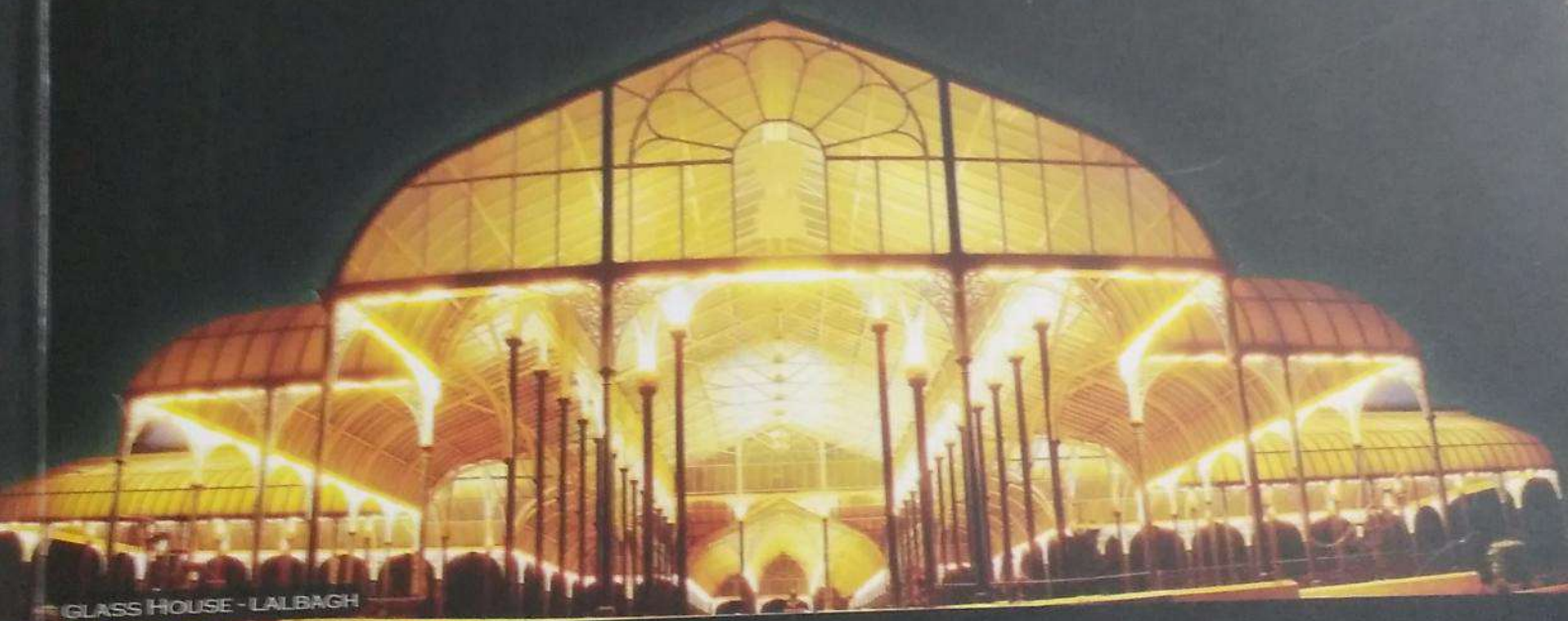




17TH ANNUAL CONFERENCE - ISECT CON 2017 BENGALURU

SOUVENIR



GLASS HOUSE - LALBAGH



THEME: "GOAL DIRECTED PERFUSION"
24TH & 25TH FEB 2017



J.N.TATA AUDITORIUM, IISC, BENGALURU



ISECTCON - 2017
B E N G A L U R U



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ORGANIZING COMMITTEE MEMBERS



Mr. Krishna Prasad T H
Organizing President



Mr. PVS Prakash
Organizing Secretary



Mr. Sudheer Kumar
Joint Secretary



Mr. Sudhakar N
Joint Secretary



Mr. Senthil Kumaran Dhanakoti
Treasurer



Mr. Gopal Naidu Pasam
Scientific committee



Mr. Elayaraja B
Scientific committee



Mr. Madhan Kumar S
Scientific committee



Mr. Gopu.S
Scientific committee



ORGANIZING COMMITTEE MEMBERS



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Food and Transport



Mr. Umashankar R

Food & Transport



Mr. Doraibabu

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Mr. Deepak V J

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Mr. Manjunath L

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Mr. Praveen B K

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Ms. Lakshmi Gopinadh

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ORGANIZING COMMITTEE MEMBERS



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Organizing Committee



Mr. Angel Johns

Organizing Committee



Mr. Sunil Mekala

Overseas Co-ordinator



Mr. Naveen G N

Overseas Co-ordinator



Mr. Sunil Kumar

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Mr. Wilson

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WELCOME MESSAGES



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MESSAGE FROM THE CHIEF GUEST



Extra Corporeal technology is one of the greatest innovations that have taken place in the last century in the area of cardiovascular surgery. ISECT CON 2017 on 24th & 25th February, organized by "India Society of Extra Corporeal Technology" will definitely train more and more of technologist, and other paramedical courses fellows, on this modality which will definitely adds to better skill, interpretation which will have implication on outcome of various surgical procedures. Bangalore weather will add glamour and flavor to the conference.

The conference will bring together the technological specialists in the field of cardiac perfusion from India and abroad who will exchange their valuable views in this era of evidence based cardiovascular medicine and also provide a greater opportunity to understand each other culture, social behavior and to make long lasting friendship with an ultimate objective of achieving quality care and better outcomes

"Great Learning comes from Experience; Experience comes through mistakes and bad decisions". Decision Making is more important than performing the procedure and surgical skills. The team concept is the need of the hour for better results.

Sri. P.V.S.Prakash, Organizing secretary and Sri. Krishna Prasad.T.H, organizing President of the conference with their vast wisdom and knowledge in perfusion technology will provide a great academic platform for all the delegates through this National Perfusion Conference.

Wishing the ISECT CON 2017 conference all success.

With warm personal regards

Dr.C.N.MANJUNATH.MD.DM

Professor and HOD of Cardiology

Director, Sri Jayadeva Institute of Cardiovascular sciences and Research

Bangalore.



MESSAGE FROM THE CHIEF GUEST

I am happy to learn that the 17th Annual Indian Perfusion Conference is being organized by Indian Society of Extra Corporeal Technology on 24th and 25th February 2017 at J.N. TATA Auditorium IISc, Bengaluru with an interesting theme - Goal directed Perfusion.

we are witnessing a trend where the increasing use of less invasive methods is shifting the practice away from open surgery toward the interventional techniques. It is this openness and development of skills to adapt the new technologies that has spurred the phenomenal growth of Perfusion Technology as a specialty . Thus, honing the skills and developing the will to adapt are equally significant to propel Perfusion Technology into the future that will be dominated by robotics and their ilk . In spite of increasing number of off pump surgery, the role of perfusion technology continues to be relevant.

I am sure that the 17th Annual Indian Perfusion Conference will provide sufficient opportunity to deliberate on the issues of future and the set the growth of this discipline on firmer footing.

I hope that the Magazine being released will be interesting and will bring out the hidden talents of the students.

I also greet all the participants, who will be attending this Conference and wish the Conference a grand success.

Best wishes,

Dr. K S Ravindranath

Vice Chancellor,

Rajiv Gandhi University of Health Sciences, Bengaluru,

Karnataka



MESSAGE FROM THE CHIEF GUEST



Dear Friends,

"There is an increasing come back of On-pump CABGs and an increasing use of ECMO, & bridging support devices like Impella and bridging or destination devices like LVADs and BIVADS needing someone with knowledge & experience to interface between hospital and home (for patients, clinicians, hospitals & industry),I can also sense a growing possibility of a perfusionist's role in the ICUs, administration, industry etc; Today's perfusionist should be curious and brave to capture future opportunities and the educations and trainings needed for them. He should not loose initiative by lamenting about his shrinking role due to off pump CABGs. In the near future, there also will be disruptions created by the GRIN technologies in healthcare and there will be opportunities hidden in them and their sustainance. The perfusionists today must keep themselves well informed of all the changing technologies and must be shrewd and brave enough to seize them"

Best Wishes,

Dr. Vivek Jawali

Chairman, Cardio-vascular Sciences,

Fortis Hospitals,

Bengaluru.



