1 it was due to slippage of the stent, in 1 due to Tumor over growth causing blockage of stent while in 3 of the patients stent blocked due to food bolus. In 2 patients stent opened spontaneously during admission. In our series, insertion of stent improved the dysphagia score from mean of 4.2 to 2.5.

In conclusion, 12.5 mm Polyvinylethylene garden hose tube can reliably be used as oesophageal stent. It is cheap and is associated with comparable mortality and stent malfunction rates as other tube stents. It also has the advantage that it can be fashioned according to patients need depending upon the level of malignant stricture.

TRICUSPID VALVE REPAIR WITH MITRAL VALVE REPLACMENT

Sohail Aslam, Taskeen Ahmad, Khalid Rehman, Nayyar Waseem, Hamid Ahmad, Murad Ali, Javed Nawab, Abdul Malik, Abid Aslam Awan, Riaz Anwar Khan, Jalal Khan, Parvez Mannan

Institution: **Dept of Cardiovascular Surgery PGMI Lady Reading Hospital Peshawar.**

OBJECTIVE: To assess the clinical outcome of two groups of patients with and without tricuspid valve repair in severe tricuspid regurgitation during mitral valve replacement.

MATERIAL AND METHODS: This study was conducted during July 1993 to Dec 2003 to asses the clinical outcome of patients with and without tricuspid valve repair in severe tricuspid regurgitation (TR) during mitral valve replacement (MVR). Clinical data was retrieved from hospital records of the patients who underwent mitral valve surgery with and without repairing tricuspid valve in severe TR. Patients were divided into two groups i.e. July 1993 to December 2001 (GPA) where TR was not repaired, from Jan 2002 to Jun 2004 (GPB) where severe TR was repaired along with MVR. Data was analyzed in both groups regarding age, sex, NYHA status, echo-cardiographic findings, total cardiopulmonary bypass time, cross clamp time, electrical cardioversion after declamping, peri-operative arrythmias, use of inotropes while coming off bypass. Post-operatively duration of inotropic support, ventilatory support, diuretics, antiarrythmic drugs, mortality and morbidity was assessed. Postoperative follow up was assessed by NYHA status, echo findings at six, twelve and twenty four weeks post-op.

RESULTS: There was no significant difference in terms of cross clamp time, bypass time in both groups whereas spontaneous recovery of cardiac rhythm after declamping GPA (7.69%) versus GPB (36.36%). Need for electrical cardioversion after declamping GPA (92.30%) versus GPB (58.74%). No difference in use of inotropes while coming off bypass or use of pacing in both groups.

Operative mortality was 3.86% in GPA versus zero in group B. Duration of mechanical ventilatory support was more in GPA than GPB, 19 hours vs 5.4 hours. Similarly duration of inotropic support to maintain systolic blood pressure > 90-100 mmHg in ICU 56 hours in GPA versus 24 hours in GPB. Postoperative use of diuretics was 100% in GPA vs 58.74% in GPB. No significant difference in control of major arrythmias by IV amiodrone i.e. 8.69% GPA vs 9.09 GPB.

CONCLUSION: Severe tricuspid valve regurgitation repair during mitral valve replacement is a better option.

INVOLVEMENT OF CARDIAC PERFUSIONIST IN LIVER TRANSPLANT

Nusrat Rizvi

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The role of a cardiac perfusionist in multidisciplinary Hospital is different then the role of a perfusionist in isolated cardiac center, in a cardiac center a perfusionist is busy with Cardiac operating room and occasionally with the cathlab. While in multidisciplinary hospital perfusionist have interaction with the Other sub especially like blood cell saver for other surgical team lab chili with I A B P, Involvement in Neuro surgical cases Blood gasses Service for more revenue, working with different surgical teams for these reason when Sindh Institute of urology. (S I U T) decided for liver transplant they started to search for a cardiac perfusionist of a multidisciplinary Hospital, then they contacted us, and finally we involved in dog lab for Experiment then deeply involvement in first human transplant.

The experience of involvement of a perfusionist in a different hospital, with different uro-surgeon and different surgical team was unique for us.

The purpose of this paper is to discus development in perfusionist technology.

Tetrology of Fallot in advanced age

Prof Dr Mustafa Paç

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Cardiovascular Surgery Department
Türkiye Yüksek Ihtisas Hospital

Tetrology of Fallot in advanced age is associated with various myocardial and multisystemic problems. Right ventricle working with high afterload transfoms some myocardial muscle changes. Because of these reasons Tetrology of Fallot in advanced age carries higher risks compared with the new-born period in terms of morbidity and mortality rates. In this presentation we undertook the point out our surgical experience regarding to this matter.

We perform 202 tetrology of Fallot patients in advanced age in Türkiye Yüksek Ihtisas Hospital. The diagnosis of the patients were made either by echocardiography or cardiac cathaterization (In some patients we used both diagnostic methods). The mean age of the patients were 14 years. Of these patients 68.7 % were male and the remainigs were female. The mean ejection fraction was 66.4±8. The mean cross-clamping time was 64.2±25 min. The operational mortality was 7.3 %. The occurrance rate of low cardiac output was 10.5 % in the intensive care unit. The inotropic support was used in 14.5 % of the cases.

Turkey as a devoloping country can not efforterly diagnosis because of the socioeconomical factors. We believe that early diagnosis of the patients having congenital heart disease is of vital importance. However clinical findings of adult congenital heart disease and also operative results must be known by all of us. To reach this target medical education and health organisation must be replanned. The diagnostic age must be swithched to new born period.

ROSS PROCEDURE: EARLY RESULTS AND EXPERIENCE

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BACKGROUND: The Ross procedure has gained popularity in recent years due to the advantage of the absence of anticoagulation, autograft growth potential and minimal long term complications in comparison to mechanical aortic prostheses.

PATIENTS AND METHODS: From March 1998 to August 2004, 156 patients underwent the Ross procedure at the Institute of Cardiovascular Diseases, MMM, Chennai. The mean age was 33.5 years and there were 112 males and 44 females. Sixty-nine patients had aortic regurgitation (AR); 24 had aortic stenosis (AS) and 64 had combined AS/ AR. 3 patients had associated CAD. 7 patients had infective endocarditis of which 3 were operated on an emergency basis. The RVOT was reconstructed using a Pulmonary homograft (n=154) and aortic homograft (in 2 patients). 154 patients had root replacement technique and 2 patients had inclusion technique. Associated procedures performed included mitral valve repair in 7 patients, VSD closure in one patient and CABG in 3 patients. 4 patients required additional vein grafts after completion of procedure due to ECG changes. 6 patients expired in the hospital. At a mean follow up of 3.8 years, 148 patients were asymptomatic and 6 patients presented with AR (5 patients in grade II AR; one patient in mild AR). 154 patients had normally functioning pulmonary homograft and 2 patients presented with severe pulmonary stenosis. One patient with distal anastomotic stenosis underwent successful balloon dilatation. The other patient, the youngest in this series, underwent replacement of pulmonary homograft with decellularized xenograft due to accelerated calcification and stenosis of the pulmonary homograft. There was no late mortality in this series and 96% of patients were in NYHA class I.

RESULTS: Ross procedure is a good option for young adults requiring aortic valve replacement with proven advantage and has low morbidity and mortality.

Surgery for Multidrug-resistant Pleuropulmonary Tuberculosis (MDRTB)

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Institution: **Mayo Hospital, Lahore**

The purpose of our study was to analyze current indications for surgery in multidrug-resistant pleuropulmonary tuberculosis (MDRTB).We present our experience with MDRTB patients presenting with indications for surgery between 2002 and 2004.

MATERIAL AND METHODS: The indications for surgical intervention included 13 cases of cavitary lesion, destroyed lung 8 cases, tuberculous empyema 7 cases, hemoptysis 6 cases, pulmonary aspergilloma 6 cases and bronchiectasis 4 cases. All patients were confirmed cases of MDRTB. Eight patients with tuberculosis were resistant to all first line drugs.

RESULTS: The techniques utilized included decortication with or without thoracoplasty in 7 cases, lobectomy in 19 cases, bilobectomy in 9 cases, pneumonectomy in 8 cases, and extrapleural plombage in one case. In 5 patients (11.3%), two procedures were performed, and in one case, 3 procedures. In 4 cases (9%) there was wound infection. There was a mortality rate of 4.5% (2 cases).

CONCLUSIONS: In our experience, surgery in the treatment of MDRTB is indicated to resolve sequalae or complications, since cases of multidrug-resistant TB can be managed pharmacologically. The morbidity and mortality rates in our series were acceptable.

KEY WORDS: Multidrug-resistant tuberculosis (MDRTB), Thoracotomy, complications.

AORTIC VALVE DISEASES AND ITS SURGICAL TREATMENT

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Institution: **RSSC named after V.Vahidov, Tashkent, Uzbekistan**

THE PURPOSE of research was to estimate results of aortic valve at rheumatic heart diseases.

MATERIAL AND METHODS: Since 2001y. were executed 42 protesis of aortic valve at its rheumatic defeat. Men - 36, women - 6, at the age of 35,7±11,8 years. All patients concerned to III-IV FC on NYHA. 29 patients had insufficiency of aortic valve, 13 had combined aortic defect with prevalence of a stenosis . One-folding artificial limbs have been implanted to 27 patients ("Ëèêñ20" - 2, "Ëèêñ22" - 8, "Ëèêñ24" - 12, "Ëèêñ26" - 3, "Ÿìèêñ25" - 2), two-folding to 9 patients ("Êàðáîíèêñ22"- 1, "Êàðáîíèêñ24" - 4, "Êàðáîíèêñ26" - 2, "Ìåäèêà23" - 1, Carbomedics23 - 1). To 6 patients are implanted bioartificial limbs "Carpentier-Edwards" firms Baxter ("19-1, "21-1, "23-4). Time bypass has made 110,8±44,3 minutes, occlussion of aorta 80,9±32,9 minutes, temperature of cooling 30,8±2,0 C. In 38 cases it is executed selective cardioplegia in coronary arteries, in 4 cases retro cardioplegia through a coronary sine.

RESULTS OF RESEARCH: The result of operation of 38 patients is recognized satisfactory. Hospital lethality has made 4,3 % (2). At two patients after the basic stage, interoperated, jamming a mechanical artificial limb that has demanded repeated pressing of aorta and re-implantation a biological artificial limb has been marked. In 2 cases the technique widening a fibrous ring on *Manouguian-Seybold-Epting* has been executed. In 14 cases are implanted artificial limbs of small diameters "Carpentier-Edwards" ¹19 - 1, "Ëèêñ¹20-2", "Carpentier-Edwards" ¹21 - 3, "Ëèêñ¹22" - 8. On echocardiography it is marked that at these patients peak protesis the gradient after operation has made on the average 35,1±9,5 m.Hg. At patients implanted artificial limbs more than 23 mm the peak gradient was equaled 21,3±5,5 by m.Hg.

CONCLUSION: High transaortic gradient on implanted artificial limbs demands performance of plastic operations on a root of an aorta. At a narrow fibrous ring of an aorta it is necessary to carry out one of methods ðàñòî÷êè a fibrous ring.

RESULTS OF TREATMENT OF BRADIFORMIC INFRINGEMENTS HEART RHYTHM

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Institution: **RSSC named after V Vahidov, Tashkent, Uzbekistan**

THE PURPOSE OF RESEARCH: To sum up the results of surgical treatment of patients with bradioarhythmic form of infringement heart rhythm .

MATERIAL AND METHODS: Results of surgical treatment of bradioarhythms for the period 1975 - 2004 are investigated .1770 patients at the age of 7 till 86 years whom was carried out an implantation of electrocardiostimulator (ECS) were observed. From them, 1479 (1t group) had ÀÂ blockade II or III degree, 291 (2d group) had a syndrome of weakness of sinus nodus.

RESULTS: Among patients of 1t group 632 (42,7 %) had Morganyi-Adams-Stocks (MAS) attacks or its equivalents, that demanded an implantation of ECS in emergency order from the first time of receipt in clinic. 26 of them were made temporary andovazalic cardiostimulation in conditions of reanimation and ICE: 23 - with full ÀÂ blockade and MAS attack ; 12 with a sharp heart attack of the myocardium, complicated with full ÀÂ blockade. After stabilization of a condition was carried out an implantation of constant ECS to these patients. To the other patients operation was carried out(was spent) in 1or 2 days. In pre-opperation period patients received one of preparations speeding up heart rhythm (atropine). All ECS models produced in Russia (98,7 %) and a number(line) of firm " Medtronik " (1,3 %) were applied. Cardiostimulators were implanted mainly in sub-pectoralic position (97,3 %) with carrying out of an electrode andovazalic (79 %) or miocardialic (21 %). Repeated interventions are executed in 442 cases. The reasons were damages (17,6 %) and a disposition (13 %)of the electrodes, exhaustion of ECS (38,5 %), septic complications (25,9 %). Hospital lethality was 2,3 % (41). Dynamic supervision over patients has shown stably good hemodinamic effect.

THE CONCLUSION: Bradioformic infringements of a rhythm are most frequently met arhythms. Thus presence of MAS attacks or its equivalents represent the greatest risk for the patient and demand emergency implantation of ECS. One of challenges after implantation of ECS are septic complications.

Neglected Vascular Trauma

Prof Arshad Cheema

Institution: **PROF OF SURGERY, MAYO HOSPITAL, LAHORE.**

POSTERS

Pneumonectomy for Benign Lung Disease

Aamir Bilal, Muhammad Salim, Muhammad Muslim, Muqeet ullah

Institution: **Dept of CardioThoracic Surgery PGMI Lady Reading Hospital Peshawar.**

AIMS: This study was done to define morbidity and mortality of elective pneumonectomy for benign lung disease, as well as to recommend safety measures.

METHOD: Thirty six patients received elective pneumonectomy. Male : Female 21 : 15. Age range was 4 months to 72 years. Past recurrent or new pulmonary tuberculosis was seen in 33/36 patients. Thirty one patients had chronic hemoptysis, while 6 had massive hemoptysis while thirty two had end stage destroyed lung. Left : Right ratio was 24: 12. Double lumen endotracheal tube was used in 32 cases. Standard transpleural pneumonectomy was done in all cases with slight head down tilt of the table. Bronchial closure was done in 2 layers with interrupted Prolene 2/0 & 4/0. Single unclamped chest drain was put in all cases and removed after 24 hours.

RESULTS: Thirty day mortality was 1/36 (2.7%). Morbidity included post pneumonectomy BPF 2, post pneumonectomy empyema 3 and wound infection 1. Both broncho pleural fistula and post pneumonectomy empyema were treated by tube thoracostomy initially, while 2 patients subsequently required additional thoracostoma and later space closure. Of these 1 went on to have thoracoplasty.

CONCLUSION: Pneumonectomy proved effective therapy for end stage destroyed lungs with active / recurrent hemoptysis, but post pneumonectomy empyema and BPF are serious complications. Early clamping of the bronchus and avoiding bearing of bronchus reduce morbidity. There is no need to clamp the chest drain, which should be removed after 24 hours.

Surgical Treatment of Pulmonary Tuberculosis

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Institution: **Dept. of CardioThoracic Surgery PGMI Lady Reading Hospital Peshawar.**

AIMS: The purpose of our study was to analyze current indications for surgery in tuberculosis and evaluate the surgical outcome.

METHOD: Total number of cases was 132; M: F 105: 23. Age range was 20 years to 79 years. Mean age was 48.4 years. The indications for surgical intervention included 25 cases of pulmonary aspergillioma, 19 cases of pneumothorax; 16 cases of pulmonary nodes and masses without histological diagnosis, 15 cases bronchiectasis, 12 cases of massive hemoptysis, 12 cases of pleural empyema and 33 cases of other complications. No patients with multi drug-resistant tuberculosis required surgical intervention.

RESULTS: The techniques utilized included lobectomy in 45 cases, pleural drainage in 32 cases, segmented pulmonary resection in 32 cases, surgical procedures on the thoracic wall in 17 cases, pneumonectomy in 10 cases, decortication in 8 cases. In 22 cases two or more procedures were performed on the same. In 36 cases (27.3%) there were complications of which persistent air leakage after pulmonary resection was the most frequent. There was a mortality rate of 5.3% (7 cases).

CONCLUSION: Surgical treatment is indicated for the complication of TB and management of MDR TB.

Diaphragmatic Surgery - An Audit of 54 Cases

Aamir Bilal, Muhammad Salim, Muhammad Muslim

Institution: **Dept. of CardioThoracic Surgery PGMI Lady Reading Hospital Peshawar.**

AIMS: To audit Peshawar experience of 54 cases of Diaphragmatic Surgery in a thoracic unit.

METHOD: Fifty four patients underwent Diaphragmatic Surgery from June 2002 - October 2004. M: F 32 :22 . Age range was 2 months to 72 years with a mean age of 36.3 years. Out of 54, 39 presented with traumatic rupture diaphragm, 12 presented with congenital diaphragmatic hernias and 3 were Eventration. All patients had a posterolateral thoracotomy to reduce abdominal contents and repair Diaphragm. In three cases a marlex mesh was used to repair the diaphragm whilst in all others Prolene was used. Of the 39 ruptured diaphragms. 23 had been undiagnosed previously and been intubated, resulting in gut injury in 9 cases. Out of the 12 congenital hernias 6 had been put on ATT, while 2 out of 3 eventration were also on ATT.

RESULTS: There was one mortality 1/54 (1.85 %). This was an elderly gentleman with left sided chronic herniation, who on reduction was found to have a caecal mass and underwent a colectomy at the same time. Morbidity was 6/54 and comprised wound infection 3, prolonged ileus 1, and re-exploration for bowel perforation 1.

CONCLUSION: Diaphragmatic pathology is often over looked. In trauma cases 23/39 patients had chest intubations done wrongly, resulting in gut injury in 9 cases. In congenital hernia and eventration, again Chest x-ray is wrongly interpreted and patients erroneously treated, including use of ATT, in 8/15 cases. Any retrocardiac shadow, missing diaphragmatic outline or unexplained gas shadows should raise the possibility of diaphragmatic hernia.

CORONARY SINUS PERFUSION FOR MANAGEMENT OF CRITICAL CAROTID AND CORONARY ARTERY DISEASE

HarinderSingh Bedi, Raman Pal Singh, Bhupender Sengar

Institution: **Sigma New Life Heart Institute, Ludhiana, Punjab, India**

OBJECTIVES: A critical carotid artery disease in the setting of a hemodynamically unstable coronary lesion carries the risk of a MI (if the patient deteriorates while the carotid endarterectomy – CEA – is being performed) or stroke (if CPB has to be instituted before the CEA during a combined procedure) . The only way is to stabilize the patient while the CEA is completed. The standard option short of CPB would be institution of intra aortic balloon counterpulsation (IABC) . We describe a technique to reduce ischemia in a patient who remained unstable inspite of preop IABC.

METHOD: A 75 year old presented in post MI cardiogenic shock. He was ventilated and IABC instituted. Echo-doppler examination revealed a LVEF of 0.25 and critical bilateral internal carotid artery (ICA) stenosis. Angiography showed critical coronary artery disease with a 95% lesion in the left and a 75% lesion in the right ICA. At sternotomy the heart was found to be edematous and sluggish . After heparinisation an antegrade cannula was inserted in the ascending aorta and a retrograde coronary sinus cannula was inserted by a standard closed trans-atrial technique. The two were connected together and perfusion of systemic oxygenated blood from the ascending aorta to the coronary sinus started.

RESULTS: There was an immediate improvement in the contractility of the heart and in hemodynamics. This gave time to perform the left CEA. The patient then underwent a triple off pump CABG. He recovered with no neurological deficit.

CONCLUSIONS: Our method of retrograde perfusion is a useful addition to the armamentarium of the cardiac surgeon faced with a hemodynamically unstable patient with critical carotid and coronary disease.

POST CABG TRANSFUSION ASSOCIATED GRAFT VERSUS HOST DISEASE- A FATAL COMPLICATION

HarinderSingh Bedi, Raman Pal Singh, Bhupender Sengar

Institution: **Sigma New Life Heart Institute, Ludhiana, Punjab, India**

OBJECTIVES: Transfusion associated graft versus host disease (TA-GVHD) following cardiac surgery is a rare, possibly under-reported and rapidly fatal complication of blood transfusion. It has not been reported from South-East Asia and so far has never been reported following off pump CABG.

METHOD: A 72 year old man presented with unstable angina. His angiography revealed critical TVD. He continued to be unstable and was taken up for emergency OPCABG X 3 . He required fresh blood transfusion from a first degree relative as he was on antiplatelets, was anemic and had a rare blood group. He was discharged on the 5th postoperative day. He came back on the 21st day with a high grade fever , skin rash, nausea, vomiting and diarrhea. Investigations revealed a severe leucopenia which rapidly worsened. He was started on antibiotics, blood products, gammaglobulins and growth colony stimulating factor. A bone marrow biopsy showed aplastic marrow and a skin biopsy showed features consistent with GVHD (apoptosis, lymphocytic exocytosis and keratinocyte necrosis).

RESULTS: The patient had a rapidly downhill course and died on the 24th post op day. Permission for autopsy was not given and HLA typing of the patient and donor blood could not be done.

CONCLUSIONS: The most important method of preventing TA-GVHD is to avoid blood transfusion. Where this is not possible (preop anemia, antiplatelet therapy etc) then transfusion from related donors should be avoided , and if unavoidable (rare blood group) then the risk-benefit ratio must be kept in mind and the blood ideally should be irradiated. The most important step in early diagnosis is to think of it !!! – in a clinical setting similar to our patient. No specific treatment modality has been uniformally successful . The aim of this case report is to create awareness about this entity and to attempt to establish the true incidence in our sub-continent so that a cost-benefit analysis can be done and guidelines on the irradiation of blood products be set.