MESSAGE FROM THE CHIEF GUEST

As a part of my profession I used to get request from doctors and Hospitals to help in arranging "Green Corridors" for transporting donor hearts to recipients. During those times I came across these young professionals called "Perfusionist" who takes the harvested donor hearts to the recipient Hospitals. I also came to know that Perfusionist supports life during open heart surgeries using Heart Lung Machines and offer long term supports in the Intensive care units with Extra Corporeal Membrane Oxygenation (ECMO).

During my police training I have been fascinated by human anatomy and functioning of Human Organ systems during my sessions in the forensic laboratories. I learned from World Health Organization Statistics that India requires around 2.5 Million Heart Surgeries in a Year but we end up doing only around 2 lakh surgeries in a year. This is mainly because of lack of infrastructure, inadequate trained personnel and financial constraints.

I am sure during your scientific sessions you will be deliberating as to how to be innovative and cost effective and arrive at solutions on the best techniques in your profession according to the country's requirements. I personally give lot of importance to physical fitness and being a long distance runner I urge the youngsters to indulge in physical activities and stay healthy so that you can serve others with great enthusiasm and zeal.

Best Wishes,

Kasim Raja

Assistant Police Commissioner, Traffic,

Bengaluru.



Dear Friends,

Greetings from Narayana Health!

I would like to take this opportunity to congratulate the Indian Society of Extra Corporeal Technology (ISECT) for organizing their annual conference in the Garden city of Bangalore. It is my privilege watching the profession of Clinical Perfusionist grow and mature in the last 26 years.

The profession of Clinical Perfusionist started along with the invention of heart-lung machine and open heart surgery as “**Pump Technicians**”. Today clinical perfusion has matured into a major specialty where surgeons like us depend entirely on taking care of the lives of our patients during complex heart operations lasting for 4-6 hours under Cardiopulmonary bypass, I distinctly remember my teachers, some of the doyens of cardiac surgery in England giving the instruction to the Perfusionist about what flow they need to maintain and what adjustments they wanted during Cardiopulmonary bypass. However, most of the surgeons of my generation performing complex heart operations are in no position to tell the Perfusionist on how to run the heart-lung machine since it has become extremely complex and needs phenomenal expertise.

When the off-pump bypass was getting standardized Perfusionist were developing insecurity. However, today Clinical Perfusionists are the people who manage ECMOs, LVADs, RVADs, BiVADs, IABP and many other circulatory supporting devices which will be unleashed in the future. With the increasing life expectancy we believe that Left Ventricular Assist Device (LVAD) will become the commonest implant on the human body and Perfusionists with their vast knowledge of artificial circulation are the best people to manage the artificial circulatory support devices. It is heartening to see Perfusionists managing ECMOs in different locations of the country.

As these interventions become standard, as the number of cardiac interventions increase, Clinical Perfusionists will play a dominant role in the art of healing. It is a matter of time before Indian hospital groups will start establishing, high-tech hospitals across Asia, Africa and Latin America. Massive expansion of tertiary healthcare which is desperately required in developing countries will only increase the employment opportunities for the young budding Perfusionists. I would like to request all the senior Clinical Perfusionists to concentrate on training the skilled, passionate and dedicated Clinical Perfusionists for the future.

With warm regards,

Dr. Devi Shetty

Chairman, Narayan Health, Bengaluru



WELCOME MESSAGE



It gives me immense pleasure to invite you all to the 17th Annual conference of Indian society of extra corporeal technology, ISECTCON 2017, being held in our beautiful garden city of Bengaluru. I am extremely proud and happy that our Department of perfusion technology at Sri Jayadeva Institute of Cardiovascular Sciences and Research is organizing the conference under the able guidance of Mr. Krishna Prasad.

The conference has a fantastic scientific programme lined up with extensive topics ranging from congenital, current issues of hemodilution, making perfusion technology safer, recent trends in MICS, complex aneurysm surgeries and also involving current technology such as Smart phones! We always learn from our failures and the scientific feast includes this important aspect also.

I once again welcome you all to the conference and wish ISECTCON2017 all the success!

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Dr. Giridhar Kamalapurkar

Professor & Head, Dept. of CTVS,

Sri Jayadeva Institute of

Cardiovascular Sciences & Research

Bengaluru.



WELCOME MESSAGE

Dear Friends,

It's the time of the year when the entire force behind Extra Corporeal Technology comes together again at the 17th Annual Conference of Indian Society of Extra Corporeal Technology.

The Cardiac Surgical space has been constantly evolving, but this change has been the most rapid in the last few years. The advent of catheter based technology into the realm of structural heart disease will create new challenges both to surgeons and perfusionists alike. Likewise the applications of Extra Corporeal technology is no longer limited to cardiac surgery and is expanding into many facets of critical care. These newer developments should not only challenge but also inspire us into looking at additional spheres of applicability.

I believe that any perfusion meeting should include the following elements: It should be fun, it should be informative and the participants should leave with both a vision of the future and a renewed sense of enthusiasm and commitment to both patient care and the profession.

I hope ISECTCON 2017 will meet these goals for you and wish the program a grand success.

Best Wishes

Dr. Sathyaki Nambala
Chief Cardiac Surgeon
Apollo Hospitals, Bengaluru



Message from the ISECT President

Dear Friends,

On behalf of the INDIAN SOCIETY OF EXTRA CORPOREAL TECHNOLOGY and Organizing committee of ISECTCON 2017 Bengaluru, it gives me immense pleasure to welcome you all to the 17th annual conference of Indian society of extra corporeal technology on 24th and 25th February, 2017.

My best wishes to Mr. Krishna Prasad, Mr.PVS Prakash and their team for the herculean task ahead and publication of the souvenir all success.

I wish the conference all success.

Regards,

Dr.Kamla Rana

PRESIDENT- ISECT.



Message from General Secretary ISECT

On behalf of our colleagues and Indian Society of Extra Corporeal Technology (ISECT) we extend a warm invitation to the 2017 Annual Scientific Meeting i.e. ISECTCON2017Bengaluru held this year in Bengaluru from 24 to 25 February, which includes prompt keynote presentations, Oral talks, Poster presentations and Exhibitions.

Our aims is to aggregate researchers, academicians and scientists from the perfusionists community and create an avenue towards robust exchange of information on technological advances, new scientific achievements and the effectiveness of various regulatory programs towards perfusion. Bringing together the professors, researchers and students in all areas of cardiac surgery and to provide an international forum for the dissemination of original research results, new ideas and practical development experiences which concentrate on both theory and practices.

Many sessions will concentrate upon innovation, new technologies and the future direction of cardiac surgery. There will be topics to pique the interest of all – from those at the beginning of their training in our specialty to those with a wealth of experience.

The focus of this year's meeting is set firmly on the exciting and challenging future ahead for our specialty. The scientific program paves a way to gather visionaries through the research talks and presentations and put forward many thought provoking strategies in perfusion technology.

A major feature of the meeting is an inclusive trade and technical exhibition providing delegates with information around technological advances and innovation. The role of industry in the development of new technologies is crucial to the ongoing modernization of our specialty and we encourage you to explore the exhibition.

In recent years, cardiac devices have been developed which helped for replacement and repair therapy for the treatment of cardiac disorders. Robotic surgeries are introduced for the cardiac surgery which has been beneficial in the wide range. Cardiac surgeries market is been developing every year.

We look forward to seeing you at the ISECTCON2017 Bengaluru

Mr. Chhipa Usmangani Y.
General Secretary ISECT



Message from Organizing President's Desk

Dear Colleagues,

It gives me great Pleasure to welcome you all to the garden city, On Occasion of the 17th Annual Conference of Indian Society of Extracorporeal Technology.

After a breach of 11 years, yet again we are going to meet in Bengaluru. The members who have visited Bengaluru for various reasons you may have realized how Bengaluru has grown into a cosmopolitan city over the years beyond anybody's imagination. Bengaluru has developed into an intellectual capital and it is the destination for global health care in world. Many job opportunities have been created in Bengaluru. This has made an impact on its infrastructure which you might have already realized.

You would agree with us that organizing an ISECT Conference is a formidable task. We had the disadvantage of rescheduling the conference due to "International Aero show" event that took place last week.

The response from the delegates has been overwhelmingly positive, I know you all love to visit Bengaluru as this is an opportunity to brainstorm and share the knowledge as well as enjoy and relax.

The organizing committee has worked hard to facilitate the delegates to meet their objectives. However I would like to remind you that the scientific layout has a wide variety of subjects to be covered in various sessions like scientific Paper Presentations, Guest lecture, Debates, and Quiz. Since "GOAL DIRECTED PERFUSION" being the theme of the conference lot of time has been exclusively set aside for this purpose.

Inspite of our best effort there may be few shortcomings. Be generous and magnanimous to forgive us for such short comings. It is time to strengthen our friendship, shares scholarship and enjoy camaraderie. In our city we do not say good bye but say "**MattheBhetiyagona**" "**Meet you again**". Do enjoy the sounds and sights of Bengaluru.

T.H KRISHNA PRASAD

Organizing President
ISECTCON 2017



Message from the Organizing Secretary's Desk



Dear Friends,

It gives immense pleasure to welcome you all to the 17th Annual conference of ISECT called "ISECT CON 2017 Bengaluru" held at J.N.TATA Auditorium in the prestigious Indian Institute of Science Bangalore on 24th and 25th of February 2017. Our Organizing Team has been working tirelessly for the past one year for the success of the conference and are looking forward to welcome you for an enriching experience in terms of exchange of knowledge and techniques.

We are at the forefront of disruptive technological changes which happens at a very short time frame. The Scientific techniques which are considered latest becomes obsolete very fast. Nokia, Black berry and Konica are few examples of giants fallen down due to technological disruptions. Even in cardiac surgery technological changes happens at a very fast pace. Many congenitals do not reach the operating table as we are able to correct in the catheterization laboratories through arterial and venous punctures without opening the chest. The perfusion technique becomes more challenging as we need to address a very young patients (neonates) and very elderly patients and mimic the physiology as much as possible to achieve the best results.

Let us use this scientific programme to learn unlearn and relearn, discuss and debate how best we can adapt to the changes and remain relevant. In order to encourage students and young perfusionist who are our future, we have special programs for them in the form of quiz and debates. We have also arranged some gala dinners in the evenings which I am sure you will enjoy under the pleasant weather of Bangalore. Looking forward to meet you at the venue.

Yours Sincerely

P.V.S.Prakash



Message from the Scientific Committee Team

Dear Seniors, Colleagues and all ISECT members,

It is our pleasant responsibility to be a part of 17th Annual conference of our society to be held in this year at the Garden City of Bengaluru.

We, the scientific committee invite all the delegates to this wonderful event held at J.N.TATA Auditorium in the prestigious Indian Institute of Science, Bengaluru on 24th and 25th of February 2017. We assure you that, these scientific sessions can improvise your technical skills during complex situations at your professional work.

We have incorporated **best guest lectures** in between the scientific sessions. We also have taken special interest in selecting **best abstracts** to make these scientific sessions as feast to our perfusion community. We have introduced **Debate sessions** and **Quiz programme** to encourage more interactions between the delegates and presenters.

We hope that all the guest lectures, paper presentations, poster presentations, debate sessions and quiz programme will enhance your enthusiastic minds.

We wish all the participants, enjoy with high level scientific brainstorming sessions, hospitality and social interactions.

We welcome one and all..... to ISECTCON 2017, BENGALURU.



Mr. Pasam Gopal Naidu,
Head of Scientific
Committee



Mr. Elayaraja B



Mr. Madhan Kumar S



Mr. Gopu.S



And the Life time achievement award goes to

- 1) Mr. Shankar R Gupta LM No : - 096**



Mr. Shankar R Gupta completed his B.Sc. in Zoology and joined the Medical research center Bombay Hospital, Mumbai in 1978 where he was trained in perfusion technology. He has an enormous experience of 39 years in the field of perfusion technology. He got retired after attaining the age of superannuation from the institute. Now, he works as a consultant perfusionist for Wockhardt group of Hospitals and Bhakti Vedant Hospital Mira Road, Mumbai.



- 2) Mr. Selvaraj D LM No : - 127**

Mr. Selvaraj D has total of 33 years experience in Cardiac Surgery. He has completed 10,000 Cardio Pulmonary Bypass Runs while working at Apollo Hospitals Chennai. Selvaraj Completed his Diploma in Perfusion Technology from IACTVS (Indian Association of Cardiovascular and Thoracic Surgeons) in 1993. He has worked with renowned surgeons like Dr. K.M Cherian, Dr. Girinath and Dr. Solomon victor. He started his Perfusion career from the scratch when no precedents was available.



- 3) Mr. Balakrishnan K LM NO : - 058**

Mr. Balakrishnan K is Science Graduate specialized in Chemistry .He completed his Diploma in Perfusion Technology from IACTVS (Indian Association of Cardiovascular and Thoracic Surgeons) in 1993. He has a total experience of 30 years in cardiac surgery. He is currently working in Calicut medical college hospital as a chief perfusionist. He is the course co-ordinator for the perfusion courses.



BEST SCIENTIFIC PAPER AWARDS TO BE WON AT ISECT CONFERENCE, BANGALORE.

1. Late Dr. Gopinath Memorial Award for best paper presentation - Gold Medal
Sponsored by ISECT
2. Late Mrs. Kaushalya Devi Mahajan Memorial Award - Gold Medal Sponsored by
J. Mitra and Bros. New Delhi
3. Mr. M. P. Singh Meritorious Paper Award Cash Prize of Rs. 2000/- Sponsored by
Mr. Maheshpal Singh, Jaipur
4. Late Dr. Solomon Victor Memorial Award Cash Prize of Rs. 2000/- Sponsored by
Mr. Kuppu Swamy, Chennai
5. Late Mrs. RajaLakshmi Krishna Swamy Memorial Award - Cash Prize of Rs. 2000/-
Sponsored by Mrs. SriJayanthi, Chennai
6. Best Paper presentation Award for upcoming young perfusionist Cash Prize of Rs.
2000/- Sponsored by Mr. K. MadhuSudan Rao, Hyderabad
7. Best Poster Presentation Award Cash Prize of Rs. 2000/- Sponsored by Mr. S.
Anandhan, Vellore

All the above awards carry Momentos and certificate from ISECT



PROGRAMME SCHEDULE



ISECTCON - 2017
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JN TATA Auditorium, Indian Institute of Science, Bengaluru