KONNO PROCEDURE WITH MVR VIA AORTOTOMY FOR DESTRUCTIVE ENDOCARDITIS WITH LVOTO

HarinderSingh Bedi, Raman Pal Singh, Bhupender Sengar

Institution: **Sigma New Life Heart Institute, Ludhiana, Punjab, India**

OBJECTIVES: The Konno Aortoventriculoplasty is a major procedure for enlarging a hypoplastic left ventricular outflow tract (LVOT) for congenital heart disease or rarely for aortic valve replacement in a patient with a very narrow aortic root. We used this procedure in a patient with a hypoplastic LVOT and destructive uncontrolled endocarditis.

METHOD: A 60 year old man – a known case of 'aortic stenosis' presented with high grade fever with chills and acute exacerbation of preexisting dyspnea on exertion. On examination he was found to be febrile , in gross failure and with features of LVOTO and mitral regurgitation . TEE and cardiac cath revealed a severe LVOTO with a gradient of 100 mm at rest , severe MR , a small LA and vegetations on the anterior mitral leaflet. His blood cultures were positive for Staph Aureus and he was started on appropriate high dose IV antibiotics. However he showed no response and went into heart block. He was taken up for a high risk Konno procedure. On exposing the LVOT the mitral valve (MV) was found to be easily accessible. There were deep pockets of frank pus in the annulus which were thoroughly debrided. The MVR was easily performed through the opened up LVOT. This was followed by enlargement of the LVOT with a patch, AVR and reconstruction of the opened up RV.

RESULTS: The patient was weaned off CPB on moderate inotropes. His hemodynamics improved but he continued to be in sepsis, went into multi organ failure and died.

CONCLUSIONS: The Konno procedure is a viable though surgically challenging technique for radical enlargement of a small LVOT. The MV is easily accessible and any procedure on the MV can be performed without opening the LA (which was small in our patient).

USE OF THE INTERNAL MAMMARY ARTERY IN AN ADULT PATIENT WITH COARCTATION OF THE AORTA

HarinderSingh Bedi, Raman Pal Singh, Bhupender Sengar

Institution: **Sigma New Life Heart Institute, Ludhiana, Punjab, India**

OBJECTIVES: Coronary artery disease and coarctation of the aorta (CoA) may coexist. During CABG in a patient with CoA there is concern that the IMA may be severely atherosclerotic and calcified as previously reported. However there is also the danger of applying a partial occlusion clamp on a friable tense hypertensive aorta if a free graft is used.

METHOD: A 45 year old male presented with unstable angina with gross ischemic changes in the anterior leads. Investigations revealed a severe CoA with a gradient of 90mm Hg and a tight ulcerated ostial LAD lesion. In view of the continuing cardiac instability it was decided to perform a hybrid procedure with CABG via midsternotomy being done first. The LIMA was assessed by palpation. It was found to be grossly dilated and tortous but pliable and free of calcification. It was harvested and was found to have a tremendous flow. The tip was sent for histopathology. LIMA to LAD grafting was performed on a beating heart. On the 4th post op day he was taken for balloon dilatation and stenting of the CoA.

RESULTS: The dilatation and stenting were successfully done with a complete relief of gradient. A LIMA angiogram showed a good anastomosis with an excellent runoff. Histopathology of the LIMA did not show any abnormality.

CONCLUSIONS: While there is concern that in an uncontrolled hypertensive adult with CoA the LIMA is likely to be atherosclerotic and calcified as previously reported – our case highlights the fact that this need not necessarily be the case.

MALARIA IN THE SETTING OF CRITICAL CAD – ANOTHER ABSOLUTE INDICATION FOR OFF PUMP SURGERY

HarinderSingh Bedi, Raman Pal Singh, Bhupender Sengar

Institution: **Sigma New Life Heart Institute, Ludhiana, Punjab, India**

OBJECTIVES: Malaria is still endemic in various parts of Asia. It may not be uncommon to come across a patient with active malaria needing urgent surgery due to unstable coronary anatomy. As it is basically the red cells which get damaged they would be very susceptible to hemolysis if CPB were employed.

METHOD: A 72 year old man presented with post MI unstable angina with preceding fever with chills and rigors. On investigation he was diagnosed to have P falciparum malaria with critical left main stenosis with TVD and moderate LV dysfunction. He was started on antimalarials and his fever was controlled with antipyretics. However he continued to be grossly unstable with ischemic changes in the antero-lateral leads. In view of this emergency CABG was planned. In active malaria it is well known that the RBC are invaded , damaged and altered so that they are more easily destroyed and also have a tendency to cyto-adherence with rosette formation. CPB with its known adverse effects on the hematological system would have been disastrous in the presence of the active malarial pathology.

RESULTS: A triple OPCABG was successfully performed. The patient was extubated within 4 hours and oral antimalarials continued. Blood products were not used. He had no fever postop, his parasitemia cleared and he was discharged on the 5th postop day on continued malarial chemoprophylaxis.

CONCLUSIONS: Malaria or any active RBC infection with an attendant pathology warranting emergency CABG is an absolute indication for off pump CABG.

MITRAL VALVE REPLACEMENT ON A BEATING HEART

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Institution: **Sigma New Life Heart Institute, Ludhiana, Punjab, India**

OBJECTIVES: Cardioplegic techniques carry with them the inevitable sequelae of reperfusion injury. In cases where CPB is unavoidable at present eg mitral valve replacement (MVR) , if the ischemic component can be avoided by keeping the heart beating then reperfusion injury could be eliminated.

METHOD: A 17 year old girl with rheumatic heart disease, severe mitral regurgitation, severe PAH, moderate TR and LV dysfunction presented in NYHA IV. In view of the poor LV function it was planned to perform MVR on a beating heart to preserve ventricular function. Normothermic CPB was established with aortic and bicaval cannulation. A retrograde coronary sinus cannula was inserted by a standard closed technique. With aortic venting the aorta was cross clamped and retrograde unmodified warm oxygenated blood perfusion started simultaneously at 300ml/min keeping the mean coronary sinus pressure at 40 mm Hg. Phosphodiesterase III inhibitor was administered into the coronary sinus to induce vasodilatation. The ECG was continuously monitored for signs of ischemia. After the MVR the aorta was unclamped after deairing and the tricuspid valve was repaired.

RESULTS: Good visualization of the operative field was achieved and the procedure completed without difficulty with the heart continuously beating. The patient did not need any inotropic support and made an uneventful recovery.

CONCLUSIONS: On CPB beating heart surgery is a good option for valvular heart esp in high risk cases. The heart is under more physiological conditions and adverse effects of global myocardial ischemia and reperfusion are avoided.

A SIMPLIFIED METHOD OF STAGED CLOSURE OF THE STERNUM IN THE ICU

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Institution: **Sigma New Life Heart Institute, Ludhiana, Punjab, India**

OBJECTIVES: Open chest management (OCM) and subsequent delayed sternal closure (DSC) is a valuable tool in the management of patients with post cardiotomy life threatening cardiac compression from sternal closure (1.2 - 2.8% adult cases post CABG). The major resistance to the use of this technique is the fear of infection and the concern regarding the logistics of shifting a patient with an open chest with an IABP and inotropes from the ICU to the OT. We present a simplified technique which permits a rapid closure in the ICU.

METHOD: Once the decision for DSC is made , absolute hemostasis is achieved. Sternal wires are passed in a figure of 8 fashion. The ends are left long and are turned into the subcutaneous tissues. The sternal halves are either left apart as such or a paediatric sternal retractor is used to stent the halves apart. A water proof cover is maintained with an Iodrape sheet . Once the hemodynamics stabilize in the ICU (inotropes, TEE assessment, normal CI, good urine output and ABG etc) the decision to close the chest is made. The patient is isolated by vacating the adjacent beds, the AC unit is switched to fresh air cycles with a change of 20 cycles/hr, a mobile OT light is brought in and with all personnel going through routine OT scrubbing and draping protocols the wires are tightened and standard closure performed in the ICU.

RESULTS: The technique has been used successfully by us in 3 cases of post CABG myocardial edema who did not tolerate primary sternal closure.

CONCLUSIONS: We recommend this simple technique of DSC in the ICU.

Introduction to Gambhir Thoracostomy Tube Forceps & Analysis of 100 Cases of Thoracostumy Tube Drainge Procedure

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Institution: **Consultant Cardio Thoracic Surgeon, Shree Birendra Military Hospital, Kathmandu, Nepal.**

ABSTRACT : Gambhir Thoracostomy Tube Forceps is a modified large curved artery Forceps, which has concave grooves at it's foreblades with serration in it's inside foreblades, modified to accommodate the chest tube while inserting inside the pleural cavity.The gap between the fore blades can hold the chest tube firmly even when tips of the fore blades are closed. Gambhir Thoracostomy Tube Forceps make insertion of the chest tube drainage procedure easier, quicker & safer by dissecting technique.

During last 5 years 2054 to 2059 (1998 - 2002) 100 cases of Thoracostomy Tube drainage Surgical procedure were performed under Cardio – Thoracic unit of Birendra Hospital for relief of Medical & surgical diseases.This study included 50 Medical cases referred from Medical department & 50 surgical cases. In medical groups the patients age range from 5 years to 76 years. In surgical group age range from 20 years to 75 years. Of 50 medical cases 20 cases had Tension Pneumo-Thorax, of them 18 due to COPD & 2 due to Pulmonary Tuberculosis. 16 had Acute Empyma thoracic following Pneumonia. 8 cases had Massive pleural effusion, 3 following Tuberculosis & 5 following Malignancy. 6 cases had Hydro Pneumo-Thorax, 4 following rupture Lung Abscess & 2 following rupture Hydatid cyst of lungs.Out of 50 surgical patients under going thoracostomy tube dranage 25 had pnemothorax, 20 had haemothorax & 5 cases had haemo pnemo-thorax. Of 50 surgical patients 40 cases were following burnt chest injury (24 following Road Traffic Accident & 16 following fall from height) 9 cases had performing chest injury, 5 following stab injury , 2 following bullet injury & 2 following Bom blast injury & one case had iatrogenic Pnemo-Thorax following nephrectomy operation.The commonest complication following Thoracostomy tube Dranage procedure was surgical Emplysema due to accidental clamping of the chest tube. In medical groups there was one death (2%) of 76 year old lady with sever COPD with Bilateral Pnemo-thorax.In surgical groups there was one death (2%) of 75 years old man with blast injury chest & COPD.

REVIEW OF THORACIC TRAUMA AT SHREE BIRENDRA HOSPITAL, NEPAL

Col. Dr. Gamkbhir Lal Rajnhandary

Institution: **Consultyant Cardio Thoracic Surgean Shree Birendra Hospital, Nepal.**

ABSTRACT: Nepal is going through war like situation due to insurgency since last few years & the hospital admission due to insurgency related trauma due to bullet injury & Bomb Blast injury has increased. This study will review the patients admitted with Thoracic Trauma during year 2002 at Shree Birendra Hospital. In the year 2002, 646 insurgency related trauma patients admitted in Birendra Hospital. Among 646 casualty patients 42 (6.6%) had Thoracic Injury with Gun shot injury & Bomb Blast injury. Out of 42 Chest Trauma patients 21 (50 %) had penetrating Bullet injury Chest. 17 (40 %) had penetrating Chest injury due to splinters from Bomb Blast Injury, 4 (10 %) had blunt chest injury. Out of 42 Chest Trauma patients 19 (47%) presented with Haemothorax. 5 (12 %) patients had Haemo Pneumo-Throrax & 6(14 %) had open Pnemo-Thorax. 12 (28%) patients presented with chest wall injury. There were 8 (19 %) patient with diaphragmatic Tear. Out of 42 patients 15 (35 %) required Thoracostomy. Tube drainage. 15 (35%) required Emergency Thoracotomy & 12 (30 %) required wound debridement foreign body removal. There was 1 (2.5%) death due to poly Trauma.

LONG TERM PLEURAL CATHETER FOR RECURRENT MALIGNANT PLEURAL EFFUSION

Rizwan Qureshi, Sandra Collinson, Roy Powell

Institution: **Department of Thoracic surgery Royal Devon & Exeter Hospital Exeter United Kingdom.**

AIMS / OBJECTIVES: To evaluate our experience with long term pleural catheter for recurrent malignant pleural effusion.

METHOD: 127 patients underwent thoracoscopy for recurrent malignant pleural effusion over a period of three years. 52 of these patients (41%) with "Trapped Lung" were managed by insertion of long term pleural catheter (pleur X Denver Biomedical). Mean age was 66 (42-89) years. The commonest diagnosis was carcinoma breast (n = 20) .Drainage was performed frequently to encourage pleurodesis (drainage <10ml). The catheter was removed after achieving pleurodesis.

RESULTS: 43 (83%) patients had previous palliative interventions. There was compliance with treatment in 50 (97%) patients. Symptomatic relief was achieved in 49 (95%) patients. Mean MRC dyspnoea score improved from 3.0 to 1.9. P = <0.001, Spontaneous pleurodesis occurred in 25 patients (49%) whose catheter was removed between day 30 and 255 (mean 93.8) days. Complications occurred in 7 patients (13.5%): catheter blockage (n=2), surgical emphysema (n=2), cellulitis (n=2), loculated effusion (n=1). There were no deaths related to catheter insertion. There were 4 deaths before 30 days (a hospital mortality of 9.5%), three from disease progression and one from pulmonary embolism. Mean length of stay was 3 (1-16) days. Median survival was 126(10-175) days.

CONCLUSIONS: Long term Pleural catheter provides effective palliation for recurrent malignant pleural effusion.

SURGICAL EXPERIENCE IN THE MANAGEMENT OF SPONTANEOUS PNEUMOTHORAX

Rizwan Qureshi, Ann Nugent, Richard Norton

Institution: **Department of Thoracic surgery Walsgrave Hospital Coventry United Kingdom.**

AIMS/OBJECTIVES: To analyse and compare the efficacy of Video Thoracoscopic pleurectomy (VTP) and open pleurectomy (OP) as a therapeutic, patient friendly modality for primary (PSP) and secondary spontaneous pneumothorax (SSP)

METHOD: Fifty seven patients, 36 males and 21 females were studied over a period of 3 years. Thirty one patients underwent OP with a median age of 37 years while VTP was carried out on 26 patients with median age of 40 years.The operative time, amount of analgesia used on the first five days, the duration and drainage of chest tube, complications, hospital stay and recurrence rate were compared.

RESULTS: VTP was the main modality used for PSP (81% vs24%). However, SSP was mainly managed with OP (75% vs 20%). The median operative time was significantly longer in OP group (72,4 vs 55 minutes p = 0.005). The amount of analgesia required in the first five days was significantly more in OP group (108.03 mg vs 46.92 mg, P= 0.02). Chest drainage was significantly more in OP group (102.14 ml vs 652.80 ml, p=0.04) However, chest drain duration, complications and hospital stay had no significant difference. There were 3 (5.27%) recurrences in VTP group which were successfully managed with OP.

CONCLUSIONS: We conclude from our experience that

·Thoracoscopic pleurectomy is an appropriate modality *to* treat uncomplicated especially PSP.

·However, open pleurectomy is a viable alternative in complicated especially SSP and re-cfofor recurrence of SP.

VENTRICULAR SEPTAL RUPTURE (VSR) A CONTINUING CHALLENGE

Dr. Khalid Rasheed, Dr. Munir Ahmad, Dr. Umair Aslam, Dr. Tamkeen Pervez.

Institution: **Department of Cardiac Surgery, Shifa International Hospitals Islamabad, Pakistan.**

INTRODUCTION: Acquired Ventricular Septal rupture is an uncommon but life threatening complication of AMI that must be regarded as a bona fide cardiac surgical emergency.

INCIDENCE: The incidence of VSR before reperfusion therapy was very high and now with reperfusion therapy the incidence has come down to 0.2 % (GUSTO-I trial). Post MI VSR treated conservatively has a high mortality as compared to early surgical intervention.

OBJECTIVE: The purpose to present these cases is to determine the outcome of surgical repair of VSR.

METHODS: Two cases with VSR who presented to our center were studied (mean age 60±5 years). They presented in similar fashion with hypotensive shock, stuttering angina and respiratory failure. Both of them had suffered acute MI 7-10 days back and presented to this hospital with a sudden deterioration in their condition. Both patients had evidence of multi-organ dysfunction. On the same day intra aortic balloon pump (IABP) was inserted, inotropes and heparin infusion commenced. 48 hours were given before surgery for the multi-system failure to revert back. Follow-up in these patients was of 3-4 months.

RESULTS: There was no mortality; however one patient had to be re-intubated after surgery for respiratory tract infection.

CONCLUSION: Concomitant coronary artery bypass grafting (CABG) is mandatory to control the added risk of associated coronary artery disease. Secondly the time period between development of post-infarct VSR and surgery greatly determines the final outcome.

Prevalence of Sarcoidosis in isolated mediastinal lymphadenopathy in asymptomatic or minimally symptomatic patients in Pakistan.

Dr. Iftikhar Hussain Khan, FRCS, FCPS (Chest Surgery)

Institution: **Nishtar Hospital and Medical College, Multan.**

Isolated and many a times asymptomatic hilar and mediastinal lymphadenopathy is a common presentation of Sarcoidosis in the western world. Exact prevalence of comparable cases in Pakistan is unknown but is perceived to be fairly low.

MATERIAL AND METHODS: We performed diagnostic mediastinoscopy to obtain lymph node tissue in seven such cases over the last two years. Five were male while two were females with ages ranging from 18 to 37 years (mean=25.4 years). 2 presented with dry cough, 2 with vague chest pain, 1 with mild shortness of breath while 2 were completely asymptomatic and the abnormality came to notice following routine chest X-ray. All the patients had CT scan of the chest but none had Kviem test. Mediastinoscopy was performed through standard supra-sternal transverse neck incision.

RESULTS: 3 patients (2male and 1 female) had non-caseating granulomas consistent with Sarcoidosis. 2 patients had histological features of Tuberculosis, 1 patient turned out to be suffering from Hodgkin Lymphoma while our eldest patient (a male of 37 years) unfortunately proved to have a metastatic adenocarcinoma.

CONCLUSION: Although this is a small study of only seven patients, it shows a surprisingly high incidence of Sarcoidosis (43%) among patients with isolated asymptomatic or minimally symptomatic mediastinal lymphadenopathy, especially in their early adult life. This study used the most direct (as well as the most accurate) method to prove the diagnosis, i.e. tissue histopathology. These results call for a larger study to confirm these findings and to recommend a less invasive and more widely available method of diagnosing Sarcoidosis with confidence in suitable patient population. We believe that this probably should be in the form of a bronchial mucosal biopsy or a transbronchial lung biopsy with a fibro-optic bronchoscope.

WARMED PRIMING VOLUME AT PATIENTS BODY TEMPERATURE AND BENEFITS

Nusrat Rizvi

Institution: **Aga Khan University Hospital, Karachi**

Sudden physiological changes at the time of beginning of cardiopulmonary by pass like Hemodilution, difference of blood flow ,and specially difference of temperature between the patients body and blood oxygenator (priming volume) are the major causes of physiological changes these difference of temp developed micro bubbles and sudden Hypotention, Sudden drop of the pressure at the time of beginning of a cardio Pulmonary by pass (C P B) is the major cause of the myocardial infraction because the myocardial preservation has not been given at this stage,

To prevent the Hypotention during CPB we did a lot of study and literature rivew and during this period a lot of new things are discovered for us and in the result of our study we have started to warm the priming volume prior to C.P.B at the patient body temp 37C

During this period of time we noticed that we were abele to prevent the Hypotention also we noticed that our patients did not required additional dose of cardioplegia on the other hand our patients hearts started beating without diffiblibrator shock after the relising of aortic clamp

During the last 75 Casses we noticed that with the warm priming solution the stability of the perfusion pressure was excellent and at the time of termination of C P B there was no any difference of temperature between the rectal temp nasal temps also we noticed that the extubation time was the shorter then before

ATRIAL MYXOMA - AN AKUH EXPERIENCE

M. Aamir Rehman, Hasanat Sharif

Institution: Aga Khan University Hospital

BACKGROUND: Primary cardiac tumors are a rare entity, with an autopsy incidence ranging from 0.01-0.03%. Nearly half of the benign tumors are myxomas: and majority of the rest are lipomas, papillary fibroelastomas, and rhabdomyomas.

METHODS: Retrospective review of surgical management of the 05 atrial myxomas resected in Aga Khan Hospital during the period 1994-2004. Data was retrieved from patient records.

RESULTS: There were five patients all females. Median age was 48 years. Majority were Lt sided myxomas sited either on the inter-atrial septum or Lt atrial wall. Dyspnea was the most common presenting symptom, followed by the chest pain. All tumors were resected with cardiopulmonary bypass under moderate hypothermia. The average cross-clamp time and bypass' time were respectively 63 minutes and 98 minutes.

CONCLUSION: Advances in Echocardiography and availability of cardio pulmonary bypass machine have transformed treatment of primary cardiac neoplasms from a condition rarely diagnosed before autopsy to a curable disease.