PROGRAMME

Friday, 24th Feb 2017

START – END	Programme	Speaker	Chairpersons
07:30 - 08:20	Registration		
08:20 - 08:30	Prayer / Welcome Speech		
08:30 - 08:40	Practice of Perfusion – are we overlooking / overdoing it ???	Mr. Suresh Babu Robert, Dubai Hospital, Dubai, UAE	Mr. Avinash V Moreshwar Mr. Albert Jayakumar Davis
Pediatric Perfusion Techniques			
08:42 - 08:52	Cardio Pulmonary Bypass using Direct Thrombin Inhibitor in Pediatric Cardiac Surgery	Mr. Rajeev Gupta, AIIMS, New Delhi	Mr. Avinash V Moreshwar Mr. Albert Jayakumar Davis
08:54 - 09:04	Perfusion Strategy Influencing outcome in Arterial Switch Operations – our experience	Ch Madhu Mohan, Star Hospitals, Hyderabad	
09:06 - 09:16	Pediatric non cardiac ECMO Expanding the horizon for perfusionist	Mr. Suresh Siliveri, KIMS, Hyderabad	
09:18 - 09:28	CPB in Pediatric patients with Sickle Cell Hemoglobinopathy-Report of 8 cases	Analya.K, MMM, Chennai	
09:30 - 09:40	Strategies to minimize Pulmonary complications in cardiac surgery with Cardio Pulmonary Bypass	Mr. Saravana Perumal, Narayana Medical College, Nellore	
09:42 - 09:50	Coffee / Tea Break		
09:50 - 10:10	Guest lecture: Lessons from the Past to the Future	Dr. Varun Shetty, Cardiac Surgeon, Narayana Health, Bengaluru	Mr. Ganapathi Bhat Mrs. Srijayanthi Krishnaswamy
10:12 - 10:32	Guest Lecture: MICS Perfusion-Pitfalls to Perfection	Dr. Bharat Dubey, Senior Consultant & Cardiac Transplant Surgeon, Apollo Hospitals, Bengaluru	
10:32 - 11:30	Inauguration - Lamp Lighting		
11:30 - 11:55	Guest Lecture: Concerns about GME and Hemodilution during CPB	Mr. Gerard J. Myers RT,CCP, Emeritus	Mr. G Naveen Kumar Dr. Ramesh Rau MD
End Stage Heart Failure-Perfusion Techniques			
11:55 - 12:05	Heart and Lung Transplantation-Preservation and procurement Techniques-Our Experience	Mrs. Thoyajakshi. V Global Hospital, Chennai	Mrs. Mukta Tiwari Mr. Lakshmi pathi.T
12:07 - 12:17	Case report of LVAD for Refractory heart failure	Mrs. G. Durga rani Yashoda hospital, Malakpet,Hyderabad	
12:19 - 12:29	Centrimag:BiVAD as a successful bridge to Heart Transplant-Our experience	Ms. Romiya Rajan, Lisie Hospital, Cochin	
12:31 - 12:41	Centrimag vs ECMO-The Best Companion for an end stage failing heart	Mr. Prince Solomon, Fortis Malar Hospital, Chennai	
12:43 - 13:08	Guest lecture: Scientific Engagement –Clinical perfusion	Dr. Sandeep Arora Director, Clinical and Medical affairs, Terumo	Mr. M Sankar Mr. W Anand Peter Samuel
Endocarditis-Perfusion Management			
13:08 - 13:18	Perfusion management in post kidney transplant case with graft dysfunction & fungal endocarditis for DVR	Mr. Himagirish Sandra, Fortis Flt Lt Rajan Dhall Hospital, New Delhi	Mrs. Sujatha Mishra Mr. Krishnappa B K
13:20 - 13:30	A Preemptive Approach for Infective Endocarditis-A new paradigm	Mrs. Thilagavathy R, Koval Medical Center & Hospital, Coimbatore	
13:30 - 14:30	Lunch Break / Preliminary Quiz programme		
14:30 - 14:55	Debate – 1 MICS vs Conventional cardiac Surgery	Dr. Arul D Furdato vs Dr. Benedict Raj	Mr. Vurali Basavaraju Mr. Bijender Pal Singh Ball Mr. M V Krishna Mohan Mr. Hari brahma chari
14:55 - 15:20	Debate – 2 Low Flows vs. Total Circulatory Arrest	Mr. Thalapathy vs Dr. Vishal Bhide	
15:20 - 15:30	Perfusion Strategy in MICS – Our Experience	Mr. Satyanarayana G Star Hospital, Hyderabad	Mr. Jayaprakash.M Mr. K Suvama Sekhar
15:32 - 15:42	Microemboli Formation During CPB: Perfusionist Intervention	Ms. Ritu Airan, AIIMS, New Delhi	
15:44 - 16:09	Debate – 3 On Pump vs Off Pump	Dr. Chandra Shekhar P vs Dr. Kunal Sarkar	Mr. Vinay kelkar Mr. Emmanuel Rajasingh Mr. Perimba Dass Mr. P Mathavan
16:09 - 16:34	Debate – 4 Single Dose Cardioplegia vs Multi Dose Cardioplegia	Mr. Sundar Rajan vs Mr. Rajeev Gupta	
16:34 - 16:50	Coffee / Tea Break		
16:50 - 17:00	Extra Corporeal Circulation in HIPEC Therapy for pseudo myxoma patients:Promising a new lease of life	Ms. Saritha TK, Aster Medicity, Kochin	Mrs. Kinnari chudasama Mr. Nilesh Mecwan
17:02 - 17:12	"Perfusion Navigator" for Smart (Phone) Perfusionist	Mr. Sridhar S, Dr. Prabhakar Kore Hospital & MRC, Belagavi	
17:15 - 18:30	TERUMO-ISECT QUIZ (IPL: Indian Perfusion League) Conducted by "Know How inc"& Mr. Soundar Rajan S		
19:00 - 22:00	Gala Dinner at Manpho Convention Center, Nagawara, Bengaluru		

JN TATA Auditorium, Indian Institute of Science, Bengaluru

PROGRAMME

Saturday, 25th Feb 2017

START - END	Programme	Speaker	Chairpersons
Aneurysm Techniques			
08:30 - 08:40	Aortic Arch Reconstruction using ACP in Infants showing early neurological outcome	Mrs. Sumathi Maheswaran, G.Kuppuswamy Naidu Memorial, Hospital, Coimbatore	Mr. Vunnam Madhusudan Naidu Mr. B Shivashankar pai
08:42 - 08:52	Outcome in patients undergoing Aortic Arch Procedures with High Flow Cerebral Perfusion	Mr. Rajesh Yadav, AIIMS, New Delhi	
08:54 - 09:04	Modified frozen elephant trunk procedure in type A aortic dissection: Surgical and Perfusion strategy	Mr. Minal Mandal, NEIGRIH&MS, Shillong	
09:06 - 09:16	Aortic aneurysm repair-A challenging perfusion technique-Two different case scenarios	Ms. Daisy Rani, MMM, Chennai	
09:18 - 09:28	Aneurysm Surgeries-New Perfusion Techniques	Ms. Diya R, Madras Medical College, Chennai	
09:30 - 09:45	Coffee / Tea Break		
09:45 - 10:10	Guest Lecture: Goal Directed Perfusion	Mr. Gerard J. Myers RT, CCP, Emeritus	Mr. Simon Richard Pinto Mr. Manoj MC
10:10 - 10:35	Guest Lecture: ECMO Simulation	Vincent Rajkumar L, Perth, Australia	
Management of ECMO			
10:35 - 10:45	Peripheral VA ECMO for Acute fulminant viral myocarditis-Our institutional experience	Ms. Aishwarya Prakash, Narayana Health, Bangalore	Mr. Nair Radha Krishnan R Mr. Subash Ramachandran
10:47 - 10:57	Electro anatomical mapping and ventricular tachycardia ablation under VA ECMO	Mr. Karthi Murugan, CMC Hospital, Vellore	
10:59 - 11:24	Guest Lecture: Pediatric Perfusion-What Surgeon wants from the Perfusionist	Dr. Prasanna Simha, Professor of CVTS, Jayadeva Institute of Cardiac Surgery, Bengaluru.	Dr. Vishwas K Paul Mr. Debasis Ray
11:24 - 11:39	Guest Lecture: Aortic Flow Timing-How to support irregular rhythms with IABP	Mrs. Robin A Zappacosta, USA	
ECMO Transportation			
11:39 - 11:49	Primary ECMO Transport-A unique experience on wheels	Ms. Vedasree S Manipal Hospital, Bengaluru	Mrs. Rajshri Pimpurkar Mr. A Hemanth Kumar
11:51 - 12:01	Aeromedical Transport of V V ECMO from Doha (Qatar) to Chennai (India)-A case report	Mr. Niranjan Yesur Chandrashekhar, Hamad General Hospital, Doha, Qatar	
12:03 - 12:20	Guest Lecture: Extracorporeal life support for patients with Left ventricular dysfunction	Dr. Rajamiyer Venkateswaran, Consultant Cardiac and Transplant Surgeon, University of Manchester, U K	Mr. Monsy Sam Mrs. Shreemati kulkarni
Complications / Failures			
12:20 - 12:30	On Table Surprises and Perfusionist-Case Reports	Mr. John Peter Patrick S Saptagiri Hospital, Bengaluru	Mr. Loknath Tiwari Mr. Rudramuni DT
12:32 - 12:42	A complication in a case of Arterial Switch Operation which extended the 148 hours duration of CPB	Mr. Ramesh KK Fortis Escorts Heart Institute, New Delhi	
12:44 - 12:54	Failure analysis of a patient on BIVAD as a bridge to cardiac transplant-A case study	Ms. Lakshmi Gopinadh, Narayana Health, Bengaluru	
12:56 - 13:06	Unexpected Catastrophic event on CPB during Cardioplegic Arrest	Mr. Mohamed Imran U, PSGIMSR, Coimbatore	
Case Studies (Student Session)			
13:08 - 13:18	A comparison of 40 cc and 50 cc IAB in providing better hemodynamic variables	Ms. Nandhini R Chettinad Hospital & Research Institute, Chennai	Mr. Anil Ittjavira Mr. G Ramachandran
13:20 - 13:32	A comparative study between two priming solution used in CPB: Plasmalyte A vs RL	Ms. R.Ishwarya Janani, SRMC, Chennai	
13:32 - 14:30	Lunch Break		
14:30 - 15:30	Prize Distribution		
15:30 - 16:30	GB Meeting		
16:30 - 16:50	Coffee / Tea Break		
19:00 - 22:00	Gala Dinner at Royal Orchid Resort And Convention Center, Yelahanka, Bengaluru		

Scientific Committee

Mr. Pasam Gopal Naidu

Mr. Madhan Kumar S

Mr. Elayaraja B

Mr. Gopu S

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GUEST LECTURES ABSTRACTS



ISECTCON - 2017
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**Guest Lecture: Concerns about Gaseous Microemboli and
Hemodilution during Cardiac Surgery**

Gerard J Myers RT, CCP Emeritus

Eastern Perfusion International
Nova Scotia, Canada
edit@ns.sympatico.ca

Perfusionists are expected to make critical choices for patient safety that should not only be based on the oxygenator's ability for gas exchange, biocompatibility and lower priming volumes ... but must include the oxygenator and filters' ability to reduce or eliminate GME before it enters the arterial circulation. In a report entitled Embolic Factors Associated with Cardiac Surgery, it was stated that gaseous microemboli were well-documented endothelial irritants and could cause significant brain dysfunction. Therefore it is important to avoid delivering emboli of any size or composition into the cerebral vasculature in order to reduce the impact of cardiac surgery on the brain.

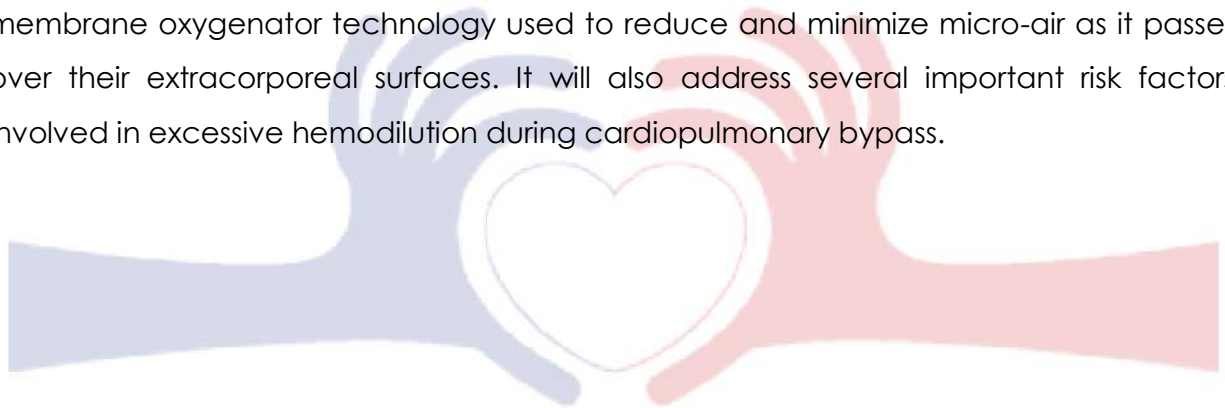
There are many health disciplines involved in the successful completion of cardiac surgery procedures. However, perfusionists are the only practitioners within this entire team who have the knowledge, the skills and the professional responsibility to identify the techniques and the sources responsible for the delivery of gaseous microemboli to our patients during cardiopulmonary bypass. To optimize handling of microemboli, the perfusionist must first recognize what microemboli are, what damage they can do and how they have the ability to impact their patient population. Perfusionists must then utilize any evidence-based literature to provide them with information and the techniques available to help them optimize the use of their cardiopulmonary equipment.

The use of asanguineous fluids to hemodilute patient blood during cardiac surgery was originally used to reduce the amounts of whole blood that was a common part of extracorporeal circulation over five decades ago. To that end the use of hemodilution has been a tremendous success. However, an excessive amount of hemodilution is

considered to be an independent risk factor for poor outcomes and increased red blood cell transfusions during cardiac surgery.

Reducing oxygenator priming volume in the adult patient is an important first step in reducing excessive hemodilution, but unfortunately it is a small step and will not eliminate a programs transfusion of allogenic red blood cells. Education of all team members regarding volume management and Dynamic Operating Volume will eventually lead to better management of excessive hemodilution and even better patient outcomes.

This presentation will examine the destructive nature of GME on the vasculatures intraluminal protective layer called Glycocalyx, and examine the several designs of membrane oxygenator technology used to reduce and minimize micro-air as it passes over their extracorporeal surfaces. It will also address several important risk factors involved in excessive hemodilution during cardiopulmonary bypass.



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Guest Lecture: Goal Directed Perfusion Management

Gerard J Myers RT, CCP Emeritus

Eastern Perfusion International
Dartmouth, Nova Scotia Canada

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Mortality rates associated with coronary artery bypass surgery during cardiopulmonary bypass (CPB) have been found to be around 2%. But these mortality rates increase to 13.5% in the presence of acute kidney injury (AKI) and even greater than 50% when renal replacement therapy is required to address this operative induced injury to the kidneys.

Over the past two decades much research has been put into the impact of excessive hemodilution on AKI and recent data suggests that keeping the hemoglobin > 8.0 g/dl will provide optimal care for those patients with cardiovascular disease and may reduce the incidence of AKI. However, this goal can sometimes be difficult in some patient populations (anemia, small body weight, etc) and may lead to increases in red blood cell transfusions.

The concept of Goal Directed Perfusion (GDP) as proposed by Ranucci et al provides evidence based solutions to reducing the incidence of AKI by reducing excessive hemodilution, measuring available oxygen transport calculations and exceeding calculated maximum pump flows (when necessary during CPB) to keep the systemic oxygen delivery index (DO_{2i}) greater than 260 ml/min/m² throughout the bypass case.

GDP management is a progressive step forward in cardiovascular perfusion and has the potential to modify the perfusionist's clinical practice, helping to explain why transfusion thresholds are not the only answer to addressing the incidence of AKI and improving patient outcomes after cardiac surgery. The concept and goals of GDP management and excessive hemodilution will be discussed, as well as the technology associated with this future in patient management.



Guest Lecture: Pediatric Perfusion-What Surgeon wants from the Perfusionist

Dr. Prasanna Simha, Professor of CVTS,
Jayadeva Institute of Cardiac Surgery,
Bengaluru

Pediatric perfusion has evolved over time taking the unique requirements of a neonate or infant and the different surgeries that are being carried out. A cardiac surgeon wants a perfusionist to have an in depth knowledge of the perfusion requirements and the perfusion strategies that are required. Perfusion in the presence of steal from collaterals, altering blood flow depending on surgical requirements, brain protection strategies, ultrafiltration techniques and different myocardial protection requirements are all to be fine tuned in these patients.



Guest Lecture: Lessons from past to the future (CPB)

Dr. Varun Shetty, DNB

Cardio thoracic Surgeon
Narayana Health
Bengaluru

The history of cardiopulmonary bypass is as fascinating as it is endearing. Extra corporeal circulation had to evolve from an idea to reality. The concepts of hypothermia, physiological flow, ex vivo oxygenation and anticoagulation are the result of tireless experimentation.

It started with amateur experimentation to prove that blood can be taken out and pumped back into the human body with no compromise to life itself. With the advent of machines, Gibbon created a pump to oxygenate and pump the blood at a more controlled rate. But early human experimentation proved to be disastrous and this spurred Dr Lillehei to use another "human being" as a pump, the success was short lived as technology became more reliable. Dr Varco's bubble oxygenator catapulted the specialty into the future and allowed for hundreds of cardiac surgical centers to develop.

The future of perfusion will usher in a new world. Whether it is biocompatible miniaturized circuits or total artificial organs, one cannot deny that this would be inconceivable without the work of these pioneers. The specialty owes itself to these scientists who sacrificed their reputation so that humanity may benefit. Cardiac surgery today would be unimaginable without the omnipresent heart lung machine, the harness that has rendered the most complex repairs possible.



Guest Lecture: MICS PERFUSION – PITFALLS TO PERFECTION

Dr. Bharat Dubey, MS, MCh (AIIMS)

Senior Consultant Cardiac & Heart Transplant Surgeon
Apollo Hospitals, Seshadripuram
Bengaluru.

ABSTRACT

Introduction: Minimally Invasive Cardiac Surgery (MICS) is gaining rapid popularity across the globe, as it has got many obvious advantages over conventional cardiac surgery. MICS perfusion techniques are different from routine conventional perfusion techniques. In India many of the centers are performing MICS cases and majority of these are in its learning curve. During MICS perfusion,

- Adequate total body perfusion with smaller size femoral arterial cannulae
- Achieving satisfactory venous return with smaller size femoral or SVC cannulae
- Different techniques to be followed to augment the venous return & their associated issues
- Myocardial protection strategies
- Special techniques for de-airing of the heart

are few mandatory facts which should be known by the perfusionist to conduct a safe open heart bypass procedure.

Conclusion: Adaptation of safe techniques, standard protocols, avoiding pitfalls and proper training for all team members is essential for a safe conduct of MICS perfusion.