MANAGEMENT STRATEGY IN TRAUMATIC VSD

Syed Shahabuddin, Hasanat Sharif, Shahid Sami

Institution: Aga Khan University Hospital, Karachi

Penetrating cardiac injuries are the most lethal form of trauma. Ventricular Septal defect(VSD) as a result of trauma is rare but not uncommon. The surgical intervention is the only hope and associated with excellent outcome.

We report a case of 35 years old gentleman with low velocity bullet injury resulting in through and through myocardial defect. The patient developed pulmonary edema and refractory hypoxemia. He was taken to operating room and put on cardiopulmonary bypass. He was found to have right ventricular (R V) and left ventricular (L V) defects that were sealed with clot. The bullet was lying in pericardium behind the heart along with clots. He was also found to have a VSD. The VSD was closed with patch and RV and L V defects were repaired. His postoperative course was uncomplicated and he was sent home on 8th postoperative day.

The delay in appearance of symptoms is not uncommon. The magnitude of intracardiac injuries should be suspected clinically by mechanism and trajectory of bullet. Earlier intervention has favorable outcome.

Worsening limited scleroderma of the left hand post radial artery harvesting for coronary artery bypass surgery.

Zahid Mahmood[1] FRCS, Heyman Luckraz[1] FRCS, Ceril Rhys-Dillon[2] MRCP, Peter O'Keefe[1] FRCS.

Institution: [1]Cardiothoracic Unit, University Hospital of Wales, Heath Park, Cardiff UK and [2]Royal Glamorgan Hospital, Ynysmaerdy, Llantrisant, Mid Glomorgan, United Kingdom.

Scleroderma is a rare, chronic autoimmune disease with a prevalence of 30/100,000 [1], and primarily affecting females of the age group 30 to 50 years old. Limited scleroderma is diagnosed whenever there is proximal tight skin [1,2]. About 95% of people with diffuse scleroderma show some early thickening and hardening of the skin, especially of the hands, arms, and face. This is due to increased production of fibrous scar tissue. Usually, the skin on the fingertips tightens first, then progress to the fingers, hands, forearms and upper arms. The skin tightness usually appears on both sides of the arms and is symmetrical.

We describe a case report where a patient with limited scleroderma and positive anti-cytoplasmic antibodies (ACA), developed unilateral worsening of Raynaud's phenomenon and scleroderma after harvesting of the radial artery for coronary artery bypass grafting.

CASE REPORT: A 55-year old woman was referred with a history of moderate angina (CCS grade 3) following a previous Q wave myocardial infarction ten years ago. She had a history of scleroderma for over 20 years characterized by skin changes on her upper arms and thorax with positive ACA antibiodies.

Examination revealed bilateral varicose veins in lower limbs affecting both long saphenous veins. Angiography confirmed severe triple vessel disease with a distal left main stem stenosis.

Allens test for the left radial artery was negative. She underwent coronary artery bypass surgery with total arterial re-vascularisation. Bilateral internal mammary arteries and left radial artery were harvested. Left internal mammary artery was grafted sequentially to diagonal and left anterior descending artery. Right internal mammary artery was grafted to first obtuse marginal branch of circumflex coronary artery. Radial artery was used to bypass the stenosis of the posterior descending branch of right coronary artery. Post-operative course was uneventful and she was discharged home a week post surgery.

At her six weeks post-op outpatient visit, she was complaining of pain in her left hand. Pain was worse in the thumb, index and middle finger.

Examination showed a regular pulse of 68 bpm. Cardiovascular and respiratory system examinations were unremarkable. Left forearm wound had healed well. There was dusky discolouration of the thumb, index and middle fingers. Clinically, capillary return was normal in all the fingers.

Subsequent rheumatological review highlighted worsening Raynaud's phenomenon, affecting left thumb, index and middle fingers with significant progression of scleroderma into inability to grip and make a full fist which is 10 cms (from index finger to distal palmer crease). There was no digital infarction. Over the subsequent visits she made a gradual improvement with physiotherapy and improvement in grip strength.

DISCUSSION: Diagnosis of scleroderma can be difficult. Patients may experience a variety of symptoms. In addition, no single test can accurately and definitely determine a scleroderma diagnosis. Diagnosis is made mostly on clinical grounds. It includes tissue suppleness, swelling, pigmentation, or early vascular changes. Skin biopsy and blood tests for the presence of specific autoimmune antibodies are often performed. Usually the symptoms are systemic and symmetrical.

Limited scleroderma is a rare condition however cardiovascular disease is common in this group of patients. The subgroup of scleroderma patients with positive ACA antibodies is particularly susceptible to severe Raynaud's phenomenon and digital infarction.

In this case radial artery was used as a conduit of choice because of bilateral varicose veins and better midterm patency rate [3,4]. Also radial artery is associated with low morbidity and good functional outcome of the hand. Major hand ischemia is rare. Numbness, paresthesia, infection, hyperthophied scar, and limitation in hand activity is also rare[5].

No previous case reports describe worsening of sceloderma & Raynaud's phenomenon post radial artery harvest in this group of patients. However given their predicted increase risk of digital complications, it is worth considering this risk pre operatively

Illoprost (prostacyclin) can be considered as a therapeutic option for those patients who had failed to improve

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Pulmonary Mycetoma —A JPMC experience

Prof. Syed Fahim-ul-Haq, Syed Waqar Ahmed, Syed Azfer Hussain, Waqar Ahmed.

Institution: Department of Thoracic Surgery JPMC, Karachi

OBJECTIVE: To study the presentation and assess options of management in cases of pulmonary mycetoma

DESIGN: This is a prospective, randomized ongoing hospital based study.

MATERIAL AND METHODS: This study was initiated in October 2001. in the last two years 6 (85.71 %) male and 1 (14.28 %) female patients above the age of 12 years admitted in the department of thoracic surgery JPMC were included in the study. The patients were evaluated for the age, sex, clinical presentation, duration of symptoms and accompanying co-morbid conditions. All (100%)patients presented with cough. Four (57.14 %) had moderated hemoptysis and two (28.57%) severe hemoptysis. Two (28.57%) patients had fever along with hemoptysis and one (14.28%) had chest pain.

Three (42.85%) patients had diabetes 6(85.71%) had pulmonary Koch's. Of these six, five (83.33%) had recurrent T.B. one (14.28%) had a lung abscess. Three (42.85%0 patients had broncheictases and one (14.28%) had bullous disease.

Monads sign was present in all (100%) cases on CXR and CT chest. All (100%) patents had cavitatory pulmonary lesion along with fungus ball in cavity evident on CT scan chest. Four (57.14%) patients had complex and three (42.85%) had simple diseases. Three (42.85%) had left upper lobe lesion and four (57.14%) had right upper lobe lesion. Antifungal drug was given to all (100%) patients. Four (57.14%) underwent surgery (segmentectomy).

RESULTS: All (100%) cases were diagnosed as mycetoma lung on CXR and CT scan chest. Four (57.14%) patients underwent surgery successfully. There was one death due to massive MI post operatively.

CONCLUSION: Fungal infection of the lung is an uncommon disease but an increase an incidence has been observed. All the patients in this series, so far, had pulmonary Koch's. 85% of the patients had recurrent tuberculoses. Mycetoma lung is an opportunistic infection occurring in performed cavities. If the initial pulmonary infection is treated properly mycetoma lung can be prevented. Surgeries carries a high morbidity (74%) and mortality (43%) rate. Antifungal drugs help in reducing symptoms morbidity and mortality.

KEY WORDS: Mycetoma lung, pulmonary aspergillosis, fungal infection lung.

SURGICAL MANAGEMENT OF SPONTANEOUS PNEUMOTHORAX

Brig Muhammad Sultan Muzaffar, Major Farhan.

Institution: Combined Military Hospital Rawalpindi, Pakistan

AIMS AND OBJECTIVES: To share the experience of different surgical modalities in spontaneous pneumothorax and their results

MATERIAL AND METHODS: A total of 47 cases of pneumothorax were received in department of thoracic surgery of CMH Rawalpindi, in the last three years from Jan 200 I to Jan 2004.There were 31 males and 16 females. The age range was from 16 years to 77 years. The etiology was primary spontaneous pneumothorax in 21 cases. Secondary spontaneous pneumothorax was in 26. 10 had tuberculosis, 13 cases had corp while 3 cases had underlying malignancies.

The modalities of treatment required ranged from chest intubation followed by surgery in those cases in which the air leak was persistent beyond seven days or associated with an underlying cause requiring surgery. The operative approach included VATS or open surgical techniques. The procedure carried out included apical stapling of bullae, bullectomy, mechanical and chemical pleurodesis, apical and total pleurectomy, underlying lung resection, pleural space reduction by thoracoplasty or muscle transposition.

RESULTS: The chest intubation was successful in 20 cases with expansion of lung. The rest required surgical intervention. Apical stapling was done in II cases with mechanical and chemical pleurodesis.8 cases required closure of bronchopleural fistula with coverage by intercostals flap in 3, extra thoracic muscle flap closure in 4 and pleural flap in one. Open drainage was selected for those with underlying malignancy arid those with poor general in 5 cases. Lung resection was required in 4 cases.

CONCLUSION: Spontaneous pneumothorax is a disease of varied etiology. The treatment depends on the underlying cause. Most cases respond to chest intubation. Non responding cases or recurrent cases of primary spontaneous pneumothorax require surgery with VATS or open apical stapling, bullectomy, and pleurodesis or pleurectomy. Those with an underlying disorder, associated empyema require assessment of the general condition and the treatment for each case has to be tailored according to the requirements.

HYDATID DISEASE OF THE LUNG

Brig Muhammad Sultan Muzaffar, Major Asif

Institution: Combined Military Hospital Rawalpindi, Pakistan

AIM: To discuss various presentation and treatment of hydatid disease of lung

MATERIAL AND METHODS: The period of study was from Dec 2000 to Dec 2004.There were 12 cases in all. The mean age of presentation was 16 years. There were 8 males and 4 females. The cysts were discovered incidentally in 3 cases. Rupture into bronchus was in three cases. Rupture into the pleural cavity was found in one case. Secondary infection with abcess formation in three cases. Direct extension of liver cyst into the right middle lobe was found into one case. Rupture of liver cyst into pleural cavity was in one case. There was one concomitant liver cyst in one such case. There was definite history of contact with canines in four cases. The cyst involved the right lower lobe in 6 cases. Right middle lobe in one case, both right upper and lower lobe in one, and left lower lobe in four cases. The procedures included removal of cyst, lung resection and decortication. Concomitant, removal of liver cyst was done in two cases, one with right thoracoabdominal and other with a separate thoracic and abdominal operation. The scolicidal agents used were 20% hypertonic solution and 1% povidone iodine solution.

RESULTS: There were complications of empyema and bronchopleural fistula, atelectasis, and minor wound infections. There was no post operative death.

CONCLUSION: Hydatid cyst of the lung can present incidentally or with one of the complications. The results of surgical treatment of hydatid disease are good.

HYDATID DISEASE OF THE LUNG

Brig Muhammad Sultan Muzaffar, Major Asif

Institution: Combined Military Hospital Rawalpindi, Pakistan

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MATERIAL AND METHODS: The period of study was from Dec 2000 to Dec 2004.There were 12 cases in all. The mean age of presentation was 16 years. There were 8 males and 4 females. The cysts were discovered incidentally in 3 cases. Rupture into bronchus was in three cases. Rupture into the pleural cavity was found in one case. Secondary infection with abcess formation in three cases. Direct extension of liver cyst into the right middle lobe was found into one case. Rupture of liver cyst into pleural cavity was in one case. There was one concomitant liver cyst in one such case. There was definite history of contact with canines in four cases. The cyst involved the right lower lobe in 6 cases. Right middle lobe in one case, both right upper and lower lobe in one, and left lower lobe in four cases. The procedures included removal of cyst, lung resection and decortication. Concomitant, removal of liver cyst was done in two cases, one with right thoracoabdominal and other with a separate thoracic and abdominal operation. The scolicidal agents used were 20% hypertonic solution and 1% povidone iodine solution.

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GIANT THYMOLIPOMA- A RARE ENTITY

Dr.Ali Raza Uraizee, Dr.Jawed Memon

Institution: **Department of Cardiothoracic Surgery**
Liaquat National Hospital, Karachi

A forty years old lady, resident of Balochistan presented to our outpatient clinic with complaints of, pain in the right side of the chest and progressive shortness of breath .There were no comorbids and her past medical history was unremarkable. On examination, she had absent breath sounds on right side. Her liver was shifted downwards. Her Chest roentgenogram and CAT scan revealed, homogenous consolidation involving right lower and mid zone of lung showing hyper dense vessels with mediastinal shift towards the left. Peroperatively, it was found out to be a *huge encapsulated (5 kg) mass*, densely adherent to anterior, posterior, lateral chest and diaphragm. Excisional biopsy was done. Histopathology reported it to be a ***Giant Thymolipoma.***

Giant Thymolipoma is rare and slow growing tumors. Its incidence is 2-9% .Few cases have been reported in the literature. A poster regarding its presentation in view of recent literature will be presented.

KEY WORDS: Thymolipoma; Thymic tumor

TOTAL CORRECTION OF TETRALOGY OF FALLOT AFTER PERCUTANEOUS COILING OF MAPCAs.

M Ziaur Rahman, GH Rasul, M Hossain, M Sharifuzzaman, NAM Momenuzzaman, J Kabir.

Institution: **National Heart Foundation Hospital and Research Institute.**

AIMS / OBJECTIVES: To achieve anatomical and functional correction in a thirteen years old boy with Tetralogy of Fallot (with severe pulmonary stenosis) but good sized Pulmonary arteries. Two large MAPCAs found supplying the lower and mid zones of the right lung.

METHOD: Intervention was staged with coil embolization of the MAPCAs done percutaneously followed by total correction of the tetralogy of fallot under hypothermic cardiopulmonary bypass.

RESULTS: Postoperatively the child was doing well clinically. There was no residual pulmonary gradient. Follow up is complete to date.

CONCLUSIONS: The case is discussed with particular attention to the nature and management of MAPCAs, and this is a good way to achieve total correction of TOF with MAPCAs.

1ST HEART SUMMIT OF EMERGENT COUNTRIES

28TH MARCH 2005

CRYSTAL HALL A

PEARL CONTINENTAL HOTEL, LAHORE. PAKISTAN

CLINICAL CARDIOLOGY
9:00 AM-10:40 AM

Panel of experts: Kanu Chatterjee, Adolfo Bellosillo, Syed Karamat Ali Shah, Abdul Hafeez Khan, Nazeer Memon, Shahbaz Qureshi.
Moderator: Dr. Amber Malik

Asim Cheema (Canada)
Finding vulnerable plaque: are we there yet?

HK Chopra (India)
LMWH in ACS – From Clinic to Cath.

Azfar Zaman (UK)
Management of Acute Coronary Syndrome.

Kanu Chatterjee (USA)
How should we manage Cardiogenic shock complicating acute coronary syndrome?

Manotosh Panja (India)
High Sensitive C reactive Protein (hs-CRP), role in coronary artery disease.

Ozlem Soran (USA)
The Role of Enhanced External Counterpulsation in Coronary Artery Disease and Heart Failure Management.

MONDAY MARCH 28, 2005
CRYSTAL HALL A

ACS and LMWH from Clinic to Cath

Dr. H.K.Chopra

Institution: **Head Department of Cardiology Moochand Hospital, Visiting Cardiologist to Apollo, MHI, EHI. Director Heart Care Foundation of India. Editor in Chief JIAE, JCMI, Echo India.**

ACS (Acute Coronary Syndrome) is a major public health problem throughout the globe with very high morbidity and mortality. The mortality rate is 10% at 3 months and 17% at 2 years and sudden cardiac death 8% to 16% at one month. The Diagnostic, Prognostic and Therapeutic approach of ACS has dramatically advanced from clinic to cath in last few years. It is evident by various clinical Trials that LMWH is useful in stabilizing the vulnerable plaque in ACS by reducing the high sensitivity of CRP, Interleukin 6 and increasing Nitric Oxide levels. The data from CAPTURE, TIMI 11b, NICE (1), (3), (4), MULLER, ESSENCE, FRISC, FRIC, FRAXIS, ARMADA, EVET, INTERACT, ACUTE, CRUISE and SYNERGY studies will be presented. It is concluded that LMWH in ACS has tremendous potential in reducing the morbidity and mortality and can be used effectively from clinic to cath before, during and after PCI with or without Glycoprotein IIb, inhibitors.

HOW SHOULD WE MANAGE CARDIOGENIC SHOCK COMPLICATING ACUTE CORONARY SYNDROME?

Kanu Chatterjee, FRCP (Lond.), FRCP (Edin.), FCCP, FACC, MACP

Institution: CHATTERJEE CENTER FOR CARDIAC RESEARCH, UNIVERSITY OF CALIFORNIA, SAN FRANCISCO, USA.

Cardiogenic shock is defined as systolic blood pressure less than 90 mm Hg with evidence of hypoperfusion and cardiac dysfunction. Hemodynamics are characterized by a cardiac index of less than 2.2L/min/m^2 and a pulmonary capillary wedge pressure (PCWP) of higher than 18 mm Hg. ST-elevation myocardial infarction (STEMI) is the commonest cause, and a much less common cause is non-ST segment elevation myocardial infarction/unstable angina (NSTEMI)/UA. However, 30-day mortality in STEMI (63%) and in NSTEMI (73%) is very similar. In cardiogenic shock, left ventricular systolic and diastolic dysfunction contributes to the hemodynamic abnormalities.

Early and adequate reperfusion therapy is essential to improve prognosis. Percutaneous coronary intervention (PCI) with stent is a preferable procedure for recanalization of the infarct-related artery. Adjunctive therapy consists of the use of antiplatelet agents (aspirin, clopidogrel, GPIIb/IIIa antagonists), antithrombotic agents, Intra-aortic balloon pump (IABP), vasopressors, diuretics, and inotropic agents. Revascularization therapy within 12 hours of the onset of shock may improve prognosis (13 lives saved per 100 treated). In the "SHOCK" trial, 30-day mortality in the revascularization group (n=152) was 46.7%, and in the medical group (n=150) was 56% (P=0.11). The 6-month mortality was 50.3% and 63.1% (P=0.027). Unsuccessful PCI is associated with much higher mortality (83%) compared to that of successful PCI (36%). The role of new supportive therapies such as no-synthase inhibitors, levosimendan, GIK, and cool-shock therapy are being investigated presently.

The incidence of cardiogenic shock due to severe mitral regurgitation complicating acute coronary syndrome is about 10%. The in-hospital mortality with valve surgery is 40% and that with medical therapy is 71%. Early surgery is recommended for patients with severe mitral regurgitation. The incidence of ventricular septal rupture complicating acute coronary syndrome is .05%. The magnitude of left to right shunt is usually large (pulmonary/systemic flow – 2.6 ± 1.7). Although the risk of surgical repair is high, surgery is still recommended as mortality with medical therapy is almost 100%. The role of catheter-based closure of the ventricular septal defect for temporary treatment is being explored.

HS-CRP AND CORONARY ARTERY DISEASES

Prof Manotosh Panja

Institution: DEPARTMENT OF CARDIOLOGY , INSTITUTE OF POST GRADUATE MEDICAL EDUCATION AND RESEARCH, SSKM HOSPITAL , KOLKATA , INDIA

The advancement in the understanding of pathophysiology of atherosclerotic vascular disease have come new insights regarding potential indicators of underlying atherosclerosis and cardiovascular risk. The role of inflammation to atherogenesis has attained increased recognition and attention has focused on several key mediators and novel markers of the inflammatory process, including acute phase reactant C reactive protein. High sensitive assay for CRP (hs-CRP) have now been developed and able to detect mild elevation of hs-CRP within normal range. Over the last decade various studies proved that mild elevation of hs-CRP and cardiodiovascular risk among those without apparent clinical cardiovascular disease and those for whom the focus is on secondary prevention. The data have revealed that interaction between baseline concentration of hs-CRP and the efficacy of common pharmacological therapies in primary and secondary prevention, suggesting not only that it may modify the increase risk associated with elevated hs-CRP but also that inflammatory markers may be useful in targeting preventive therapies.

THE ROLE OF ENHANCED EXTERNAL COUNTERPULSATION (EECP) IN CORONARY ARTERY DISEASE AND HEART FAILURE MANAGEMENT

Ozlem Soran, MD, FACC, FESC

Institution: **Cardiovascular Institute, Director of EECP Research Lab, University of Pittsburgh, USA.**

EECP: is a non-invasive; outpatient device therapy consists of gated sequential leg compression producing similar hemodynamic effects as an intra-aortic balloon pump. The procedure involves equipment to inflate and deflate a series of compressive cuffs enclosing the lower extremities and buttocks. Inflation and deflation of the cuffs are triggered by events in the cardiac cycle via microprocessor-interpreted ECG signals. Using a finger plethsmogram through out the treatment, monitors diastolic and systolic pressure waveforms. Treatment course consist of a 1-hour treatment/day for 35 days.

Clinical studies of EECP showed consistent reduction in anginal episodes, sustained improvement in CCS Angina Class, increased time to ST-segment depression, greater exercise work-load (METS), fewer stress-induced reversible perfusion defects and better health-related quality of life.

MONDAY MARCH 28, 2005
CRYSTAL HALL A

ECHOCARDIOGRAPHY & NUCLEAR CARDIOLOGY

11:00 AM-1:30 PM

Panel of experts: A Jamil Tajik, Navin C. Nanda, Fausto Pinto, S. Richard Underwood, Ashfaq A Khan, Raja Zafar Ahmed.
Moderator: Abdul Hafeez Chaudhry

Fausto Pinto (Portugal)
The role of imaging in the practice of Cardiology in emergent countries.