Guest lecture: Significance of Simulation Training in ECMO

*Vincent Rajkumar B.Sc., DPT (India), CCP (Aus),
Deputy Chief Clinical Perfusionist
Fiona Stanley Hospital, WA*

ECMO is a low-volume and high-risk procedure. Management decisions on ECMO play a crucial role to avoid adverse outcomes. The frequency of ECMO cases at our institution is unpredictable and the numbers vary from time to time. An annual simulation program has been developed since 2011 to maintain the standard of ECMO Services and to sustain the clinical skill competency. So far 10 ECMO simulation courses have been completed using the high fidelity Orpheus simulator.

We have commenced using SimMan 3G recently, an advanced patient simulator that integrates well with the Orpheus to provide realistic patient management scenarios.

Developing an institutional ECMO simulation program requires representatives from members of the multidisciplinary ECMO team and the simulation centre, as well as commitment from the hospital or health system's administration.

The financial investment can vary depending on the plan for adapting the manikin to interact with the ECMO circuit, but even simple, low-tech solutions can lead to an excellent learning environment for members of the ECMO team.

Traditional medical education and training focuses primarily on cognitive and technical skills; very little attention is paid to the development of effective behavioural skills. Behavioural skills are a vital component of the ECMO Simulation program that focuses upon effective communication, team dynamics and psychomotor objectives. Pre and post course personal evaluation surveys have shown that the course greatly benefits the candidate and improves confidence within their abilities and as such provides an excellent training program.

An ECMO simulation program can provide a forum for practice in the management of routine and of low frequency, high-risk emergency situations. This can lead to benefits in patient safety, improved team behaviours and communication, and can demonstrate a commitment by the institution to high quality standards and the provision of excellent patient care.



Guest Lecture: Aortic Flow Timing – Because Timing Matters

Robin Zappacosta, RN

Senior Manager, Global Clinical Sales
Cardiac Care

P: +1.610.741.3397

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Intra-aortic balloon pump (IABP) therapy is a proven treatment in the stabilization of severely compromised cardiac patients. The effects of providing increased myocardial oxygen supply, while also decreasing myocardial oxygen consumption, are well documented. The effectiveness of the therapy is dependent on the synchronization within the cardiac cycle. Patients with arrhythmia create a challenge for synchronization and compromise left ventricular performance.

Objectives:

1. Discuss the challenges of current IABP therapy
2. Identify the effects on the left ventricle using pressure volume loops

Identify a method to improve timing in an irregular cardiac rhythm



Guest Lecture: Scientific Engagement – clinical perfusion

Dr. Sandeep Arora

Director, Clinical and Medical Affairs,

Terumo

This talk will provide valuable insights on skill building capability, with focus on training and education for practicing perfusionists. There is limited scope and institutes for advanced or skilled training and education for practicing perfusionists in India. In order to improve, standard of practices, there is clear unmet need for upgrading the skills of practicing perfusionists in India that includes potential collaboration between academia and industry to run such advanced perfusion training programs. Further, few case study examples shall also be highlighted on “how” to improve and maintain training and education continuum amongst perfusion community.

ISECTCON - 2017
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Guest Lecture: NEXTGEN Extracorporeal life support system for patients with Ventricular Failure

Dr. Rajam Iyer V Venkateswaran MD, FRCS-CTh

Consultant in Cardiac Surgery & Transplantation,
University of Manchester UK.

The lecture will provide valuable insights into the management of acute heart failure using mechanical circulatory support. Extracorporeal Life support (ECLS) as we know is a type of cardiopulmonary bypass that supports the lungs, heart, or both for days to weeks in patients in intensive care with reversible life threatening respiratory or cardiac disease. The lecture will stress upon the need for acute support in acute cardiogenic shock, acute exacerbation, primary graft dysfunction and failure to wean from CPB. Discussion on the judicious choice cannulation techniques- like central as well as peripheral in appropriate cases and will cite examples from varied and extensive experience.

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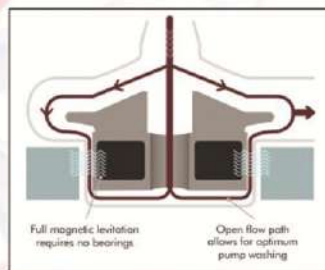


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SCIENTIFIC PAPERS ABSTRACTS



ISECTCON - 2017

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Title of Paper: Peripheral VA ECMO for Acute fulminant viral Myocarditis - our institutional experience

Speaker: Aiswarya Prakash

Co-Speakers: P.V.S.Prakash, Sam Immanuel, Selvakumar, Shabeer, Dr.Varun Shetty, Dr.Julius Punnen, Dr.Hema Nair, Narayana Health, Bangalore

About Author: FINAL YEAR BSc perfusion technology

Abstract

Background: The inflammation or degeneration of the heart muscle myocarditis may be fatal. This disease often goes undetected. It may also disguise itself as ischemic, valvular, or hypertensive heart disease. Timely initiation of VA ECMO is a novel option in treating acute viral myocarditis and we have an experience of 8 cases.

Management: All the cases were admitted in the emergency coronary care unit with severe respiratory distress and poor hemodynamics and ECHO examination revealed low LVEF (15-20%). Patients were electively ventilated and consent taken for instituting peripheral VA ECMO. VA ECMO was initiated with femoro-femoral cannulation with distal limb perfusion. On ECMO support the hemodynamics were stabilized, with no Inotropic support. The heart and lungs were given adequate rest time for recovery by maintaining total cardiac output on ECMO. The average ECMO support was 84.2 Hours \pm 4hours. Maquet Quadrox PLS / Sorin Dideco ECMO oxygenators with rotaflo centrifugal pump were used. Delta pressure, pre pump pressures were continuously monitored. NIRS monitoring and online venous saturation were used to optimize perfusion adequacy.

Results: Out of the eight cases put on VA ECMO for viral myocarditis seven were successfully weaned off and were discharged (Success rate of 87.5%). Soon after the initiation of ECMO the SaO₂ reaches to normal levels. The serum lactate levels which were high (>6mmol/L) prior to initiation of ECMO remarkably came down to <2mmol/L after 24 hours. Seven patients were weaned off and decannulated in the Operating Room. One patient required LV decompression by Balloon Atrial Septostomy in the Hybrid OR and was successfully weaned off after 48 hours. One patient succumbed due to continuous low cardiac output which was irreversible with full blown septicemia not responding to ECMO and medications.

Conclusion: VA-ECMO support is very effective in optimizing myocardial recovery for the treatment of refractory acute fulminant viral myocarditis when maximal conventional supports are ineffective.



Title of Paper: CPB Strategies followed for sickle cell anaemic patients-case reports

Speaker: Analiya. K
Madras Medical Mission

ABSTRACT

BACKGROUND

In patients with sickle cell trait or disease, reduced life expectancy and a tendency for complication are believed to negatively affect likelihood of survival after open heart surgery. The aim of this study was to review retrospectively the CPB strategies and perioperative results of patients undergoing cardiac surgery with sickle cell anemia at our institution.

METHODS AND RESULTS

Between January 2014 - December 2016, 8 patients with sickle cell disease are underwent open heart surgery at our institution. The average age of the patients was 4.3 ± 3.6 years. Average weight of the patients was 10.9 ± 6.7 kilograms. The mean CPB and Aortic cross clamping time were 93.8 ± 69.6 and 150.6 ± 76.2 minutes respectively. Preoperative and intraoperative exchange transfusion was performed in patients with Hbs $>30\%$ (3 patients). Isothermic cardioplegia was used in 4 patients, Del Nido cardioplegia was given in 2 patients and warm cp followed by cold CP(sucked out) was given for 2 patients. Intra-operative Hbs was decreased to $7\% \pm 0.02\%$. Ultrafiltration used for all patients. Fluid warmer were used to maintain temperature during MUF. Average hospital stay was 14.3 ± 3.46 days.

CONCLUSION:

Surgery for congenital heart diseases can be performed safely in patients with sickle cell diseases with acceptable outcome and survival rates. We were able to maintain a near normal CPB and make possible the safe use of standard techniques of cardiac surgery in the sickle cell patients.



Title of Paper: Perfusion strategy influencing outcome in Arterial Switch Operations

Speaker: Ch.Madhumohan,

Co-Speakers: Satyanarayana, Bikshu, Laxmi, Chinni, Veeraender. Dr Jaganath, Dr Shashtry

madhumohanc@gmail.com

Star Hospitals Roads, Hyderabad

About Author: Madhumohan, Sr Clinical Perfusionist in Star Hospitals, Hyderabad, 12 years of experience.