Navin C. Nanda (USA)
Update on echo assessment of valvular regurgitation.

A Jamil Tajik (USA)
Constrictive Pericarditis Vs Restrictive Cardiomyopathy.

Tasneem Z Naqvi (USA)
Vascular ultrasound (Carotid IMT) and vascular compliance in Cardiovascular Risk Assessment in Developing Countries.

A Jamil Tajik (USA)
Hypertrophic Cardiomyopathy.

S Richard Underwood (UK)
Imaging in Heart Failure.

Bela Kari (Hungary)
Artifacts in myocardial perfusion SPECT: how to identify and correct.

PAEDIATRIC CARDIOLOGY

2:30 PM-4:00 PM

Panel of experts: James L. Wilkinson, Krishna Kumar, Kaleem udin Aziz, Mehnaz Atiq, Sajid Maqbool, Abdul Munaf Tareen
Moderator: Najma Patel

SA Qureshi (UK)
Critical congenital heart disease in the newborn—recognition and management.

James L. Wilkinson (Australia)
Current concepts in the managements of heart failure in children.

Krishna Kumar (India)
Open Heart Surgery in infants with malnutrition.

Brig. Waqar Ahmad (Pakistan)
Delayed presentation of Congenital Heart Disease- decision making and management.

Kaleem uddin Aziz (Pakistan)
Mitral valve management- when to intervene in children.

HEART FAILURE

4:20 PM-6:00 PM

Panel of experts: Bunyad Haider, Kanu Chatterjee, John F Cleland, Naranjan S. Dhalla, Mumtaz Hassan, Saulat Siddique.
Moderator: Sania Nishtar

Naranjan S. Dhalla (Canada)
Newer concepts for Pathophysiology of congestive heart failure.

John Cleland (UK)
LV systolic Dysfunction and Cardiac dyssynchrony: what now is the best therapy.

Bunyad Haider (USA)
Heart Failure 2005; New Insights and Management strategies.

Ramzan Zakir (USA)
Outpatient management of heart failure: programme development and experience in clinical practice.

Yogesh Varma (India)
Evaluation and management of diastolic hart failure.

Kanu Chatterjee (USA)
Hyponatremia in heart failure- prevalence, pathophysiology and management.

HYPONATREMIA IN HEART FAILURE PREVALENCE, PATHOPHYSIOLOGY, AND MANAGEMENT

Kanu Chatterjee, FRCP (Lond.), FRCP (Edin.), FCCP, FACC, MACP

Institution: **CHATTERJEE CENTER FOR CARDIAC RESEARCH, UNIVERSITY OF CALIFORNIA, SAN FRANCISCO,USA.**

Hyponatremia is a recognized complication of congestive heart failure and is a risk factor for adverse prognosis. The prevalence of serum sodium concentration of less than 130 mEq/L is less than 5%; the prevalence of serum sodium concentration of less than 136 mEq/L is between 20 and 30%.

When the serum sodium concentration is 130 mEq/L or less, 1-year mortality is as high as 80%. When the serum sodium concentration is higher than 130 mEq/L, the 1-year mortality may be as high as 40%. The risk of 30-day and 1-year mortality in hospitalized patients may increase by 69% and 61%, respectively. A serum sodium concentration of less than 135 mEq/L has been reported to be associated with an odd ratio of 2.2 (95% CI, 1.3–4.0). In patients with decompensated heart failure, the hazard ratio may be as high as 2.0 (95% CI, 1.19–3.36). Older age, relative hypotension, and renal failure accompanying hyponatremia are associated with poorer prognosis.

PATHOPHYSIOLOGY: The causes of hyponatremia in heart failure are multifactorial and include decreased renal perfusion, decreased delivery of sodium in the distal renal tubule, and decreased free water clearance. Activated renin-angiotensin-aldosterone system and adrenergic systems are important contributing factors. Increased release of arginine vasopressin is an important mechanism in water retention, volume overload, and hyponatremia. Excessive diuretic therapy also contributes to hyponatremia.

MANAGEMENT: Increase in cardiac output, improvement in renal hemodynamics with neurohormonal modulators, and the use of vasopressin receptors antagonists may be of benefit.

1ST HEART SUMMIT OF EMERGENT COUNTRIES

28TH MARCH 2005

EMERALD HALL A

PEARL CONTINENTAL HOTEL, LAHORE. PAKISTAN

MONDAY MARCH 28, 2005
EMERALD HALL A

PAPERS AND LIVE CASES

9:00 AM-10:40 AM

Panel of Experts: Brig. Azhar Kiyani, Hafeez Ullah
Moderator: Zubair Akram

Charanjit S. Rihal (USA)
New frontiers in interventional Cardiology.

Ashok Seth (India)
Complications of coronary angioplasty.

Waqar Habib (Saudi Arabia)
Angiographic outcome of Drug Eluting Stents in high risk Arab patients.

LIVE CASES

Tasneem Z Naqvi (USA)
Diastolic Dysfunction is a Stronger Predictor of Outcome than Systolic Dysfunction Following Primary Angioplasty.

Nasser-Ali Hodjati (Iran)
One-Year Survival of Patients with Left Main Coronary Artery Disease.

DB Pahlajani (India)
Acute M I – Reperfusion strategy in 2005.

LIVE CASES

Diastolic Dysfunction is a Stronger Predictor of Outcome than Systolic Dysfunction Following Primary Angioplasty

Tasneem Z. Naqvi MD, MRCP (UK), FACC, Sriram Padmanabhan MD, Farhad Raafi MS, Hahn K Hyuhn, Shlomo Metetsky, MD, James Mirocha*

Institution: **From the Cardiac Non Invasive Laboratory, Division of Cardiology and Department of Statistics*, Cedars-Sinai Medical Center, UCLA School of Medicine, Los Angeles, CA**

BACKGROUND: Left ventricular diastolic function is an important predictor of morbidity and mortality following acute myocardial infarction (AMI). Tissue Doppler Imaging (TDI) has become one of the most robust methods of assessment of LV diastolic function.

AIM: Primary percutaneous coronary angioplasty (PTCA) is now the standard of care for patients with AMI. Previous studies have not evaluated the role of diastolic function in patients with AMI treated with primary PTCA. We evaluated the role of diastolic function assessment with TDI in predicting in-hospital events following first AMI treated with primary PTCA.

METHODS: We prospectively enrolled fifty-nine consecutive patients aged 60±15 years, 48 males, who presented at our institution with first AMI and were treated with primary PTCA. Patients underwent 2D and Doppler echocardiography including TDI assessment of 6 basal mitral annular regions within 24 hours after primary PTCA and were followed until discharge. Clinical and echocardiographic variables at index AMI were compared to predict a combined endpoint consisting of cardiac death, ventricular tachycardia, congestive heart failure (CHF) or emergent in-hospital surgical revascularization. Age, gender, peak serum troponin, duration of chest pain, heart rate at the time of echocardiography, left ventricular (LV) size, end systolic and end diastolic volume, wall motion score index, LV wall thickness, sphericity index, LV ejection fraction (EF), myocardial performance index (MPI), left atrial size, mitral regurgitation severity, peak pulmonary artery pressure, mitral inflow E, A, E/A ratio, deceleration time, TDI mitral annular systolic (S) and diastolic (E and A) wave velocities and S wave velocity times integral (VTI) of infarct and non-infarct mitral annular regions were evaluated.

RESULTS: There were 3 deaths, 7 patients developed CHF, 4 patients had ventricular tachycardia and 1 required emergent surgical revascularization. Stepwise logistic regression analysis revealed that E/E' of non-infarct related mitral annulus ($p<0.01$) and mitral inflow E wave deceleration time ($p<0.02$) were independent significant predictors of cardiac events, with generalized R2 of 0.66, when compared with age, heart rate, wall motion score index, LV ejection fraction, diastolic (E) velocity of non infarct annulus, velocity times integral of systolic velocity of the infarct and non infarct annulus as well as combined systolic and diastolic velocities of infarct and non infarct annulus.

CONCLUSIONS: In acute phase of AMI, E/E' and mitral inflow E wave deceleration time are strong predictors of in-hospital cardiac events in patients with AMI treated with primary PTCA.

MONDAY MARCH 28, 2005
EMERALD HALL A

One-Year Survival of Patients with Left Main Coronary Artery Disease

Nasser-Ali Hodjati MD, Zohreh Karkhaneh Yousefi MD, Jalal Kheirkhah MD, Mohammad Reza Motamedi MD.

Institution: **SHAHID BEHESHTI CARDIOVASCULAR RESEARCH CENTER IRAN.**

AIMS / OBJECTIVES: It is believed that mortality is very high for medical therapy in comparison with surgery in patients with left main coronary artery disease (LMCD), but prognosis of medical treatment is not always poor in all patients, and it depends on specific clinical and angiographic findings. In this study we assessed one-year survival in two groups of patients with LMCD who were candidate for coronary artery bypass graft (CABG) according to their coronary angiogram and underwent surgery or refused it and remained on medical therapy.

METHOD: One hundred fifty eight consecutive patients (67.1% male) who referred to Modarres Hospital in a 15 months period, were entered this observational study with one year follow-up period, provided to have LMCD on their coronary angiogram and were eligible for CABG. The starting time was the date of CABG recommendation following angiography. Survival comparisons were also made in subgroups defined by treatment and 1) the severity of left main stenosis (50%-75% vs. >75%), 2) left ventricular function (LVEF>55% vs. 30%-55%), 3) presence of significant right coronary artery lesion and 4) gender.

RESULTS: CABG was performed in 103 patients and 55 patients remained on medical therapy. Baseline variables did not differ significantly between the treatment groups except for age and hypertension. Life Table analysis revealed 83.54% cumulative one-year survival for all patients. It was 85.4% for surgical group and 80% medical group (p=0.49). Surgery increased one-year survival significantly in patients with left main stenosis >75% (91% vs. 0%, p<0.0001), patients with normal right coronary artery (100% vs. 0%, p<0.0001) and male subjects (94% vs. 77%, p=0.007).

CONCLUSIONS: CABG may have significant survival benefit for LMCD patients with left main stenosis >75%, male patients and those with non-stenotic right coronary artery.

MONDAY MARCH 28, 2005
EMERALD HALL A

PAPERS AND LIVE CASES
11:00 AM-1:30 PM

Panel of Experts: Shah Zaman, Aziz Gul Mufti
Moderator: Mohsin Nazeer

LIVE CASES

N Chandra (India)
Air transport of critically sick cardiac patients in Indian subcontinent: Shattered myths.

Seemeen Hussain (Pakistan)
Biometric Analysis and Risk Evaluation of Myocardial Infarction.

Prof S Jalal (India)
Changing pattern of cardiac diseases in J&K

LIVE CASES

Y Varma (India)
Significance of cardiac Troponin I in acute coronary syndromes.

Mohan Nair (India)
Angioplasty in acute coronary syndrome.

Tariq Ashraf (Pakistan)
Greek Technique for Type 4a Coronary Bifurcation Lesions.

LIVE CASES

Air transport of critically sick cardiac patients in Indian subcontinent: Shattered myths.

N.Chandra, Y.Mehta, N. Trehan

Institution: **Escorts Heart Institute & Research Centre, New Delhi, India.**

BACKGROUND : Last decade has seen unprecedented advances in the field of cardiology, but unfortunately these are restricted to major urban cities. This has created a need to transport, a critically sick cardiac patient from remote primary centre to a tertiary hospital, for timely intervention. Air-ambulance is one such modality, capable of fast transfer. But there are a number of myths associated with the safety of air travel, during the acute stage of a cardiac patient, depriving these patients of a timely expert help. We hereby present our experience of transporting critically sick cardiac patients in an air-ambulance in the Indian subcontinent.

METHODS: A retrospective analysis of the records of patients, who have been airlifted to our centre, was conducted.

Airlifting team consisted of a cardiologist, cardiac anaesthetist, nurse and a cardiac surgeon whenever required. Both a fixed wing, as well as a rotor aircrafts were used, depending upon the ground logistics. We covered, the whole of Indian subcontinent, including the neighboring countries viz. Bangladesh, Sri Lanka and Nepal.

Patients who were in cardiogenic shock were put on a battery driven Intra Aortic Ballon Pump (IABP) by the cardiac surgeon accompanying the team, at the peripheral hospital, before loading the patient on the aircraft. Through out the flight patients vital parameters were closely monitored, with the help of battery driven monitors.

RESULTS: A total of 120 patients were airlifted to Escorts Heart Institute & Research Centre, New Delhi, India, between Jan 1998 to July 2004.Their age ranged from 35 yrs to 88 yrs, with a male to female ratio of 9:1.

75 % of the patients were of acute myocardial infarction (MI), 10 patients were shifted on even the first day of MI. 70 % of them were shifted with in the first week of MI.

15 patients were in cardiogenic shock, requiring onboard IABP support. All 15 survived the airtransport.

20 paitients were in Killip IV pulmonary oedema and had to be ventilated.
2 patients developed complete heart block and had to be paced on board thru the internal jugular vein. One patient developed VF, and was defibrillated using a Philips Heartstream AED.

No mortality was reported during the air transfer.

In hospital course of the patients after arrival at our centre:

PTCA = 58
CABG= 39
Med. Tt =7
AICD = 3
107 pts. were successfully discharged
Mortality= 13 [5 of 13, were in Cardiogenic Shock]

CONCLUSION: Our results shatters many myths, regarding air travel, prevailing in the medical community, for eg.

- It is dangerous for a cardiac patient to travel by air.
- Air- travel within the first week of MI is absolutely prohibited.(70 % of our patients were transported with in first week of MI).
- Patients in cardiogenic shock are not fit to travel by air.(10/98 patients were in cardiogenic shock,and were successfully transported on IABP support).

This observational study establishes the safety of air transfer of even the most critically sick cardiac patients, provided they are accompanied by a trained team, and necessitates the development of trained air rescue facilites, especially in developing countries.

Biometric Analysis and Risk Evaluation of Myocardial Infarction

Seemeen Hussain

Institution: DEPARTMENT OF MEDICINE, FATIMA JINNAH MEDICAL COLLEGE, LAHORE

OBJECTIVE: To find correlation between biometric measurements and the risk of myocardial infarction in Pakistani population.

STUDY DESIGN: Comparative study was designed between group 1 patients (n = 1060) who had acute myocardial infarction (MI) and compared with group 2 controls (n = 1060) who had no history of ischemic heart disease. Both groups were matched and taken from the same population. The variables compared were, body mass index taken as weight in Kg/height in m2, waist hip ratio, and circumference of upper arm, thigh and calf in cm. Univariate, bivariate and multivariate analysis were used to calculate the statistical significance of the measures with SAS statistical package.

MAIN OUTCOME MEASURE: In Pakistani population does central adiposity give a body shape that predisposes to myocardial infarction, or is there any association with circumference of arms and legs?

Setting:The study was conducted at Sir Ganga Ram Hospital affiliated with Fatima Jinnah Medical College Lahore and Punjab Institute of Cardiology, Lahore from 1 sf January 2004 to June 2004.

SUBJECTS: Seven hundred and sixty males and three hundred females with acute myocardial infarction were compared with similarly matched males and females without history of ischemic heart disease.

RESULTS: In our population of male patients with myocardial infarction the mean age was 51.85 years (SID::J: 10.73) as compared to female patients with a mean age of 57 years (STD::J: 9.88). Central adiposity indicated by body mass index (>25kg/m2) p = 0.037 and waist hip ratio (>0.9) p = 0.039 had higher prevalence in both groups. Statistically significant difference was present in upper arm circumference measurement in both sexes. In male patients with myocardial infarction 520 i.e. 68.42% had an upper arm circumference <30 cm giving an odds ratio of 0.438, 95% confidence interval 0.226 - 0.848 and p = 0.014. In female patients 230 out of 300 i.e. 76.6% had an upper arm circumference <30.5 cm giving an odds ratio of 0.176, 95%

confidence interval 0.06 - 0.54 and p = 0.002. In the lower limb there was a difference between males and females. In males 430 out of 760 i.e. 56.57% had thigh measurements more than the average 47 cm giving an odds ratio of 0.579, 95% confidence interval 0.26 - 1.6 and p = 0.023. In females there was no significant difference in thigh measurements p >0.05. In males the cut off point *for* calf circumference is 33 em. There was no statistical difference between the calves in myocardial infarction and control groups with p >0.05. However 260 out of 300 females in control group i.e. 86.67% had an average calf>30 em odds ratio 0.2308 95% confidence interval 0.064 - 0.83 and p = 0.0208. **In** the multivariate model as well upper arm, calf and thigh were the three statistically significant variables with p = 0.005, p = 0.001 and <0.0001 respectively. r2 = 0.249, adjusted r2= 0.234.

CONCLUSION: In our study central adiposity alone does not predispose to myocardial infarction. When it is accompanied by thin upper arms in both sexes, thin calves in females and heavier thighs in males there is a statistically significant risk to myocardial infarction. Upper arm, thigh and calf measurements as part of body shape contribute 25% times to this increased risk.

SIGNIFICANCE OF CARDIAC TROPONIN I IN ACUTE CORONARY SYNDROMES

Y. Varma , A. Saxena, G. Singh, A.Gopal, A. Dengra, V.K.Sharma, B.S. Yadav, R. Gupta, R.S. Meena, N.Himtani, R.Gopal

Institution: **Department of Cardiology, Gandhi Medical College, Bhopal, India.**

32 patients presenting with classical chest pain were enrolled in the study. The clinical evaluation, serial ECG's, Cardiac troponin I, complete routine biochemical investigations and pre discharges colour doppler were done to evaluate LV dysfunction.

The patients were divided into 2 groups

A) Unstable Angina (N=10)

B) Acute Myocardial infarction (N=22).

In group A, the mean LV ejection fraction was 56.7%, regional wall motion abnormality in 5 (50%), Inhospital Arrhythmias, cardiogenic shock and mortality were Nil (0%). The mean cardiac troponin I was < 0.1 mcg/l in 8 patients. 2 patients had values of 0.11 and 0.19 mcg/l respectively.

In Group B the mean LV ejection fraction was 51.13%, regional wall motion abnormality in 22 (100%), Inhospital Arrhythmias in 1 (4.54%), cardiogenic shock and mortality were NIL (0%). The mean cardiac troponin I was 11.60 mcg/l (0.222 – 46.6 mcg/l).

If the cut off value of cardiac troponin I was 0.1mcg/l , in both the groups the sensitivity and specificity was 100% and 80%. Predictive value of positive result was 91.66%, of negative value was 100%. Taking the cut of value as 0.8 mcg/l these results were 86.36%, 100%, 100% and 76.92% respectively. The left ventricular ejection fraction was lower and cardiac troponin I values were higher than group A.

CONCLUSION: Cardiac Troponin I has high sensitivity and specificity for diagnosing acute myocardial infarction. Taking the cut-off value as 0.1 mcg/L. the sensitivity to diagnose acute myocardial infarction was 100% and the specificity 80%. Increasing the cut-off value to 0.8 mcg/L the specificity increased to 100% but the sensitivity reduced to 86.36%. Higher levels of cardiac Troponin I was associated with greater LV systolic dysfunction.

Greek Technique for Type 4a Coronary Bifurcation Lesions

TARIQ ASHRAF, NADEEM QAMAR, ASADULLAH KUNDI

Institution: NICVD, Karachi-Pakistan

Bifurcated Coronary Lesion is still challenging area in interventional cardiology. False bifurcation lesions (lesions of the main branch without significant lesions of the side branch) may become true bifurcation lesion after stenting due to snow plough effect. We want to share our initial experience with Greek technique for treatment of type 4a bifurcation lesions with direct stenting of main vessel with Simultaneous kissing balloon of side branch to avoid axial plaque redistribution.

KEY WORDS: bifurcation lesions, coronary angioplasty, Stents.

MONDAY MARCH 28, 2005
EMERALD HALL A

PAPERS AND LIVE CASES

2:30 PM-4:00 PM

Panel of Experts: Bilal Zakria Khan, Khawar Kazmi
Moderator: Saqib Shafi Sheikh.

LIVE CASES

Dede Kusmana (Indonesia)
The Profile of Cardiovascular Risk Factors in Male and Female from Jakarta MONICA 2000 Survey.

Sania Nishtar (Pakistan)
Cardiovascular Diseases as part of the National Action Plan on Non-Communicable Diseases Prevention, Control and Health Promotion in Pakistan.

Soma Raju (India)
Hyperlipidemia management: Current Status.

LIVE CASES

MONDAY MARCH 28, 2005
EMERALD HALL A

The Profile of Cardiovascular Risk Factors in Male and Female from Jakarta MONICA 2000 Survey

KUSMANA, DEDE

Institution: **DEPARTMENT OF CARDIOLOGY AND VASCULAR MEDICINE, FACULTY OF MEDICINE, UNIVERSITY OF INDONESIA.**

OBJECTIVE: To find the prevalence and the risk of cardiovascular disease risk factors between male and female, in order to set up a suitable program for future prevention

METHODS: A population cross sectional survey using multistage stratified random sampling was carried out in 2000 at three districts of Jakarta City among people age 25 ¨C 75 years between June to August 2000. A complete history, physical examination, 12 ECG recording and laboratory examination was conducted. Out of 2000 population, 1860 (93%) completed the study.

RESULTS: The prevalence of hypertension (>140/90 mmHg) (32 %) and smoking (37.8 %) were higher in male compared to female (31.2 % and 1.8 %), but obesity (5.9 %-WHO, 19.1%-Asia) vs (19.1% WHO, 33.3%-Asia and hyperlipidemia (51.1 % vs 60.1%) were lower, and diabetic (7.1% vs 7.2%) was equal respectively. Overweight and obesity (WHO criteria) has a significant increased risk (OR=1.6, CI:1.27-2.01, p=0.000 for BMI 26.00-29.99 kg/m2 and OR=3.43, CI:2.42-4.88, p=0.000 for BMI (¡Ý 30 kg/m2) or Asia criteria respectively (OR=2.85, CI:1.87-4.34, p=0.000 for BMI 25-27 kg/m2 and OR=4.09, CI:2.75-6.09, p=0.000 for BMI >27 kg/m2). Hypercholesterolemia (¡Ý240 mg/dl, OR=1.73, CI:1.34=2.22, p=0.000), abnormal ECG (OR=2.51, CI:1.89-3.33, p=0.000)as well as unexercised (OR=1.26 , CI :1.14 ¨C 1.38, p=0.000) .

CONCLUSION: The prevalence of hypertension and smoking were higher in male compared to female, but for obesity and hyperlipidemia in female were lower than male. The future prevention should be focused on specific target population.

KEY WORDS: risk factor, Jakarta 2000,

Cardiovascular Diseases as part of the National Action Plan on Non-Communicable Diseases Prevention, Control and Health Promotion in Pakistan

Sania Nishtar

Institution: **Heartfile, Pakistan**

In Pakistan a public-private partnership - led by the NGO Heartfile and constituted additionally by the Ministry of Health, Government of Pakistan and the WHO Pakistan office was launched in April 2003. Mandated with the task of developing and implementing a national strategy for achieving national goals for the prevention and control of Non-communicable Diseases (NCD)s, this was the first opportunit,y to mount a truly 'National Plan of Action' in Pakistan enlisting a broader range of inputs and with the Governments commitment to NCD as a priority. The partnership recently released a strategic framework for action - the *National Action Plan for the Prevention and Control of Non-communicable Diseases and Health Promotion in Pakistan* (NAP-NCD) - an integrated and concerted approach addressing the multidisciplinary range of issues within a prevention and control frame or across a broad range of NCDs. Incorporating both policies and actions and set within a long-term and life course perspective, NAP-NCD calls for an institutional, community and public policy level change factoring integration at four levels: grouping NCDs so that they can be targeted through a set of actions, harmonizing actions, integrating actions with existing public health systems and incorporating contemporary evidence-based concepts with this approach. The NAP-NCD delivers an Integrated Framework for Action, which has been modelled to impact a set of indicators through the combination of range of actions in tandem with rigorous formative research. Drawing on the strengths of various public and private sector partners, this programme outlines a scope of interventions that are built on shared responsibility, allowing agencies to participate according to their own missions and mandates. The partnership is in harmony with national health priorities, complements state initiatives and is optimally integrated with the national health system. The partnership has brought value to all the three partners. The government has harnessed the technical strength of a private sector partner, which in turn is contributing to the country's National Plan within the framework of priorities set by broad-based national consensus; WHO, on the other hand, is gaining experience in working in a country model in which the private sector can be supported through WHO country resources, which are typically earmarked

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As part of this initiative, cardiovascular diseases have been grouped alongside non-communicable diseases (NCD) within a combined strategic framework in order to synchronize public health actions. In this programme, surveillance of cardiovascular risk factors is part of an integrated population-based NCD surveillance system. The population approach to CVD prevention is a priority area in this programme with a focus on broad policy measures and behavioural change communication. The former include revision of the current policy on diet and nutrition to expand its focus on under-nutrition; the development of a physical activity policy; strategies to limit the production of, and access to, *ghee* as a medium for cooking and agricultural and fiscal policies that increase the demand for, and make healthy food more accessible. The programme focuses attention on improving the quality of prevention programmes within primary and basic health sites and integrates concerted primary and secondary prevention programmes into health services as part of a comprehensive and sustainable, scientifically valid, and resource-sensitive programme for all categories of health care providers. It promotes screening for raised blood pressure at the population level and screening for dyslipidaemia and diabetes in high-risk groups only. It highlights the need to ensure the availability of 'aspirin, beta blockers, thiazides, ACE inhibitors, statins and penicillin at all levels of health care. The programme points out the need to conduct clinical endpoint trials in the native Pakistani setting to define cost-effective therapeutic strategies for primary and secondary prevention of CVDs. Emphasis is laid on building capacity of health systems in support of CVD prevention and control and building a coalition or network of organizations to add momentum to CVD prevention and control efforts.

PAPERS AND LIVE CASES
4:20 PM-6:00 PM

Panel of Experts: Brig. Khalid Raja , Faheem Jafri
Moderator: Shahid Amin

LIVE CASES

Rajesh Vijayvergiya (India)
Seroprevalence of Anti Chlamydia pnemoniae and Anti Helicobacter pylori IgG Antibodies in Coronary Artery Disease patients.

C Herdeg
The intracoronary application of Paclitaxel with a new double- balloon catheter prevents in-stent stenosis in animal.

LIVE CASES

Naveed Akhtar (Pakistan)
Clinical Genetics of Cardiovascular Disease in Pakistan.

Fadi Faour (Lebanon)
Basics of pacing.

LIVE CASES

MONDAY MARCH 28, 2005
EMERALD HALL A

Seroprevalence of Anti Chlamydia pnemoniae and Anti Helicobacter pylori IgG Antibodies in Coronary Artery Disease patients

Rajesh Vijayvergiya, Anil Grover, Naveen Agarwal, Ajay Bahl, Meera Sharma, Malkiat Singh, Madhu Khullar

Institution: **Post Graduate Institute of Medical Education and Research, Chandigarh- 160012, India.**

AREA OF RELEVANCE: Coronary Artery Disease.
AIMS: Recent studies have shown the association of C. pneumoniae (CP) and H. pylori (HP) infection with coronary artery disease (CAD). We correlated the seroprevalence of IgG antibody titers for CP and HP in angiographically proven CAD cases and compared it with controls.
METHODS: IgG antibody titers were determined by ELISA method for HP in 90 cases and 30 controls, and also for CP in 75 cases and 15 controls. Both the groups were matched for demographic variables and conventional CAD risk factors.
RESULTS: H. pylori group:- The IgG titer for HP was positive in 42.2% cases and 23.3% controls. The difference was found to be marginally significant ($p= 0.06$) with likelihood ratio of 3.60. Multifactorial logistic regression analysis after considering conventional CAD risk factors showed statistically significant ($p <0.04$) association with correlation coefficient of 1.11 and odds ratio of 3.05.

C. pnemoniae group:- The IgG titer for CP was positive in 52.0% cases and 20.0% controls. The difference was statistically significant ($p=0.02$) with likelihood ratio of 5.5. Multifactorial logistic regression analysis after considering conventional CAD risk factors showed statistically significant ($p=0.03$) association with correlation coefficient of 1.52 and odds ratio of 4.58.

The seropositivity was in both groups was not related with the type of clinical presentation like unstable angina, chronic stable angina and acute myocardial infarction. Logistic regression analysis between two groups showed independent association of anti CP and anti HP antibodies with CAD (correlation coefficient 0.03, $p=0.78$).
CONCLUSION: Serologically, infection with HP and CP is significantly and individually associated with CAD.

The intracoronary application of paclitaxel with a new double- balloon catheter prevents in- stent-stenosis in animal

C Herdeg, D Haghi, T Sueselbeck, I W einschenk, J Metz, M Borggrefe, KK Haase, C Dommke.

Institution: Department of Cardiology University of Tubingen, Tubingen Germany

BACKGROUND: The prevention of an in-stent stenosis remains still a challenge in invasive cardiology. Paclitaxel showed already on drug -eluting stents its ability to reduce restenosis. Drug eluting stents are giving new perspectives although they are very expensive. Local drug application via balloon- systems in coronary arteries could be a new way. We develloped a double-balloon-catheter which allows the intracoronary application of medication during a normal PCI-procedure.

METHODS: Bare-metal stents (3,0x13mm) were implanted in normal pigs (25±4 Kg) and severely overstreched either in proximal LAD, RCX or RCA. 5 pigs received during a second procedure a local application of paclitaxl- solution in the stented area for 2 minutes via our new double-balloon-catheter, 5 animals received NaCI only, 5 animals were used as control group. The animals were treated during 6 weeks with aspirin and clopidogrel to prevent stentthrombosis. A final angiography was performed after 6 weeks, the animals were sacified and the treated coronaries were cut out after fixation. Histological cuttings were performed and different stained. Morphometric analysis was performed by light microscopy using a computerized morphometry system and restenosis was measured.

RESULTS: All examined coronary arteries showed complete endotheliasation.We were able to induce a 60% in-stent-stenosis in our control group. With the treatment of paclitaxel via double-balloon the stenosis was significantly reduced: 17% ($p<0.001$). In the stent+NaCI group the stenosis was almost the same as in the control group.

CONCLUSIONS: The follow-up-treatment with paclitaxel via the new double -balloon-catheter could reduce significantly an instent-stenosis , which was induced in the control group by implanting a bar-metal stent; the same procedure with NaCI showed a comparable stenosis to the control group.The region infront and behind the stented regions (shoulder of double-balloon) showed no stenosis.The local application of paclitaxel is a effective and easy to handle treatment to prevent an in-stent-stenosis in pig.

RESULTS:

Group	Degree of stenosis (%)
Stent	60
Stent + paclitaxel	17
Stent + NaCl	54

MONDAY MARCH 28, 2005
EMERALD HALL A

Clinical Genetics of Cardiovascular Disease in Pakistan

Naveed Akhtar*, Aisha Mohyuddin, Muhammad Ismail, Qasim Ayub, Shagufta Khaliq, Qasim Mehdi *Director Coronary Care Unit,

Institution: Shifa International Hospital, Islamabad & Biomedical and Genetic Engineering Laboratories, Islamabad

Pakistan has one of the highest prevalence of cardiovascular disease throughout the world. Studies have shown a predilection for an aggressive, earlier onset cardiovascular disease pattern in the Pakistani population in comparison with other populations suggesting the involvement of genetic components. The application of molecular genetics has improved our understanding of the pathogenesis of cardiovascular diseases and opened up avenues for the prevention and treatment of these diseases. The prediction is that genetic/genomic revolution will transform the role of Cardiologists from recognizing and managing established disease as is the case today to applying genetic information in prevention and treatment in the near future. This paper summarizes the published and on-going work in the field of cardiovascular genetics in Pakistan. The association between angiotensin-converting enzyme gene insertion/deletion polymorphism and essential hypertension in Pakistan showing the role of ACE III genotype in individuals less than 40 years will be highlighted. Recently described mapping of a novel gene for hypertrophic cardiomyopathy at chromosome 1 q 32 in a three generation Pakistani family and screening of the candidate gene TNNT2 (cardiac troponin T) in this region will be discussed. On-going work on association of resistance or susceptibility of human leukocyte antigen (HLA) with rheumatic heart disease in Pakistani population especially typing for HLA -DRB1, -DRB3. -DRB4, -DRB5 and -ooB1 will be discussed. The insight into the molecular mechanism of the cardiovascular diseases in Pakistani population will be a useful tool in risk assessment and prediction of the clinical outcome and hopefully affording new means of therapeutic intervention.

1ST HEART SUMMIT OF EMERGENT COUNTRIES

29TH MARCH 2005

CRYSTAL HALL A

PEARL CONTINENTAL HOTEL, LAHORE. PAKISTAN

MONDAY MARCH 29, 2005
CRYSTAL HALL A

ELECTROPHYSIOLOGY

9:00 AM-10:40 AM

Panel of experts: Masood Akhter, Arshad Jahangir, T S Kler, K.K. Talwar, Brig. Imran Majeed, Humayoun Maqsood.
Moderator: M Ashraf Dar

Masood Akhter (USA)
Mechanisms of Supraventricular Tachycardia.

K K Talwar (India)
Approach to Management of ventricular tachyarrhythmia in developing countries.

Abdul Wase (USA)
Challenges of Device based therapy for cardiac arrhythmia in developing countries.

TS Kler (India)
CRT for Refractory Heart Failure.

Haroon Rashid (USA)
Percutaneous ablation for Atrial Fibrillation.

ADULT INTERVENTIONAL CARDIOLOGY

11:00 AM-1:30 PM

Panel of experts: Tanveer Khalid Bajwa, Mubashir Chudary, Ashok Seth, Waqar Habib, Charanjit S Rihal, Farqad Alamgeer, Mansoor Ahmad
Moderator: Nadeem Hayat Mallick

Jim Nolan (UK)
Transradial access: Issues.

Suman Bhandari (India)
Drug Eluting Stents : Penetration for emergent Economies.

Upendra Kaul (India)
Coronary Interventions in Diabetics with multi vessel disease – The changing scene.

Samuel Mathew (India)
Long diffused disease and small vessel- have we found an answer in DES?

Ashok Seth (India)
Challenges of Angioplasty in patients with previous CABG.

Waqar Habib (Saudi Arabia)
An overview on IVUS.

Tanvir K Bajwa (USA)
Interventional Treatment of Peripheral Vascular Disease: Present & Future.

Charanjit S Rihal (USA)
Percutaneous Trasvenous Mitral Annuloplasty for MR.

MONDAY MARCH 29, 2005
CRYSTAL HALL A

PAEDIATRIC INTERVENTIONAL CARDIOLOGY

2:30 PM-4:00 PM

Panel of experts: S A Qureshi, GA Sheikh, Brig. Waqar Ahmad, Masood Sadiq, Tahir Masood.
Moderator: Maadullah

SA Qureshi (UK))
Transcatheter closure of ASD- patient selection, decision making and current status.

James L. Wilkinson (Australia)
What does the interventionalist needs to know about transcatheter closure of VSD.

Krishna Kumar (India)
Catheter closure in the developing world- cost saving and modifications

SA Qureshi (UK)
Interventional treatment of Coarctation of the aorta- Balloon versus Stent.

Masood Sadiq (Pakistan)
Current status of Device closure of PDA-Experience from an emergent country.

MONDAY MARCH 29, 2005
CRYSTAL HALL A

PREVENTIVE CARDIOLOGY AND HYPERTENSION

4:20 PM-6:00 PM

Panel of experts: Azhar MA Farooqi, Dede Kusmana, , Adursh Kumar, Shaharyar A. Sheikh, Faisal Masud, Akbar Chaudhry.
Moderator: Muhammad Ishaq

Meenakshi Sharma (India)
Risk Factors of Coronary artery Disease in South Asian population.

Arshad Jahangir (USA)
Novel Insights into Cardioprotection of the Aging Heart.

Dede Kusmana (Indonesia)
New Trends and Modalities in Cardiac Rehabilitation.

G S Wander (India)
Current Concept in treatment of hypertension.

Shahbaz A Qureshi(Pakistan)
Gene therapy in cardiovascular diseases.

RISK FACTORS OF CORONARY ARTERY DISEASE IN SOUTH ASIAN POPULATION

Meenakshi Sharma

Institution: **Indian Council of Medical Research, Ansari Nagar, New Delhi, India**

AIMS / OBJECTIVES: To review the prevalence of risk factors for coronary artery disease in South Asian population.

METHOD: Research articles from South Asian countries on studies on prevalence of risk factors of CAD were collected and reviewed.

RESULTS: A high prevalence of lipid abnormalities associated with CAD was found. Other risk factors like abdominal obesity, hypertension and diabetes were also present in both men and women. Intake of fruits and amount of physical activity had a significant effect on reducing CAD in this population. The important risk factor for premature coronary artery disease in South Asian men appears to be smoking and family history of CAD. Abnormal concentrations of homocysteine in this population are an important emerging risk factor for these diseases.

CONCLUSIONS: Importantly, as an association appears to exist between convention risk factors like smoking, abnormal lipid levels, hypertension, diabetes, abdominal obesity, low fruit intake, alcohol intake and physical activity, a preventive strategy can be immediately worked out in controlling the epidemic of CAD in South Asians. The benefits of addressing these root causes of CAD are going to be immense.

NEW TRENDS AND MODALITIES IN CARDIAC REHABILITATION

KUSMANA, DEDE

Institution: **Department of Cardiology and Vascular Medicine, Faculty of Medicine, University of Indonesia, National Cardiovascular Center, Harapan Kita Hospital, Jakarta, Indonesia**

The fast growing of interventional strategy, bio-molecular science, and effective drug eluting stents as well as powerful statin influence cardiovascular care system. Short term hospitalization after percutaneous interventions, off pump coronary artery by pass graft tends to neglected cardiac rehabilitation program. The impact patient referred physician became less and the attended to the program lowered. It was estimated only 10 to 40 % of eligible patients participated in programs. Regular physical activity showed improvement in endothelial function, reduce inflammation and enhance circulating progenitor cell. Formal institutional rehabilitation and home base program give the similar benefit in increasing functional capacity, modifying cardiovascular risk factors, decreasing symptoms and improving quality of life. Our future concept of cardiac rehabilitation should change to a more comprehensive not only on integration of institutional and home base programs but also primary and secondary prevention.

KEY WORDS: Cardiac rehabilitation, comprehensive, new trends.

RISK FACTORS OF CORONARY ARTERY DISEASE IN SOUTH ASIAN POPULATION

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KEY WORDS: Cardiac rehabilitation, comprehensive, new trends.

1ST HEART SUMMIT OF EMERGENT COUNTRIES

29TH MARCH 2005

EMERALD HALL A,

HOTEL PEARL CONTINENTAL, LAHORE-PAKISTAN

PAPERS AND LIVE CASES

9:00 AM-10:40 AM

Panel of Experts: Muhammad Sarwar, Hassan-ul-Banna.
Moderator: Shahid Hameed

Adarsh Kumar (India)
Beneficial effect of statins in calcific aortic stenosis (AS).

Kalimuddin Aziz (Pakistan)
Timing of surgical intervention in rheumatic heart disease.

LIVE CASES

Kalra GS (India)
Transcatheter closure of congenital ventricular septal defects: experience with various devices.

Tanvir K Bajwa (USA)
Status of Carotid Artery stenting.

Narendranath Khanna (India)
Endovascular approach to diseases of peripheral vasculature.

LIVE CASES

BENEFICIAL EFFECT OF STATINS IN CALCIFIC AORTIC STENOSIS (AS)

ADARSH KUMAR, Pushpa Devi, Varun Mohan

Institution: Govt. Medical College /GND Hospital, Amritsar, INDIA.

AIMS AND OBJECTIVES: Calcific AS simulates Atheroma. Therefore ,statins might have a role in these patients by reducing cholesterol, inflammation and calcium deposition. The aim of the study was to prove that statins slow the progression of the disease & delay/obviate need for surgery in cases with Calcific AS.

MATERIAL AND METHODS: 17 patients of AS (diagnosed clinically and by detailed Doppler echo study) were given standard therapy (Gp B) while 20 patients (Gp A) were given 20-40 mg /day of Atorvastatin additionally. (Pts with NYHA Class IV, e" Grade II AR , or with previous MI were excluded.). Mean period of follow up was 11.3 months.

RESULTS WITH END POINT PARAMETERS: Improvement in symptoms of angina/SOB/Syncope was significantly more in Gp A than GP B($p<0.05$). The need for surgery was also lesser in Gp A than Gp B -3 vrs (p 0.02).

Parameter	Change over 11.3 months		
	Statin 20(Gp A)	No Statin 17(Gp B)	P value
Peak transvalvular gradient (mm Hg)	4.6	8.9	0.04
Mean transvalvular gradient (mm Hg)	3.9	6.1	0.17
Aortic valve area (cm^2)	-0.10	-0.16	0.024

CONCLUSIONS: Addition of statin therapy in calcific AS reduces the progression of the disease and also improves quality of life and might delay / obviate the need for surgery in mild to moderate AS cases and may be a good palliative treatment.

Timing of surgical intervention in Rheumatic Heart Disease

Prof. Kalimuddin Aziz

Institution: Department of Paediatric Cardiology, National Institute of Cardiovascular Diseases, Karachi.

AIMS: The criteria of timing of surgical intervention in rheumatic mitral valve regurgitation in children are not defined. We hypothesized that by using the end diastolic *h/r* ratio i.e. LV end diastolic wall thick and LV radius *(1/2* LV end diastolic dimension), on M-mode echocardiography in children with chronic volume over load due to mitral regurgitation, the asymptomatic LV compensated state and symptomatic state due to LV decompensation can be detected, which would help determine the time of surgical intervention.

METHODS: By using prospective data of 89 normal schoolchildren of Karachi Pakistan and publish data of 36 children *in* compensated aortic valve stenosis (AVS), the *h/r* to peak systolic LV pressure (LVP) or systolic blood pressure (SBP) relationship was found to be linear. We calculated the 95th percentile limits and 95th percentile confidence bands of this relation, for future predictions.

RESULTS: The data of 111 children in MR and AR, 38 studied prospectively and 73 retrospectively, was plotted on *h/r* - LVP or sap scatter gram. All children with MR who, were asymptomatic had *h/r* ratio within the 1SO of normal range and all children with *h/r* ratio below -2 SO of normal were symptomatic and in LVF. Approximately half of the children with *h/r* ratio within -1 to -2 SO were asymptomatic and most of the remaining were symptomatic without LVF.

CONCLUSION: It concluded that *h/r* ratio was able to detect compensated asymptomatic LV state from decompensated symptomatic state with LVF in children with chronic LV volume overload and that persistently decreasing value of h/r ratio from with in 1SD to -1 to -2 SO can be used as a new criterion for determining the time of surgical intervention.