Abstract

Aim: To evaluate the outcomes of arterial switch operations in various anatomical variation of dextro-transposition of great arteries (D-TGA).

Methods: Retrospective analysis of 167 pts who underwent arterial switch operation of various age groups from 2010 to 2016 was done. Data collected from recorded excel sheet & case records. Blood prime used and circulated at 37°C. CUF and MUF performed in all patients. Administered mannitol, solumedrol, Mgso4. Sevoflurane used. All patients cooled to 28°C, Del Nido & St Thomas blood cp used for myocardial protection.

Result: out of 167 patients largest category was D-TGA with VSD is 92 and D-TGA with intact IVS is 72

3 patients had single coronary anatomy, 2 patients had triple coronary anatomy remain all are having normal coronary arteries. The median CPB time is 198min with highest of 428min, at median cross clamp time is 120min with highest of 318min, median lactate on CPB is 2.3mmol/li, highest of 7.1mmol/li, median icu stay was 15 days, highest of 40 days, median hospital stay was 12 days and highest of 53 days. Rise in lactates & creatinine levels are directly proportional to CPB time and clamp time. Del Nido reduced CPB time compare to St.Thomas

Conclusion: Ventilation duration, ICU stay, post op creatinine and lactate levels was directly proportional to CPB and clamp time. 14 patients needed extended CPB support of which 8 patients did not survive and 6 patients successfully weaned off CPB. 4 patients out of 14 patients needed extended CPB due to inability wean off.



Title of Paper : AORTIC ANEURYSM REPAIR – A CHALLENGING PERFUSION TECHNIQUE – TWO DIFFERENT CASE SCENARIOS

Speaker: MS.DAISY RANI

Co-Speakers: MR.BHASKAR MRS.MALATHY DR.BENJAMIN NAINAN DR.SHERIFF DR. V.M.KURIAN

daisysusainathan@gmail.com

Madras Medical Mission

ABSTRACT

BACKGROUND

Open surgical repair of THORACO ABDOMINAL AORTIC ANEURYSM (TAAA) enables the effective replacement of diseased segment and relatively prevents aneurysm rupture. These operations carry substantial risk of perioperative morbidity and mortality, caused by ischemic insults; challenges related to perfusion support of Thoracic abdominal aneurysm repair include maintenance of distal perfusion and avoidance of both hypothermia and excessive hemodilution.

METHODS

We reviewed the outcome of 2 cases with TAAA, repaired with 2 different scenario of perfusion technique. In one case, we devised a **left heart bypass** circuit consisting of 3/8 inch tubing connected to centrifugal pump and low prime **SPICTRA** heat exchanger. The circuit was primed through 3/8 inch spiked connectors attached to 2-litre saline bag of normal saline. In second case, two separate aortic cannulas (ascending aorta- 16Fr and descending aorta-24Fr) was used to provide upper and lower body perfusion. Antegrade cerebral perfusion was established through upper body perfusion, lower body perfusion was established to accomplish **spinal cord protection**.

RESULTS

Both the patients had a reasonable ICU and hospital stay with no adverse effects or events. The low prime and custom circuit reduced the hemodilution and cost. The early follow up results of both the patients were satisfactory.

CONCLUSION

Open surgical repair of TAAA can be life saving to patients at risk of perioperative morbidity and mortality. The well established circuit bypass associated with advanced perfusion techniques will reduce the risk of complication, resulting in good outcome of patients.



Title of Paper: Aneurysm surgeries- New perfusion techniques

Speakers: DIVYA. R

rdivya8997@gmail.com

MADRAS MEDICAL COLLEGE

About Author :

I am Divya , studying B.Sc. Cardiopulmonary perfusion technology in Madras Medical College

ABSTRACT

Aneurysmal disease of aorta accounts for 1-2% deaths in India. 40% patients are asymptomatic. Open repair of the descending thoracic aorta and thoracoabdominal aorta remains a challenging procedures. Anaesthetic management of these patients is extremely challenging because of the significant hemodynamic changes. In our centre , we had performed 15 thoracoabdominal aortic aneurysm repair in the last 1 year. Challenges related to perfusion support of thoracoabdominal aortic repair includes maintenance of distal aortic perfusion, rapidity of fluid resuscitation , avoidance of hypothermia and hemodilution. This technique requires oxygenators and heparinization. So, we had chosen , "on pump beating heart " procedure with normal temperature range for most of the procedures. This helped us to maintain the cerebral perfusion and arterial cannulae in the femoral artery provided distal perfusion to the lower extremities, spinal cord and splanchnic viscera. Few other case procedures were done without oxygenators. The former one gave good results than the latter one. Clearing the problematic knots of perfusion will help to decrease the morbidity and mortality rate of thoracoabdominal aortic aneurysm repair .



Title of Paper: CASE REPORT OF LVAD FOR REFRACTORY HEART FAILURE

Speaker: Mrs. Durga Rani,

Co-Speakers:

Mr. Chandra Sekher, Dr.Nagereswara Rao, Dr.Yedukondalu.

Yashoda Hospital, Malakpet, Hyderabad.

Introduction:

In spite of advancement in medicine, majority of cardiac patients eventually end up in end stage heart failure. Ventricular assist devices remains gold standard for managing these cases and are now being used more often as an alternative to heart transplantation, either as bridge to transplantation or bridge to recovery or as destination therapy.

Discussion:

We have case of refractory heart failure, in spite of maximum medical therapy, with multiple co-morbidities. A 49 years old male patient is a known case of chronic refractory severe left ventricular failure following old AWMI and PTCA + stent to LAD (2005) with indwelling AICD implant. He is a known case of HTN, uncontrolled diabetes, and COPD. He is treated with left ventricular assist device on 15th June 2016. During initial post operative period of LVAD placement, he had multiple issues and treated conservatively. He is symptom free and is doing well.

Conclusion:

Ventricular assist devices can give good support during waiting period for a heart transplant and can give good quality of life to those who had VAD as a destination therapy.



Title of Paper: Perfusion management in post kidney transplant case with graft dysfunction and fungal endocarditis for DVR - A case report

Speakers: Himagirish Sandra,
Himagirish.sandra@gmail.com

Co-Speakers: Dr.Sanjay Gupta; Dr.Sanjeev Singh, Dr.S C Tiwari,
Dr.Sanjeev Gulati, Dr.Gagan Shrivastava.
Fortis Hospital, Sector B Pocket-1 Vasant Kunj, New Delhi-110070

About Author: Possesing post qualification 17 years of experience in adult and pediatric perfusion

Aims and objectives: Perfusion management of a post renal transplant patient with graft dysfunction developing fungal endocarditis (on both aortic and mitral valve) posted for Double Valve Replacement and its outcome.

Case Report: 32 year old international female patient with history of renal transplant (10-08-2015), Burrhole surgery & clipping of cerebral aneurysm for subarachnoid haemorrhage (2006), was admitted with fever, throat infection and graft dysfunction. Despite advice for haemodialysis at her country, she came to India for further evaluation & treatment. On admission Investigation revealed anaemia and raised creatinine levels. Renal biopsy was done and patient was evaluated for worsening graft function. Following biopsy report, the patient was given 5 doses of Inj. Solumedrol. Echocardiography suggested severe MR and moderate AR with vegetations on both valves. Blood culture revealed fungal growth (Candida). During the same stay she also had seizures, probably due to some embolism. Considering fungal infective endocarditis with cerebral complication Double Valve Replacement was done after two weeks. On the day of procedure, she was put on minimal dosage of immunosuppressant by the Nephrologists.

In OR, all possible measures were taken to minimize infection. During CPB, Plasmalyte A & 0.045 Normal Saline used as prime solution, good perfusion pressures (50 – 60 mmHg) with adequate Hematocrit (26- 28% Hct) was maintained , Hemofilter was arranged but not used as adequate urine output was noted. 1 gm Solumedrol and antibiotic were administered as per recommendation. Weaning off CPB was uneventful. The ACC time was 117 min and CPB time was 134 min. The min temp attained during CPB was 30°C. The patient was shifted to ICU with mild inotropic support. Patient was extubated on 1st POD, shifted to ward on 4th POD and was discharged on 12th POD. Total Euroscore I/II were 6.01 & 9.51.

Conclusions: This type of patient with post transplant renal dysfunction carries high risk for cardiac surgery with high morbidity & mortality. The proper preoperative stabilisation and good Intra-operative management are most important factors required for successful outcome.