Transcatheter closure of congenital ventricular septal defects: experience with various devices

KALRA, GS, ARORA. R

Institution: Department of Cardiology, Fortis Hospital - Super Speciality in Heart, Mohali.

Transcatheter closure of congenital ventricular septal defect (VSD) using various devices is gaining acceptance in selected cases of perimembranous and muscular defects, avoiding the inherent risks of cardiopulmonary bypass.

The procedure was attempted in 137 patients having congenital defects using Rashkind Umbrella Device (RUD) in 29 patients, Amplatzer ventricular septal occluder (AVSO) in 107 patients, and Detachable Coil in one. All patients were selected using stringent criteria by detailed transthoracic echocardiography and/or transesophageal echocardiography. The location of VSD was perimembranous in 91 patients and was muscular trabecular in 46 patients. Seven patients had left ventricle (LV) to right atrium (RA) communication. Thirty-five patients with perimembranous and two with muscular VSD had aneurysm formation. The patients were 3 to 33 years old, and the diameter of VSD ranged from 3 to 12 mm. The pulmonary to systemic flow ratio was > or = 2:1 in 47 (34.3%) patients.

The procedure was successful in 130 (94.8%) patients, with a success rate of 86.2% with RUD and 97.1% with AVSO. Residual shunt at 24 hours was seen in eight (32%) patients with RUD and in one patient (0.9%) with AVSO. Three (2.8%) developed transient bundle branch block, and two (1.9%) patients had complete heart block. New tricuspid stenosis and tricuspid regurgitation was observed in one patient each with AVSO. After immediate balloon dilatation, the mean pressure gradient across tricuspid valve decreased from 11 to 3 mmHg in the patient with tricuspid stenosis.

On a follow-up of 1 to 66 (mean 35.2 +/- 10.7) months, the device was in position in all. None developed late conduction defect, aortic regurgitation, infective endocarditis, or hemolysis. At 9-month follow-up, the mean pressure gradient across the tricuspid valve was 3 mmHg in the patient with tricuspid stenosis. Complete occlusion of the shunt was achieved in 129(99.2%) patients. One patient with RUD having persistent residual shunt underwent a second procedure with AVSO. Three out of 107 patients with AVSO had an unsuccessful procedure where the defect was perimembranous with a superior margin of defect less than 3 mm away from the aortic valve, and the specially designed perimembranous AVSO had to be retrieved because of hemodynamic compromise due to significant acute aortic regurgitation, whereas in all others, the defect was either > or = 3 mm away from the aortic valve or had aneurysm formation. All seven patients with LV to RA communication showed complete abolition of the shunt.

Thus, in properly selected cases of perimembranous and muscular ventricular septal defects, the transcatheter closure is safe and efficacious using appropriate devices. The success rate is higher with AVSO compared with the previously used devices, as well as more successful for the muscular defects than those that are perimembranous in location.

MONDAY MARCH 29, 2005
EMERALD HALL A

Correlation of Myocardial Index (Tei Index) And Left Ventricular End Diastolic Pressure

Mohammad-Reza Motamedi MD, Mohammad-Reza Khaledian MD, Mohammad-Hassan Namazi MD, Hossein Vakili MD, Morteza Safi MD.

Institution: **Shahid Beheshti Cardiovascular Research Center Iran.**

AIMS / OBJECTIVES: Doppler echocardiography is used to evaluate global myocardial performance. An Index of Myocardial Performance (Tei Index) can be an important prognostic index in heart failure.The purpose of this study was to evaluate correlation of Tei Index (TI) and left ventricular end diastolic pressure (LVEDP).
METHOD: The study group consisted of 38 patients. Each patient underwent ventriculographic evaluation (all had EF£45%). Eighteen patients had LVEDP<15 (14 male,4 female, 57±6 years) and 20 subjects (15 male, 5 female, 56±7 years) had LVEDP³15. Then Tie Index obtained for all patients and was compared.
RESULTS: The mean value of the Tie Index was significantly different between the patients with LVEDP<15 and those with LVEDP³15 (0.55±0.18 VS 0.76±0.19, p<0.001, T=4.1).
CONCLUSIONS: Among patients with systolic heart failure (EF£45%), Tie Index is significantly lower in subjects with LVEDP<15 vs. those with LVEDP³15. Thus Tie Index may be useful for noninvasive assessment of LVEDP in heart failure.

MONDAY MARCH 29, 2005
EMERALD HALL A

WAVELET ANALYSIS OF HEART RATE VARIABILITY. New Method of Studying the Heart's Function

Acharya R*, Hegde BM* , Bhat PS, Rao A*** and Niranjan UC.***

Institution: **Manipal Academy of Higher Education (Deemed University) Manipal 576 119,India ** Karnataka Regional Engineering College, Surathkal, India *** Indian Institute of Science, Bangalore**

Conventional electrocardiogram is the sum total of the millions of cardiac cell depolarization potentials. They are being recorded; using twelve surface leads (ECG), based on the Einthovan's triangle principle. The whole process represents just about a few seconds recording of the above mentioned potentials at any given time. Many times the procedure is done over a period of a day or two; the latter is called Holter monitoring. The graph is then interpreted using linear mathematical rules. This complicated wave structure is artificially split into parts, like the PR interval and ST segment etc. ***Researchers have been looking for better methods to have more positive predictability. The present study is an attempt in that direction.*** "Doctors have been predicting the unpredictable" all these years was the observation of a physicist in a recent study.[1]

No organ of the human body works in isolation, although in reductionist science, organ based specialties have developed to the detriment of patient care! The various organs of the human body work in tandem having been "mode-locked" to one another. Mode locking makes it possible for the most dominant rhythm to control all other rhythms in the human body. The most dominant rhythm is the rhythm of breathing. Heart rhythm is, therefore, mode-locked to breathing. This could be made out in children even by the nurse, called sinus arrhythmia, wherein the pulse goes fast during inspiration and slows down during expiration. However, this becomes less marked as age advances. If one could analyze the heart rhythm more carefully using non-linear methods, one sees this happening even right up to the time of death. The intensity varies depending on the health of the whole system. Heart rate variability (HRV) is one such measure that gives a good indication of the health of the cardiovascular system.

We have gone a step further in this study. Instead of analyzing the whole wave pattern, we have studied the wavelet analysis. The latter is much more accurate measure of the ECG pattern. Coupled with mode locking, represented by HRV, wavelet analysis could assess the heart's function much more accurately. This enables better prediction of the future events possible, although predicting the future with one hundred per cent accuracy in a dynamic organism needs the total initial knowledge of the organism.[2] The latter is hampered by our inability to assess the genotype and the consciousness of the organism with our present knowledge.[3]

PAPERS AND LIVE CASES
11:00 AM-1:30 PM

Panel of Experts: Abdul Samad , Muhammad Ashfaq.
Moderator: Ijaz Ahmed

LIVE CASES

Tannaz Razmi(Iran)
Primary PCI Success Rate As Reperfusion Therapy.

M Reza Motamedi (Iran)
Correlation of Myocardial Index (Tei Index) and Left Ventricular End Diastolic Pressure.

M Saeed Alkhalifa (Sudan)
Rheumatic Heart Disease

LIVE CASES

B M Hedge (India)
Wavelet analysis of heart rate variability. New Method of Studying the Heart's Function.

Dipak K Das (USA)
Redox signaling in the ischemic heart.

LIVE CASES

MONDAY MARCH 29, 2005
EMERALD HALL A

Primary PCI Success Rate As Reperfusion Therapy

Morteza Safi MD, Mojde Alavi MD, Mohammad Hassan Namazi MD, Hossein Vakili MD and Mohammad Reza Motamedi MD.

Institution: **SHAHID BEHESHTI CARDIOVASCULAR RESEARCH CENTER IRAN.**

AIMS / OBJECTIVES: Primary PCI is the method of choice to establish reperfusion in Acute MI patients. Our aim was to determine the success rate of Primary PCI in our Hospital in order to turn it into the first line therapy of AMI patients in centers with established cath-labs in our country.
METHOD: All patients with AMI eligible for thrombolytic therapy were included in the study. Primary PCI was performed on the patients, the achieved TIMI flow was recorded and the patients were followed during their hospital admission for major adverse cardiac events (MACE).
RESULTS: The total number of patients reached 80. 71 were male and 9 were female. Most patients were in the age range of 50 - 59 yrs(30-83).The target vessel was LAD in 64%. Anatomical Success (TIMI 3) was achieved in 94% and the procedural success was 91.3%. Mortality was 3.8%, CABG 1.3% and re-infarction 2.5%. Anatomical success in patients£ 55 yrs was 97.6% vs. 89.7% for those > 55 yrs (NS). Procedural success in patients£ 55 was 97.6% vs. 84.6% for those>55 yrs (NS).
CONCLUSIONS: Regarding the high anatomical and procedural success rate of primary PCI in AMI patients, it can be used safely in our center and is completely superior to thrombolytic therapy. Although the success rate is higher in younger patients, but it can be applied to all age groups. Therefore primary PCI should be considered as the first line therapy for AMI patients in all centers with established equipments in Iran.

PAPERS AND LIVE CASES
2:30 PM-4:00 PM

Panel of Experts: Muhammad Zubair, M Rasheed Chaudhry
Moderator: Nadeem Qamar

LIVE CASES

CN Manjunath (India)
Balloon Mitral Valvuloplasty: Current Trends.

Adarsh Kumar (India)
Clinico-echocardiographic profile of 80 cases of infective endocarditis (IE).

Anil Grover (India)
Trends in Maternal and Peri-natal Outcome in Pregnancy in patients with Chronic Rheumatic Heart Disease: A 15-year experience of 486 patients.

LIVE CASES

MONDAY MARCH 29, 2005
EMERALD HALL A

CLINICOECHOCARDIOGRAPHIC PROFILE OF 80 CASES OF INFECTIVE ENDOCARDITIS (IE)

ADARSH KUMAR, Pushpa Devi, RK Sharma

Institution: **Govt Medical College Amritsar, INDIA.**

AIMS AND OBJECTIVES: IE in valvular /CHD cases is common & increasing in normal hearts due to drug addiction, instrumentation and increased longevity. Aim was to compare the clinical and Echocardiographic pattern of IE in valvular / CHD with that without organic HD.

MATERIAL AND METHODS: 80 cases of IE (M/F -52/28 with a mean age of 36.8 yrs.) were evaluated in last 5 yrs. 57/80 (71.5%) had organic HD(36 RHD;18CHD, 2 prosthetic valves & I MVP)-(Group A). 23/80 (28.5%) had no previous underlying HD (Group B).

RESULTS: 25/57 (43.85%) in Gp A were culture +ve with Gram +ve in majority, fungal in 3 (2 RHD and 1 prosthetic mitral valve) while 13/23 (55.4%) were culture +ve in Gp B with Gram –ve / staphylococci in vast majority and 2 had fungal endocarditis. Vegetations seen in 32/51 (56.14%) in Gp A and 8/23 (33.10%) in Gp B ($p< 0.002$) including one drug addict having TV/PV vegetations with recurrent PTE .Petechae, ecchymosis, splenomegaly & embolisations were more in Gp A than Gp B (38.4% vs. 18.3% $p<0.02$)). Heart failure was more in Gp B than GpA (56.4/36.4% $p<0.02\%$). Endpoint mortality was more in Gp B 7/23-23.6%) vs. 7/57-12 .28% in Gp B (p 0.002).

CONCLUSIONS: IE with native HD and with previously normal Heart has different clinical/Echocardiographic and prognostic features with mortality more in latter Gp.

Trends in Maternal and Peri-natal Outcome in Pregnancy in patients with Chronic Rheumatic Heart Disease: A 15-year experience of 486 patients.

Anil Grover, Rajesh Vijayvergiya, Ajay Bahl, Neelam Agarwal, Harjeet Sawhney, Vanita Suri, Kala Vasistha

Institution: **Post Graduate Institute of Medical Education and Research, Chandigarh 160012, India.**

AIMS: To study the trends of maternal and perinatal outcome in pregnancies complicated by Chronic Rheumatic Heart Disease (RHD).

METHODS: Retrospective analysis of data of 43,023 deliveries out of which 1026 mothers had cardiac illness and were registered in Cardio-Obstetric clinic. Out of these, 707 (69.9%) were suffering from RHD. Complete cardiac- including echocardiographic studies and obstetric data were available in 506 deliveries in 486 patients. Both cardiologist and obstetrician supervised the antenatal and perinatal period.

RESULTS: Out of 486 patients, 304(63.3%) had single valve involvement and mitral stenosis was the most dominant lesion in 89.2%; 171 (38.6%) had undergone surgical intervention or balloon dilatation prior to the conception. Number of patients in class IIIV was 113(22.6%). Mitral valvotomy was done during pregnancy in 48 (9.9%). Incidence of preterm birth and small for gestational age babies were 12% and 18 %. Maternal mortality occurred in 10 (2%) out which 8 were NYHA class III or IV.

CONCLUSIONS: RHD is a common cardiac illness in pregnant female. Mitral stenosis is most common cardiac lesion found among them. RHD especially mitral stenosis is associated with poor maternal and fetal outcome during pregnancy.

MONDAY MARCH 29, 2005
EMERALD HALL A

PAPERS AND LIVE CASES
4:20 PM-6:00 PM

Panel of Experts: MMH.Nuri, Nadeem Rizvi.
Moderator: Mujeeb-ul-Haq.

LIVE CASES

Sunil Kapoor (India)
Stem cell therapy for LV dysfunction following acute MI.

Muhammad Iqbal (Pakistan.)
Palliative care in Advanced Heart Failure.

LIVE CASES

CP Roy (India)
Statin- bulging boundries

Sumera Nasim (Pakistan)
Comparison of Nurse and Physician Determined Clinic Blood Pressure Level.

LIVE CASES

Palliative care in Advanced Heart Failure

Muhammad Iqbal, MD, DABIM

Institution: **Shifa College of Medicine, Islamabad, Pakistan**

Congestive heart failure is very common reason for hospital admission in our country. And as reflected by recent data projections it will be the leading cause of morbidity in developing countries by year 2010. Early CHF is usually well managed and controlled with medications but in advanced heart failure, quality of life is very poor and our patients and their families with limited financial reserves and limited access to health care systems, usually have very difficult and painful end of their lives.

Palliative care is a modality of medicine now well established in western countries, need to be introduced in our part of the world, As it is a multidisciplinary approach to a very sick patient heading towards his last years or months in life. Purpose of palliative care is to make those difficult times easier and tolerable for families and patients.

Recently published reports are suggestive of the fact that knowledge of palliative care is almost negligible in our physicians.

We have to organize ourselves now or we will be too late.

Comparison of Nurse and Physician Determined Clinic Blood Pressure Level

Sumera Nasim, Aamir Hameed, Javed Tai, Hafiz Yasir, Ahmed Qadir, Khawar Kazmi

Institution: **Cardiology section, Department of Medicine, Aga Khan University, Karachi.**

OBJECTIVE: To access, whether there is a difference in the blood pressure readings between nurse and physician measured clinic blood pressure.

SETTING: Cardiology consulting clinics at the Aga Khan University hospital, Karachi.

METHODS: This is a prospective observational study of 100 consecutive hypertensive patients visiting the cardiology clinics. A dedicated person filled a questionnaire, which included demographic details, coronary risk factors, personal, family history and details of medication being taken by the patients were listed. Factors likely to influence BP were also recorded. The nurse measured the initial BP by auscultatory method using a standard mercury sphygmomanometer and later, a physician took the second reading.

RESULTS: Of 100 patients 65% were males. The mean age was 56±14yrs. Family history of hypertension was present in 59%, 67% were dyslipidemic, 55% were diabetics, while 14% were chronic smokers. The mean systolic and diastolic blood pressures for physicians were 151±20 and 81±15 mmHg and for the nurses was 127±25 and 82±15 mmHg respectively. The nurse-physician difference was 24 mmHG for systolic BP *($p < .001$)*. Therapy was escalated in 24% patients. On logistic regression analysis, time to see the physician had significantly influenced physician blood pressure *(p value of 0.03)*.

CONCLUSION: We have found a significant difference in systolic blood pressure between physicians and nurses. This may be due to a "white coat effect" or due to elevation secondary to "waiting" to be seen by the physician.

MONDAY MARCH 29, 2005
EMERALD HALL A

ABSTRACTS APPROVED FOR PRESENTATION

DIAGNOSTIC YIELD OF ATTENUATION AND SCATTER CORRECTION OF THALLIUM-201 MYOCARDIAL PERFUSION SPECT IN THE EVALUATION OF CORONARY ARTERY DISEASE

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Institution: **Punjab Institute of Cardiology, Lahore-Pakistan**

BACKGROUND: The diagnostic accuracy of myocardial perfusion single photon emission tomography (SPECT) is limited by photon attenuation and scattering from the adjacent organs. This results in anterior wall artifacts in females and inferior wall artifacts in males due to breast and diaphragmatic attenuation. The aim of the study was to evaluate the potential benefit of attenuation and scatter correction (AC-SC) of ^{201}Tl cardiac SPECT for the diagnosis of coronary artery disease (CAD) and to demonstrate that AC-SC images are more homogenous in appearance than non-corrected.

METHODS: A total of 34 patients underwent ^{201}Tl cardiac SPECT for diagnosis of CAD. Simultaneous transmission emission protocol (STEP) was carried out using ^{153}Gd line source as a transmission source and ^{201}Tl as an emission source. Scatter correction was done using split second photo-peak (SSP) windows around primary windows for transmission and emission sources. Projection data were reconstructed using 20 iterations of ML-EM algorithm with and without AC-SC techniques. AC-SC and non AC-SC images were evaluated visually as well as by a 20-segment semi-quantitative analysis.

RESULTS: Normalcy/disease detection (%) was 94/72 for AC-SC and 74/67 for non AC-SC images. Specificity/sensitivity (%) was 86/70 for AC-SC and 69/66 for non AC-SC images when all the vessels analyzed overall. For individual vessels specificity in LAD was improved (76 vs.57) in AC-SC images without much change in sensitivity (71 vs.70). Specificity and sensitivity was also improved in RCA and LCx regions with AC-SC. AC-SC and non AC-SC images were concordant in 80.3% and discordant in 19.7% cases. When summed score in various territories was compared, there was significant difference between two image sets in all groups except LAD and LCx in males and RCA in females. Count density profiles in patients with normal angiogram showed improved image homogeneity with AC-SC.

CONCLUSIONS: It was concluded that AC-SC images are more homogenous and there is significant improvement in diagnostic yield of ^{201}Tl cardiac SPECT for diagnosis of CAD with the use of STEP and SSP techniques for attenuation and scatter correction.

Efficacy of telecardiology-guided project in rural Indian primary health center management of acute coronary syndrome: a quality improvement study with utilization of available resources in the community.

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AIMS: Feasibility, safety and efficacy of EKG sent through fax and guided thrombolysis by physicians in the emergency room of a rural hospital where cardiac monitoring or management of management of acute coronary syndrome not available; these constitutes centers where majority of population of India come to. Time saved and improvement in ventricular function at 3 months are cardinal parameters which were evaluated in this study of preCCU thrombolysis.

METHODS: Group A were 21 patients who directly came to a tertiary care center and thrombolysed; in rural hospital Kharar, 21 patients (Group B) were diagnosed to have acute ST elevation myocardial infarction through the use of ECG transmission by fax to a tertiary care cardiologist who analysed and advised the primary physician and patients were thrombolysed by physicians subsequently transported to coronary care unit. Group C were the 21 patients referred to PGIMER for thrombolysis from local hospitals where telecardiology facility was not available. Main outcome measures were, accuracy of diagnosis, adverse events, time saved and left ventricular function.

RESULTS: The mean door to needle time was 22 minutes in Group A, 67 minutes in Group B and 121 minutes in Group C ($P < 0.0001$). Complications were rare and none occurred during transfer. Ejection fraction improved between discharge and 3 months ($P < 0.001$) in all three groups: from 60% to 64.1% in group A, from 56.5% to 58.7% in group B, and from 57.1% to 59.1% in group C.

CONCLUSIONS: The Emergency Room physicians, in close collaboration with the cardiologists, provided adequate standard of pre-Coronary Care Unit diagnosis and therapy. Administration of thrombolytic agents in the district hospital Emergency Room brought about a significant reduction of door to needle time and a significant improvement in left ventricular function at follow-up.

Myocardial Perfusion Scintigraphy in patients with Type II Diabetes Mellitus presenting with non-specific cardiac symptoms

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Institution: **Atomic Energy Medical Center, JPMC, Karachi**

AIM: To investigated the efficacy of stress myocardial perfusion scan in the diagnosis of coronary artery disease in patients with type II diabetes mellitus with non-specific cardiac symptoms.

METHOD: Thirty-four patients (17 males and 17 females, age = 56±16years) with known type II DM and suspected of having coronary artery disease, but no pre-existing history of serious cardiac event (MI or revascularization procedure) were included in this study. The patients underwent MPS as a screening procedure with either Tl-201 or Tc-99m MIBI, after physical or pharmacological stress. After a lapse of 7 months (±2 months) of the initial scan, the patients were followed up and asked if and what hard event they subsequently suffered from.

RESULTS: Of the 19 patients whose DM was under control, 15 (79%, $p<0.05$) had not suffered from a hard event (death, MI or coronary artery revascularization), while 8 (53%, $P<0.05$) of the 15 patients whose diabetes was not under control suffered from a subsequent hard event. Of the patients who had a reversible defect on MPS (15), 8 (53%, $p<0.05$) had a subsequent hard event. Of the 19 patients with a normal MPS 15 (79%, $p<0.05$) subsequently did not suffer any hard event.

CONCLUSION: The findings of this study suggest the MPS has a good predictor of coronary artery disease in diabetics; especially since it has a good negative predictive value if a patient has a normal scan.

Assessment of Diastolic Function Parameters with ECG Gated Myocardial Perfusion SPECT: Correlation with ERNA

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Institution: **Punjab Institute of Cardiology, Lahore-Pakistan**

BACKGROUND: Left ventricular relaxation abnormalities are one of the earliest manifestations of cardiac dysfunction and usually precede systolic dysfunction in many cardiac diseases. Equilibrium radionuclide angiography (ERNA) is an established gold standard for the assessment of left ventricular diastolic function in nuclear cardiology. The aim of this study was to determine the feasibility of assessing the left ventricular diastolic function parameters by edge detection method with ECG-gated single photon emission tomography (SPECT) data and comparison of these parameters with those of ERNA.

MATERIAL AND METHODS: Twenty four patients underwent resting gated myocardial perfusion SPECT and ERNA studies on two consecutive days on Prism 2000XP gamma camera. All patients had EF > 45% and normal sinus rhythm on ECG. SPECT acquisitions were performed at 32 frames per cycle 30-60 minutes after 925 MBq 99m-Tc sestamibi injections. SPECT data were processed with Cedars Sinai QGS program and LV volumes for each frame were plotted. Eighth harmonics of Fourier series were retained for the analysis of LV volume curve. Peak filling rate (PFR) and time to peak filling rate (TPFR) were calculated from the fitted curve and its first derivative. ERNA studies were acquired at the same frame rate after labeling of RBCs with 925 MBq of pertechnitate. ERNA data were processed with Marconi proprietary software using 8th Fourier harmonics for calculating PFR and TPFR values.

RESULTS: Good correlation was noted for PFR ($r = 0.85$, $p < 0.0001$) and TPFR ($r = 0.87$, $p < 0.0001$) determined with ERNA and Gated Myocardial SPECT. Bland Altman plots did not reveal any significant degree of direction bias for both parameters.

CONCLUSION: Left ventricular diastolic functional parameters obtained from 32-frame myocardial gated SPECT correlate closely with those determined with the ERNA at same frame rate.

ACEIs Vs ARBs CARDIOVASCULAR PROTECTION POTENTIAL

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Hypertension, Diabetes, Dyslipidemia and smoking are the major risk factors for CVD. Epidemiological, Clinical and Experimental data suggest that activation of RAAS has most important role in increasing the risk of CV events. ACEIs as compared to ARBs have tremendous potential of reducing the risk for CVD by reducing the risk of MI, Stroke, Hypertension, increasing LV function and reducing Atherosclerosis. My main objective is presentation of the whole data till date comparing cardiovascular protection potential, comparing potential of risk reduction for MI, Strokes, CHF, Atherosclerosis and Diabetes of ACEIs Vs ARBs. The Efficacy, Safety, Benefits Vs Hazards of ACEIs Vs ARBs will be highlighted. Cardiovascular, Vascular, Diabetes and Reno Protection potential by evidence based clinical TRIALS including BURRIS, CARE, RACE, PROGRESS, AASK, LIFE, SCOPE, LIFE Vs SCOPE, VALUE, ISIS IV, CONSENSUS, SOLVD, AIRE, AIREX, ELITE I & II, OPTMALL, VALIANT, HOPE, MICRO HOPE, SECURE, EUROPA, IDNT AND RENAAL Studies will be discussed. Based on the statistical information from the data till date it is concluded that ACEIs has more powerful potential for Cardio, Vasculo, Reno and Diabetes protection as compared to ARBS.

Clinical profile of Myocardial infarction (MI) presenting to Punjab Institute of Cardiology (P.I.C.) Emergency Ward

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Institution: **Punjab Institute of cardiology, Lahore-Pakistan.**

AIMS OF STUDY: To study the clinical profile of MI patients who present to P.I.C. Emergency ward with the diagnosis of 1st episode of myocardial infarction. With special focus on site of MI, risk factors involved, mode of presentation, & correlation between mortality, age and rate of thrombolysis.

MATERIAL & METHODS: This study was conducted in Punjab Institute of Cardiology, Lahore Emergency Ward starting from Feb 2004 till October 2004. A Performa was filled containing data of all pts with 1st episode of Myocardial infarction (MI). Non Q wave MI & old MI patients were not included in this study. It was a descriptive, non-interventional prospective study. S.P.S.S. 12 was used to perform statistical analysis.

OBJECTIVE: To study the clinical profile of patients presenting to Emergency Ward of Punjab Institute of Cardiology with the diagnosis of 1st occurrence of MI and to see frequency of Anterior vs. Inferior wall MI with special reference to risk factors.

RESULTS: A total of 1446 patients were included in the study of which. 1179 (80.9%) were male and 276(19.1) were females. 830 patients had Anterior MI (57.4%), whereas 604 (41.8%) had Inferior wall MI, out of these 604, 72 patients (5%) had Inferior wall with Right Ventricular infarction. A total of 9 (0.6%) & 3 (0.2%) patients had pure Right Ventricular infarction and acute Left Bundle Branch block (LBBB) pattern respectively.

Total Diabetics in this study group were 465 (22.1%) whereas 498 (24.4%) patients were having hypertension. Of these 330 (12.6%) patients had both Diabetes Mellitus & Hypertension. 540 (37.3%) were smokers and out of these 162 (11.2%) patients had Diabetes & Hypertension. Strong family history of Ischemic heart disease was present in 180 (12.5%) patients. A total of 39 (2.7%) patients had diagnosed hyperlipidemia and were on treatment prior to presentation. Obesity was present in 39 (2.7%) patients. No identifiable risk factor was found in 252 (17.4%) patients. 1398 (96.7%) patients had ECG changes consistent with MI at time of presentation. History of coronary artery bypass surgery (CABG) was present in 60 (4.1%) patients. The most common mode of presentation was chest pain i.e. 1209/1446 (83.9%) whereas only 75 (5.2%) had non specific symptoms. The commonest age group having myocardial infarction was of patients between ages 40 & 60 years constituting of 927 patients, 64.1% of the sample size. Patients having age less then 40 were 99 (6.8%), between age 61-75 were 351 (24.3%) and 69(4.8%) were above 75 years of age. 888 (61.4%) patients were thrombolysed while 558(38.6%) were not. Total mortality observed during initial 4 hours stay in Emergency room was 104/1446 (7.2%).

CONCLUSION: Anterior wall MI is more common then Inferior wall MI & females are less commonly involved as compared to males. Chest pain was the commonest mode of presentation. Although majority of patients were thrombolysed with good clinical results but 1/3rd of patients were not and the commonest cause was late presentation. Hence need for more public awareness about symptoms & better logistics availability. Mortality remains high in old subgroup of patients.

SIROLIMUS ELUTING STENT IMPLANTATION IN "REAL LIFE SETTINGS" INCLUDING ACUTE CORONARY SYNDROME: A PAKISTANI PERSPECTIVE

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ACKGROUND: The safety and efficacy of sirolimus eluting stents is currently not well defined in complex coronary lesions and acute coronary syndrome (ACS). In addition there currently exists no published data on the use of drug eluting stents (DES) in Pakistan.

OBJECTIVE: To evaluate the safety and efficacy of sirolimus eluting stents in patients with complex coronary lesions and ACS.

METHODS: A prospective observational study of patients presenting with ACS and stable angina to a tertiary care medical center between Nov 2001 and June 2004. Major adverse cardiac events (MACE) (death, myocardial infarction [MI], repeat revascularization) were assessed in-hospital, at 30 days and 6 months after stent implantation.

RESULTS: Of the 175 patients in the study, 139 (79.41%) were male and 36 (20.6%) were female. Mean age at presentation was 56.05 :t 10.74 years. A total of 320 stents were implanted in 301 lesions (1.06 stents per patient). 133 (76%) patients presented with ACS and 42 (24%) with stable angina. Procedural success was 100%. At 30 days, cumulative MACE occurred in 4 (3.3%) patients. 3 patients presented with non-ST elevation myocardial infarction due to sub-acute stent thrombosis and 1 died of sudden cardiac death. 6 month follow-up was available for all (100%) patients. Only 1 patient had a positive exercise tolerance test at 6 months (clinical restenosis rate of 1. 75%). All other patients were asymptomatic at 6 month follow-up.

RESULTS: Sirolimus eluting stent implantation appears to be safe and effective in patients with ACS and complex coronary lesions with extremely low rate of clinical restenosis. The problem of sub acute thrombosis requires meticulous attention to specific anti-platelet therapy.

Tc-99m MIBI Rest and Reinjection with Nitrate Augmentation Study for the Assessment of Viable Myocardium in Patients with Myocardial Infarction.

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Institution: **Karachi Institute of Radiotherapy and Nuclear Medicine (KIRAN).**

BACKGROUND: The assessment of myocardial viability in patients with chronic coronary artery disease, previous myocardial infarction (MI), and reduced left ventricular systolic function has both prognostic and therapeutic significance. Thallium-20I is considered reliable for the recognition of viable myocardium but Tc-99m MIBI, particularly in combination with nitrate administration, has been demonstrated to give reliable results in the detection of viable hibernating myocardium. The aim of our study was to determine the efficacy of Tc-99m MIBI with nitrate administration for the detection of viable myocardium in patients with MI.

METHODS: Thirty-five patients (31 men, 4 women; mean age 51.91±8.86 years, median=50) with previous history of myocardial infarction (with mean duration of 11.50±11.4, median=4months after MI) were included in the study. All patients underwent baseline rest and Nitroglycerine Tc-99m MIBI myocardial scintigraphy (2 day protocol). 15 out of 34 patients were also submitted for rest and redistribution TI-201 imaging (3 day protocol). The data were reconstructed in transaxial slices and then reoriented into short, vertical long and horizontal long axis slices. The images were qualitatively as well as semi quantitatively analyzed for reversibility by two independent obserevers. The segments with tracer activity of more than 55% as compared to maximum were considered as viable.

RESULTS: In the baseline study with Tc-99m MIBI, 168/245 (68.57%) was viable segments and these were increased to 197(80.40%) in the Nitrate MIBI study (p=0.001 vs. baseline). Total concordance for viable segments detection between Nitroglycerine MIBI and redistribution T1-201 imaging was found in 100 out of 105 segments (95.24%) for 15 patients, with significant kappa =0.746±0.079 SE.

CONCLUSION: The data suggest that use of nitrate augment Tc-99m MIBIO protocol in Cardiac SPECT imaging results in improved detection of viable but hypoperfused segments and achieves results similar to those from standard T1-201 rest and redistribution protocol.

KEY WORDS: Myocardial Scintigraphy, Viable myocardium, Nitrate Augmentation.

Dobutamine Stress Echocardiography as a Prognostic Tool for Future Cardiac Events – AKUH Experience.

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Institution: **Department of Cardiology, AKUH, Karachi.**

INTRODUCTION: The role of exercise and pharmacological stress testing for risk stratification of patients with coronary artery disease is well established. Echocardiographic imaging during or immediately after exercise adds to the sensitivity and specificity of the test. No study is done in Pakistan regarding dobutamine stress echo (DSE) as a prognostic tool for future cardiac events.

OBJECTIVE: To access the usefulness of DSE in predicting future cardiac events.

DESIGN: Retrospective cohort study

METHODS: All the patients undergoing DSE at AKUH from January 2002 – February 2003 were included in the study. Data was collected by reviewing medical records. A predefined questionnaire was filled, containing the demographic, clinical and echocardiographic variables. Data was analyzed by using SPSS software version 12.

RESULT: A total of 197 patients were included in the study with a mean age of 60±11 years. 54% were female. 34.5% patient had >2 risk factors for CAD. Majority of patient achieved 87% of age predicted target heart rate as end point of DSE.

13 (6.6%) had angina, 12 (6.1%) had dynamic ECG changes and 5 (2.5%) had ventricular tachycardia during DSE. Patients were divided into three groups on the basis of DSE results: patients with DSE positive for ischemia (17.8%), patients with fixed abnormal DSE (23.9%) and patients with normal DSE (58.4%). Follow-up was available in 60% patients for 10 ± 3.5 months. 15 cardiac events occurred in 11 patients, Myocardial Infarction (MI) in 4, Congestive Cardiac Failure (CCF) in 5, ischemic symptoms requiring revascularization in 5 and death in 1.

Patients with abnormal DSE have more cardiac events as compared to those with normal DSE i.e. 8.3% vs. 3% for MI, 16.3% vs. 1.5% for CCF, 17% vs. 1.5% for ischemia guided revascularization and 4% vs. 0% for death. Combine hard cardiac events were statistically significant in patients with abnormal DSE (7.7% vs. 4.5%, P-value <0.05)

CONCLUSION: DSE is a useful tool for prognosticating future cardiac events in patients with coronary artery disease.

Patients with ischemic and fixed abnormal DSE are at increased risk of cardiac events as compared to normal DSE over a long term follow-up.

n event free survival for up to a mean period of 10 months was observed in 96% of patients with normal DSE.

Cardiogenic shock in acute myocardial Infarction : Management

Prof Manotosh Panja

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INTRODUCTION: With improvement with ECG monitoring and treatment of life treating ventricular tachycardia now-a-days cardiogenic shock is the leading cause of death in hospitalized patients with myocardial infarction in this reperfusion era. In early 1970 the incidence of cardiogenic shock in AMI was 15 % but now it has decreased up to 5-7%. Despite recent advance in the care of patients with acute onset coronary events, the benefit associated with early use of reperfusion strategies, cardiogenic shock as a complication of AMI still continues to be associated with dismal prognosis.

DEFINITION: The present clinical definition of Cardiogenic shock (CS) includes poor cardiac out put and evidence of tissue hypoxia in the presence of adequate intravascular volume. When hemodynamic monitoring available the diagnosis is indicated by the combination of :

1. Low systolic blood pressure (<80 mm Hg or value 30 MM below the base line level for at least 30 min)
2. As arterio- venous oxygen difference (more than 5.5ml/dl)
3. Depressed cardiac index (<1.8 L/min/m2 BSA)
4. Elevated pulmonary capillary wedge pressure >18 mm Hg.

In AMI the mechanical complication (VSD, MR, and ventricular aneurysm) must be excluded before diagnosis of CS due to impaired LV function can be established.

PATHOLOGY / PATH PHYSIOLOGY: Autopsy studies show that CS generally associated with loss more than 40% of LV myocardium. Majority of patients of CS are found to have thrombotic occlusion of the artery supplying the major part of the recent myocardium.

DIAGNOSIS: Rapid bedside clinical examination, urgent 12 channel ECG, chest X-ray , and Echocardiography is an excellent aid in shorting through the differential diagnosis of CS .Insertion of Swan- Gange catheter useful for initiating and monitoring the therapy and also useful simultaneous assessment of cardiac filling pressure and peripheral perfusion.

MANAGEMENT: Important issue during management of CS are :

1. Restoration of sinus rhythm
2. Maintenance of adequate oxygenation and ventilation
3. Correction of electrolytic abnormalities.
4. Correction of acid base abnormalities.

MEDICAL MANAGEMENT INCLUDES :

1. Ionotropic and vassopressor agents
2. Vasodilators
3. Intra Aortic Balloon pumping(IABP)
4. Thrombolytic therapy
5. Combination of IABP and Fibrinolytic therapy.
6. PTCA
7. CABG
8. Newer Approach: Adjunctive anti inflammatory treatments are the newer horizon of treatment of CS in AMI.

Out come of PTMC in Juvenile Mitral Stenosis

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BACKGROUND: In developing country, juvenile mitral stenosis is most common and has got a rapidly progressive downhill course unless proper measures are taken early.

AIMS: To evaluate the outcome of PTCA in juvenile Mitral Stenosis (MS) in respect of clinical and echocardiographic outcome.

METHODS: We report 35 cases of juvenile MS who have class II-III symptoms and mean mitral valve area (MVA) 0.9± 0.2 on echocardiographicaly and who underwent PTMC in our institute. All procedures were done using INOUE BALLOON (Single balloon technique). Patients were followed up from 6-72 month .

The procedure was successful in all cases. Immediate mitral valve area increased from 0.9±0.2 cm2 to 2.1±0.5 cm2 by echo Doppler study ($p < 0.05$). Mean mitral trans valvular gradient decreases from 27.5 ± 8.3 mm Hg to 6.2 ±2.5 mmHg ($p < 0.05$). 8 patients had mild worsening of mitral regurgitation and 9 had insignificant ASD. There was no mortality. Delayed cardiac tamponade (noted 1 hour after procedure) was developed in one patient who was managed successfully by pericardiocenthesis.

RESULTS: On long term follow up MVA was 1.7±0.3 cm2. 6 patients (17.14%) had restenosis with MVA below 1 cm2. All 6 patients were successfully redilated with post-procedural MVA 1.9±0.5cm2.

In conclusion ,PTMC is a safe, effective and durable procedure for juvenile MS with good long and short term outcome

Left Bundle Branch Block Effect on Systolic and Diastolic Indices of Left Ventricle.

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Institution: **Shahid Beheshti Cardiovascular Research Center Iran**

AIMS / OBJECTIVES: The effect of isolated left bundle branch block (LBBB) on left ventricular systolic and diastolic indices is apparent. This study was designed for evaluation of LBBB effect on left ventricular systolic and diastolic indices in spite of other risk factors.

METHOD: In this study 34 patients with LBBB (mean age 50±7) as the case group were compared with 50 patients without it (mean age 48±9) as the control group. All patients had coronary artery disease documented by angiography. Exclusion criteria were persistent arrhythmia, severe tachycardia, hypertension, severe valvular disease, and age more than 60 and less than 35 years old. Echocardiography was performed and left ventricular end diastolic pressure (LVEDP) was measured during cardiac catheterization

RESULTS: Left ventricular ejection fraction was lower in case group (37.79±9.09 vs. 44.48±11.19, $p<0.01$). Left ventricular end systolic diameter (LVESD) was greater in case group (4.06±0.61 vs. 3.39±0.67, $p<0.001$). Ejection time was shortened in LBBB group (254.25±14.12 vs. 280.49±18.23, $p<0.01$). Isovolumic contraction time was prolonged in case group (84.85±14.06 vs. 55.02±15.11, $p<0.01$). Isovolumic relaxation time was prolonged in case group (114.08±11.6 vs. 90.49±10.19, $p<0.01$). The LVEDP was significantly higher in LBBB group (18.23±5.3 vs. 12.58±4.57, $p<0.01$).

CONCLUSIONS: LBBB has significant effect on systolic and diastolic function in spite of other risk factors such as coronary artery disease.

Coronary Artery Disease in Patients With Valvular Heart Disease

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AIMS / OBJECTIVES: The study was performed to determine the frequency of significant coronary artery disease (CAD) in patients with valvular heart disease (VHD), and in particular its correlation with incidence of angina pectoris and presence of coronary risk factors and Ejection Fraction (EF).

METHOD: Three hundred fourteen patients with VHD who underwent cardiac catheterization and coronary arteriography before surgery between 2000 and 2002 were included in the study. There were 138 males and 175 females.

RESULTS: The incidence of CAD was 27.5%. Mean age of the patients with CAD (61±9.5 years) was significantly higher than pateints without CAD (50.2±11.2 years). The incidence of CAD in patients with AS & patients with MR (42.5%) was higher than other vavular heart disease (21.5%), (p=0.001). Patient with atypical and typical chest pain had 13.9% and 24.1% CAD, respectively (p=0.29). A statistically significant correlation was found between CAD and coronary risk factors: The incidence of CAD was 24.6% in patients without history of smoking VS. 40% in smokers (p=0.029). Fifty-six percent of patients with diabetes mellitus (DM) had CAD VS. 24.5% without DM (p=0.004). Fifty-four percent of patients with hyperlipidemia (HLP) VS. 23.5% of patients without HLPhad CAD (p<0.001). The incidence of CAD in patients with and without hypertension (HTN) were 39.7% and 24%,respectively,(p=0.019).

CONCLUSIONS: These results suggest that coronary angiography may not be an obligatory diagnostic step before valve replacement in patient with lower age who have neither risk factors nor angina pectoris.

ELECTROCARDIOGRAPHIC PATTREN IN PATIENTS HAVING ATRIAL SEPTAL DEFECTS.

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Institution: **Punjab Institute of Cardiology, Jail Road, Lahore.**

OBJECTIVE: This study was designed to evaluate the electrocardiographic waveforms of Atrial Septal Defect patients for an association with crochetage pattern and incomplete RBBB.

MATERIALS AND METHODS: ASDs of Primum, Secundum and Sinus Venosus type were included in this study. From October 15, 2003 till January 15, 2004 a total of 104 consecutive patients of ASD were studied at the Punjab Institute of Cardiology Lahore. Patients were included in the study after confirmation of Atrial Septal Defect on transesophageal echocardiography.

RESULTS: The mean age of the study population was 26.28±11.40 years. Among these 56(53.8%) patients were females and 48(46.2%) patients were males. The study population consisted of 94(90.4%) Secundum ASD patients followed by Sinus Venosus ASD 8(7.7%) patients and Primum ASD in only 2(1.9%) patients. Only 59(56.7%) patients had crochetage pattern in any of the leads while it was absent in 45(43.3%) patients p=0.470. Incomplete RBBB was present in 93(89.4%) patients. It was observed in 3(2.9%) patients in ASD Primum, 82(88.2%) patients in ASD Secundum and 8(8.6%) patients in ASD Sinus Venosus type. P=0.483.

CONCLUSION: Although we did not observe a statistically significant association between crochetage pattern or incomplete RBBB and ASD but the presence of any of these two considerably increases the specificity of the ECG for the diagnosis of an ASD.

KEY WORDS: Atrial septal defect, Secundum ASD, Crochetage, In-complete Right Bundle Branch Block.

Serum Antinuclear Antibodies in Coronary Artery Disease

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Institution: **Shahid Beheshti Cardiovascular Research Center Iran**

AIMS / OBJECTIVES: Inappropriate inflammation is a key mechanism in the development of atherosclerosis. Antibodies against components of the atherosclerotic lesion have been described. High titers of serum antinuclear antibodies in patients with advanced coronary atherosclerosis has also been reported.

METHOD: Serum was prepared from 55 subjects (aged 59±9.3) with at least 50% stenosis of three main coronary arteries (TVD subjects), and 41 subjects (aged52.6±7.6) with no evidence of coronary atherosclerosis (NCA subjects) determined by coronary angiography. Antinuclear antibodies (ANA) were detected by HEp-2 cells method.

RESULTS: In 26.3% of TVD subjects, only 26.5% of the NCA patients (odds ratio 11.67 (95% confidence interval (CI) 3.91 to 17.82; p=1.000). Most ANA positive TVD and NCA subjects had a pattern typical of antibodies directed against nucleolar antigens. The antigen has not yet been identified, but several common extractable antigens were excluded. The presence of ANA was not associated with incidence of prior myocardial infarction among the TVD group.

CONCLUSIONS: The presence of ANA, commonly associated with autoimmune diseases, is not substantially more prevalent among subjects with severe coronary atherosclerosis than those with normal coronary arteries.

NOTES

Prevalence of left atrial thrombus in mitral valve disease: a transesophageal echocardiographic study.

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INTRODUCTION: Rheumatic mitral stenosis with atrial fibrillation (AF) is a common clinical problem in developing countries including Pakistan. It is associated with a very high risk of embolic cerebrovascular accidents, which is reported to be as much as seventeen times greater than in unaffected controls Current study was conducted to document the frequency of occurrence of left atrial thrombus in patients with mitral valve disease.

METHODS: It is a retrospective single centre study conducted at the Aga Khan University Hospital (AKUH). All patients who under went transesophageal echocardiography (TEE) at AKUH between 1999 to April 2004 were included in the study. Patient's record was retrieved through the computerized data retrieval system and a Performa was filled which included patient characteristics and details of TEE.

RESULTS: Baseline characteristics: Total 55 (15 male, 40 female) transesophageal echocardiographic examinations were performed in the study period. Mean age was 44.42 years. Three patients were known hypertensive, 10 had cerebrovascular event in past and 2 patients had mechanical prosthesis at mitral position. Seventeen patients were on warfarin and 8 were taking aspirin. Twenty one patients were in AF at the time of procedure. Three patients had documented episode of atrial fibrillation in the past while in sinus rhythm at the time of presentation and.

Transesophageal Echocardiography Findings: Fifty three patients had dilated left atrium, 21 had dilated right atrium, only one patient had dilated left ventricle and 20 had dilated right ventricle. LV function was normal in all patients. Total of 24 patients had clot. Twenty two of these patients had LA smoke. Seven males and 17 females had LA or LAA clot. Ten patients who were on warfarin had clot.

Spontaneous echo contrast was seen in 35, 22 were in sinus rhythm. Nine patients had mild,18 moderate and 28 severe mitral stenosis, Thirty two patients had MR. MR was mild in 11, moderate in 10 and severe in 11 patients. Twenty patients had aortic valve involvement and severe aortic stenosis was present in 5 while severe aortic regurgitation was seen in 6.

Two with mild MS, 6 with moderate MS and 16 with severe MS had LAA or LA clot. Spontaneous echo contrast was seen in 21 patients with severe MS, 8 with moderate MS and with mild MS. Three patients with severe MR had clot as compare to 11 with mild or moderate MR.Twelve patients who were in sinus rhythm at the time of presentation had a clot in LA or LAA. Seventeen patients were on warfarin at the time of TEE and out of these ten had LA or LAA clot.

CONCLUSION:

- Left atrial thrombus is common in patients with mitral stenosis.
- Large number of patients on warfarin has left atrial thrombus

Prospective Clinical and Echocardiographic Profile of RF/RHD Patients in a Cohort: Raipurrani Study from 1988-2005

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AIMS: Acute rheumatic fever (RF) and its sequel Rheumatic heart disease (RHD) continues to be a major health problem in the developing countries. We prospectively performed a community-based study to investigate the clinical and echocardiographic profile of RF/RHD patients in a closed cohort from 1988 to 2005.

METHODS: A group of 121 villages with a total population of 1,14,610 (1991census) was chosen in year 1988 to study and intervene for RF/RHD with available health resources at local level. The population has grown to 1,40,670 (2001 census). There has been less than 2% population migration in last 14 years. During the period of 1988 to 1992, total 126 cases of RF/RHD were enrolled by active surveillance in the community. Thereafter, from 1993 to 2005, 40 more cases were enrolled via passive surveillance. Serial echocardiographic follow up of these patients were done at PGIMER, Chandigarh- a tertiary care center.

RESULTS: Doppler echocardiography improves the detection of rheumatic carditis. In our study, 20 cases of ARF/recurrence, who had normal cardiac auscultation, were found to have Doppler mitral regurgitation. Among 12 patients of chorea, 3 had clinical and echo proven carditis, while one had Doppler mitral regurgitation. Rest of 8 patients had no associated carditis. Twelve out of 20 patients of subclinical carditis had normal echo on follow up while rest of 8 patients had trivial to mild MR and 3 had additional trivial to mild AR.Twenty six cases were wrongly diagnosed at periphery by health workers or primary care physicians as case of RF/RHD and secondary prophylaxis was started but these were excluded after detail clinical and echocardiographic examination. Five cases had congenital heart disease and eight cases had functional murmur.Patients with valvular lesions behave variably during echo follow-up, the detail of which will be presented. Among the 40 deaths in the cohort, 25 died because of lack of surgery - 11 had significant mitral and aortic valve disease and would have required double valve replacement; 9 had significant mitral valve disease requiring mitral valve replacement, and 5 had significant MS requiring closed or percutaneous balloon mitral valvuloplasty. Nine patients died because of ARF or its recurrence. Three patients died because of penicillin allergy. Three patients died because of non-cardiac reasons.

Penicillin prophylaxis was stopped in the 27 individuals of RF/RHD, who had normal serial echocardiographic examination for at least five years. Twenty-six patients either lost the follow up or were chronic defaulters. Rest of patients was taking regular monthly dose on penicillin.

CONCLUSIONS: Doppler echocardiography improves the detection of subclinical carditis. Subclinical valve lesions, detected only by Doppler imaging can persist and even can progressed. It also improves the diagnosis of RHD. During follow up of patients of acute rheumatic fever with or without indolent carditis, echocardiography is required to decide about the continuation of secondary prophylaxis.

BRAIN NATRIURETIC PEPTIDE IN ACUTE CORONARY SYNDROME: EVALUATION AS AN INDEPENDENT PROGNOSTIC MARKER AND AS GUIDE FOR MANAGEMENT OF HIGH RISK PATIENTS

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BACKGROUND: Recent studies have shown that elevated brain natriuretic peptide (BNP) levels in acute coronary syndrome (ACS) correlate with excess overall mortality. However the optimal treatment strategy for patients with elevated BNP levels remains unclear. In addition, no data currently exists on BNP in Pakistan.

METHODS: Prospective observational study of 110 consecutive patients presenting with ACS to a tertiary care medical center. Patients with concomitant heart failure were excluded. BNP levels were measured a mean of 40 hrs from the onset of symptoms. Clinical characteristics, hospital course and 30 day outcome was assessed.

RESULTS: Patients were divided into two groups based on BNP levels less than or greater than 80 pg/ml. In a sample size of 107, 44 (41.1%) patients had BNP levels <80pg/.ml and 62 (57.9%) had BNP levels >80pg/ml. At one month follow-up, 18 (16.8%) had developed new onset heart failure, 19 (17.8%) suffered. From recurrent ischemic events, and 7 (6.5%) patients had died. At 1 month follow-up, the incidence of heart failure was 1 (2.3%) in the low BNP group, vs 17 (27.4%) in the high BNP group (p value 0.001). The incidence of recurrent ischemic events was 11 (25%) in the low BNP group, and 8 (12.9%) in the high BNP group (p 0.11). Mortality was 0 in the low BNP group and 7 (11.3%) in the high BNP group (p 0.04). In the low BNP group, 30 patients (68.2%) were asymptomatic at 1 month and in the high BNP group, 27 (43.5%) were asymptomatic (p 0.004). For patients in the high BNP group, the presence of adverse outcome at one month was significantly higher for patients treated conservatively versus those who underwent revascularization procedures (p 0.025).

CONCLUSION: Elevated BNP levels in patients presenting with ACS is a significant independent predictor of one month mortality and heart failure. Invasive management i.e. PCI or CABG significantly improves one month outcome in patients with high BNP levels on admission.

MYOCARDIAL PERFUSION IMAGING IN THE EVALUATION OF CORANARY ARTERY DISEASE IN PATIENTS WITH LBBB.

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BACKGROUND: The presence of LBBB constitutes a difficulty for the evaluation of patients with suspected or known coronary artery disease. ECG is non-diagnostic in the presence of LBBB.

MATERIAL AND METHODS: A total of 22 patients with baseline LBBB were included in the study. Images were analyzed quantitatively and visually for the presence of fixed or reversible perfusion defects. 12 had normal coronaries on angiography while 10 had significant coronary artery stenosis in one or more coronary artery territories.

RESULTS: The sensitivity and specificity of Tc-MIBI scintigraphy for the detection of CAD in the LAD territory were found to be 92% and 62.5% respectively when anterior wall and or apical and or septal hypoperfusion was taken to represent CAD in LAD territory. For LCX and RCA it was 90, 88 and 88, 92 respectively.

CONCLUSION: Myocardial perfusion imaging is of great value in the diagnosis, evaluation of coronary artery disease in the presence of LBBB. Further we noted that in contrast to true positive finding, false positive findings are seldom demonstrated in LAD territory.

Role of Myocardial Perfusion imaging in optimal detection of coronary artery disease and its prognostic value in normal cardiac SPECT

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ABSTRACT: OBJECTIVE: To evaluate the role and prognostic value of cardiac SPECT imaging in optimal detection of significant coronary artery disease (CAD).

MATERIAL AND METHOD: 66 patients investigated by simultaneous physiological stress myocardial perfusion imaging (MPI) and diagnostic coronary arteriography. MIBI imaging data were analyzed using a 7 segment left ventricular model and each segment was ascribed to a particular coronary artery .territory. The presence of perfusion defects with MIBI imaging in any coronary artery territories was taken as the diagnostic of coronary artery disease. Arteriography was considered as the gold standard and evidence of 50% stenosis was considered to be significant.

RESULTS: Out of 66 patients, 30 (46%) were diagnosed as the single vessel disease, 24 (36%) as two vessels disease and 12 (18%) as three vessel disease on coronary angiography while on perfusion scan, 26 (40%) were diagnosed as the SVD, 26(40%) as 2VD, 04 (6%) as 3VD and 10 (15%) as normal. The sensitivity, specificity and accuracy of myocardial perfusion imaging were found to be 79%, 92%, and 82% respectively. All patients with significant findings on perfusion imaging (n=56) were treated either by any intervention or by medical therapy while rest (n=10) with normal myocardial perfusion SPECT imaging study were monitored for the occurrence of major cardiac events (i.e. MI, PTCA or death) for eight months period to assess the prognostic evaluation of MPS. Out of these 10 patients, none had given the history of major cardiac events.

CONCLUSIONS: The assessment of myocardial perfusion by MIBI perfusion imaging optimizes the non-invasive detection of coronary artery disease as well it is the better tool for prognostic evaluation of the patient with normal myocardial perfusion scan.

Competency Profile of Locally Manufactured Vs Foreign Manufactured Clopidogrel in Patients of Ischemic Heart Disease. (CLAP - IHD) - II

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OBJECTIVE: The primary objective of this study is to test the hypothesis that the antiplatelet effects of loading dose of Lowplat 600 mg (8 tablets) given once is equivalent/comparable to the antiplatelet effects of loading dose of Plavix 600 mg (8

PATIENTS AND METHODS: This is a double blind, randomized, cross over, comparative study, to compare the safety and efficacy of Lowplat versus Plavix in adult subjects suffering from Ischemic heart disease presented at National Institute of Cardiovascular Diseases (NICYD), Karachi.

RESULTS: Mean platelet aggregation inhibited by 45 - 62% using 20 umol/L ADP which is statistically significant and comparable.

CONCLUSION:

01. Both drugs were found to be equally effective and comparable in both study groups.

02. Low cost drugs to be preferred if there efficacy is upto the required standard.

A Randomized, Placebo Controlled, Double blind, Cross-over study to Evaluate the Efficacy and Safety of Oral Sildenafil Treatment in Severe Pulmonary Artery Hypertension

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INTRODUCTION: Severe pulmonary artery hypertension (PAH) is a disorder with limited treatment options. Several new drugs have recently been tried to treat PAH. Oral sildenafil has shown promise in the treatment of PAH in several uncontrolled studies but controlled trials have been few. In this randomized, placebo-controlled study, we evaluated the efficacy of oral sildenafil in idiopathic pulmonary artery hypertension (IPAH) and PAH due to Eisenmenger syndrome.

MATERIALS & METHODS: This was a randomized, double blind, placebo controlled cross-over study. The primary end point of efficacy was the improvement in distance covered in 6 minute walk test (6MWT).Secondary end points were reduction in pulmonary artery pressure (PAP) as measured by Doppler Echocardiography after 6 weeks of treatment, improvement in clinical condition, New York Heart Association (NYHA) class, and exercise duration and Mets achieved on modified Bruce exercise protocol. Patients were randomized to receive placebo or sildenafil in a double blind manner for 6 weeks and after a washout period of 2 weeks, were crossed over.

RESULTS: Ten cases each of Idiopathic pulmonary artery hypertension (IPAH) and PAH due to Eisenmenger syndrome showed significant improvement in primary and secondary end points. Distance covered in 6 MWT improved from 262.05 ± 98.99 meters to 358.95 ± 96.51 meters ($P<0.0001$). PAP improved from the baseline of 98.6±5.3 mmHg to 68.5 ± 4.1 mm Hg ($P<0.0001$), NYHA class improved from 2.65 ± 0.59 to 1.55 ± 0.51 ($P<0.0001$), exercise duration from 6.270 ± 0.729 minutes to 9.985 ± 0.582 minutes ($P<0.0001$), and Mets achieved from 3.32 ± 1.57 to 6.04±1.87 ($P<0.0001$). There was no significant fall in BP with placebo and sildenafil and no serious side effects were observed in the study.

CONCLUSIONS: Oral sildenafil significantly improved the symptomatic status, exercise capacity, NYHA class and hemodynamic parameters of patients with severe PAH due to IPAH and Eisenmenger's syndrome and may be safely used as a primary or adjunctive treatment of the same.

POSTERS

Tissue Doppler Imaging and Transmitral Doppler Echocardiography Values in the Estimation of Left Ventricular End Diastolic Pressure

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AIMS / OBJECTIVES: Heart failure (HF) has become a major clinical and public health challenge. In spite of decrease in coronary artery diseases and stroke, prevalence of heart failure is increasing. Recently, doppler echocardiography is suggested to be used as a noninvasive method to evaluate intracardiac pressures. This study is aimed to assess whether mitral annulus movement velocities, as assessed by tissue Doppler imaging and transmitral Doppler echocardiography, are correlated with left ventricular end-diastolic pressure or not.

METHOD: Cardiovascular clinic of Shaheid Modarres Hospital was used to select patients. subjects who were candidates for coronary angiography without any valvular heart disease were enrolled in the study. Left ventricular end-diastolic pressure (LVEDP) was measured by cardiac catheterization and the day after catheterization, the patients were examined by VINGMED System Five echocardiography. Single operator unaware of catheterization results performed echocardiography. E value was calculated in 5 end-expiratory cycles. Ea value was calculated from lateral Mitral annulus motions.

RESULTS: One hundred and ten consecutive patients referred for cardiac catheterization (mean age of 56.8 years) underwent simultaneous Doppler examination and invasive measurement of LV pressure. The E/E_a ratio correlated well with LVEDP ($P<0.001$, $r=.4$) and the correlation was not significantly dependent on the left ventricular systolic function ($EF^3 50\%$: $r=0.4$, $P<0.005$; $EF<50\%$: $r=0.4$, $P<0.05$). This correlation was independent of gender. The E/E_a ratio of less than 8 best discriminated elevated (LVEDP>12) from normal LVEDP with a sensitivity of 73.5%, specificity of 57.8%, PPV of 75.75% and NPV of 55%.

CONCLUSIONS: Tissue doppler imaging is an important improvement in echocardiography which provides quantitative data about myocardial movement. Our findings with acceptable sensitivity and positive predictive value suggest E/Ea measurement by transmitral doppler and tissue doppler imaging would be a non-invasive alternative method for evaluation of LVEDP.

Ticlopidine Versus Clopidogrel For Stent PCI

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AIMS / OBJECTIVES: The combination of a thienopyridine and aspirin has become the standard of care after intracoronary stenting. Clopidogrel appears to be better tolerated than ticlopidine and may be associated with less adverse cardiac events. We assessed the tolerability and efficacy of 4 weeks therapy with ticlopidine and aspirin in comparison to clopidogrel and aspirin after coronary stent implantation.

METHOD: Six hundred patients with successful intracoronary stent implantation at our institution were randomly assigned, in addition to aspirin, to receive either ticlopidine (n=319) or clopidogrel (n=281) in a single blind randomized clinical trial. Drugs were started 3 days before PTCA (clopidogrel 75mg/ day, ticlopidine 250mg/ BD). Loading dose of drugs or IIb-IIIa blockers was not used in any patient.

RESULTS: The primary end point of early drug discontinuation occurred in eight patients (2.5%) in the ticlopidine group and one patient (0.4%) in the clopidogrel group (p=0.02). Major adverse cardiac event (Myocardial Infarction, death and target lesion revascularization) occurred in 15 patients (4.7%) in ticlopidine group and 14 patients (4.9%) in the clopidogrel group. (p=0.9)

CONCLUSIONS: there was no significant difference between two groups regarding cardiac events. The only superiority of clopidogrel was its tolerability and lesser minor non cardiac events (especially skin disorders).

Evaluation of Plasma Homocysteine level in CAD patients

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AIMS / OBJECTIVES: Plasma homocysteine (Hcy) level has been suggested as a primary risk factor for coronary artery disease (CAD). This case-control study was performed to investigate the association of plasma (Hcy) level with presence of CAD and its severity and extension.

METHOD: Two-hundred and twenty subjects aged 20-70 years old who underwent coronary angiography were included in this study in two groups; 110 patients who had at least one coronary artery stenosis ³50% (case) and 110 subjects with normal coronary arteries documented by angiography (control). Total plasma Hcy levels were measured by high performance liquid chromatography (HPLC). The severity and extension of coronary artery involvement was identified according to Frisinger index and the number of involved vessels respectively.

RESULTS: Mean plasma Hcy value was 15.23 micromoles/l in case group and 14.74 micromole/l in controls (P=0.9). After adjustment for other CAD risk factors, no increased risk for CAD could be associated with increased Hcy levels. Mean plasma Hcy level was greater in men than women (17.4 m mol/l versus 12.66 m mol/l with P=0.002). In older women plasma Hcy level was slightly higher (12.1 m mol/l in women <60 yr. versus 14.4 in women ³ 60 yr. P=0.1), whereas plasma Hcy level in older men was lower (18.4 m mol/l in men <60yr. and 14.7 m mol/l in men ³60yr, P=0.08).

CONCLUSIONS: No association was detected between severity and extension of CAD and Hcy level in this study.

Acute Myocardial Injury After Septal puncture In A 10 Year Old Child.

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10 years old child taken to Cath table for PTMC. Immediately after Atrial Septal Puncture & Passing a Mullin's Sheath, patient developed Hypotension and bradycardia. TPM lead was placed in RV with ST'! in I, avl & V leads. Left Ventrculogram showed only Contraction of Anterobasal Segment & Aortogram showed filling defect in LAD. Intracoronary Streptokinase was given. Patient became Hemodynamically Stable with resolving ECG & L Ventriculogram showed normal contracting Ventricular Segments.

A Case Of Late-Onset Warfarin-Induced Skin Necrosis In The Absence Of Common Risk Factors

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ABSTRACT : Skin necrosis is a rare but serious side-effect of warfarin treatment. With the increasing number of patients anticoagulated for prevention of thromboembolic events, it is necessary to consider this serious complication in appropriate settings. Although the exact mechanism is not clear, some conditions have been described in association with warfarin induced skin necrosis. We present the case of a 48 year old man treated with warfarin following mitral valve replacement. The patient developed full thickness skin necrosis in the second month of warfarin therapy. He was investigated for known conditions associated with this complication. He received LMWH (Enoxaparin) till healing of the wounds and warfarin was re-instituted for him then by a low-dose schedule.

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