Title of Paper: On Table Surprises and Perfusionist - Case Reports

Speaker: JOHN PETER PATRICK S

Sapthagiri Institute of Medical Sciences and Research Centre
Bengaluru

sjpp.perf@gmail.com

About Author: Clinical Perfusionist with 5 years of experience doing all cases from Neonates to Adults

Abstract

Introduction

Congenital heart disease is the most common type of birth defect, yet despite great advances in screening and diagnosis, the condition can go unnoticed for a long time, until heart damage has progressed enough to cause detectable symptoms. Unrecognized congenital heart disease (CHD) carries a serious risk of unavoidable mortality and morbidity. Here I want to present two case of undiagnosed cardiac defect and how we managed to find it and its management.

Case Reports

A 5 year old female patient was diagnosed to have 'Type A Interrupted aortic arch' **on table**, as the patient was taken for Ventricular Septal Defect closure and Patent Ductus Arteriosus (PDA) ligation. In this case the perfusion line pressure went high and Arterial Blood Pressure curve was lost when PDA clamped. When this problem was informed to the surgeon, further dissection of aorta and Pulmonary Artery lead us to diagnose. And a 21 year old female patient was diagnosed **on table** with 'Type 2 Aorto pulmonary window' when patient taken for Aortic Valve Replacement. As the venous return was a problem further dissection led us to diagnose, and distal ascending aorta was cannulated with EOPA Medtronic aortic cannulae.

Conclusion

Since the length of the operation, technical change requirements, procedure planning, proper preoperative diagnosis, is an important determinant of its successful outcome. And as a Cardiac surgical team member's one should be aware of all complexity and managing the situation is important for better outcome of these subset of patients.



Title of Paper: Electroanatomical mapping and ventricular tachycardia ablation under veno-arterial extra corporeal membrane oxygenation

Speaker: Karthi Murugan, karthi.murugan@ymail.com

Co-Speakers: John Roshan , Roy Thankachen , Vinayak Shukla , Korah Kuruvilla, Alpha Mathew Kavunkal , Shankar Manickam , Raj Sahajanandan , Binila Chacko
Department of cardiothoracic & vascular surgery. CMC & hospital vellore - 632004.

About Author : Finished PG Dip in CMC AND Masters in perfusion in 2016 in AIIMS , Twin Topper in both Institutions.

Abstract

INTRODUCTION:

Ventricular tachycardia (VT) is a leading cause of sudden cardiac death. Treatment of VT includes restoring normal rhythm, managing the underlying disease, and preventing future episodes. The options include Implantable cardioverter-defibrillator (ICD), Anti-arrhythmic drugs, and Catheter ablation.

Here with we present the case of a 58 year old man with the history of Dual chamber ICD placement, with a VT storm, who was treated with VT ablation using Veno-Arterial Extra corporeal membrane oxygenation (V-A ECMO).

This patient with Coronary arterial disease and left ventricular systolic dysfunction was found to have recurrent episodes of VT on Holter monitoring. A VT ablation was planned after a multidisciplinary meet. It was decided to do this procedure with an ECMO support to obtain greater hemodynamic support and to avoid the hypotension caused at VT induction.

A V-A ECMO was initiated through the left femoral vessels with 10% flow. Standard monitoring protocol and normothermia were maintained. The systolic blood pressure dropped to 40 - 60 mmHg at VT induction, but with ECMO back up, the Mean arterial pressure was raised and maintained above 90 mmHg with full flow. This enabled the cardiologists to continue mapping and ablation without interruption. Good hemodynamic support was maintained throughout the six hours of ECMO.

The ablation procedure was successful. The patient was weaned off successfully, extubated on table and was discharged the next day.

CONCLUSION: ECMO support during VT ablation offers indispensable hemodynamic support and prevents complications caused by hypotension during the procedure. This is the first report of such a procedure done in Asia. Strategization and team work between the various specialists gives optimal outcome.



Title of Paper: Failure Analysis of a patient on Bi-Ventricular Assist Device as a bridge to cardiac transplant

Speakers: Lakshmi G

Co-speakers: P.V.S.Prakash, Sam Immanuel, Selva Kumar R, Cousigan, Athulya, Ahana Shaji, Dr.Varun Shetty, Dr.Julius Punnen. lakshmigopinadhperf@gmail.com

Narayana Health

About Author: Working as a Course coordinator and Clinical perfusionist

Abstract

Objective: To present a case of 43 year male on Biventricular Assist device after massive myocardial infarction with low EF waiting for emergency transplant had a acute stroke on the 17th day . The cause of stroke is not clearly known.

Case presentation: A 43 year old male patient who underwent angioplasty in another hospital was shifted to Narayana Health emergency with signs and symptoms of congestive heart failure. He was on hypotension and hypoxia with maximum ventilator settings and inotropic supports. On evaluation he had biventricular dysfunction and his ECHO revealed organized LV clot at the LV apex with LVEF of 15-20%. It was decided to put on BiVAD support with Centrimag device. Since he was on severe pulmonary edema and lung congestion oxygenator was incorporated in the RVAD. The cannulae were inserted by sternotomy at RA to PA for RVAD and LA to Aorta for the LVAD. His lung functions improved on the 3rd day of support and the oxygenator was removed from the circuit. He was also extubated and mobilized for further management. In due course he has improved dramatically. He was shifted to the ward and was waiting for a donor heart.

Failure Report: On the 17th day of the support, the patient suddenly lost consciousness and collapsed on the bed. The SpO₂ monitor was showing 100% saturation with pulsatile trace and BP with NIBP monitor was 95/42. Immediately he was intubated and shifted for CT scan. His scan revealed early hypoxic ischemic changes and multiple sub acute infarcts and his neurological monitoring did not show any improvement and was not responding to stimuli. The patient became unfit for transplant due to his irreversible neurological status and succumbed on 25th day as we withdrew the life support.

Failure Analysis: The dislodgement of the LV clot could have led to the CVA incident. Since the patient was edematous and did not have any peripheral lines, we were giving volumes and drawing blood samples from the three ways connected to the RVAD circuit. There is a possibility that an air embolism could have caused this incident while drawing samples in the RVAD circuit.

Conclusion: Based on this case report what strategies we could have adopted to prevent this untoward incident in future will be presented.



Title of Paper: Modified Frozen Elephant Trunk Procedure in Type A Aortic dissection: Surgical and Perfusion strategy

Speakers:

Mr Mrinal Mandal,

Co-Speakers: Prof Manuj Kumar Saikia, Dr Jyoti Prasad Kalita,

Dr Akash Handique,

DEPT OF CTVS, NEIGRIHMS, MAWDIANGDING, DIST- EAST KHASI HILLS,
SHILLONG, MEGHALAYA-793018

About Author: PG IN PERFUSION Technology,

ABSTRACT

The Concomitant Bentall operation plus aortic arch replacement combined with modified frozen elephant trunk procedure remains a surgical challenge because of its complexity in operative techniques, cardiopulmonary bypass, cerebral perfusion, hypothermia and myocardial preservation. With the "modified frozen elephant trunk technique" the ascending aorta, along with the aortic arch, is replaced conventionally with composite valved graft for bentall procedure with four branched vascutek graft for aortic arch. An endovascular stent graft is placed into the descending aorta in the antegrade manner through the open distal aortic end beyond left subclavian. Thereby potentially allowing for a single stage hybrid operation which lowers the reoperation of descending thoracic aortic aneurysm repair in a later date and possible further complication.

CONCLUSION

This case study aimed to evaluate the safety and effectiveness of modified surgical strategies of aortic valve graft implantation, total arch replacement using a four-branched prosthetic arch graft combined with an implanted stented modified frozen elephant trunk under moderate hypothermia and bilateral selective antegrade cerebral perfusion for protection of vital organs of body in Type A aortic dissection repair.



Title of Paper : A comparison of 40 cc and 50 cc IAB in providing better hemodynamic variables

Speakers: Ms.Nandhini R, nr080996@gmail.com

Co-Speakers:

Mr.Vishnusidh V - Perfusion Students.

Miss Aleena Anna Korah, Dr.Sanjay Theodore, Dr.T.M.Ponnuswamy, Dr.Prabhu.M,

Dept of CTVS, Chettinad Health City, Kelambakkam, Chennai

About Author: B.Sc Allied Health sciences Perfusion final year student

ABSTRACT

Aim:

This study compares the 40 cc and 50 cc Intra Aortic Balloons and their effectiveness in hemodynamic support.

Method:

The data was collected in a retrospective manner .The variables include: Patient Demographics, Indication for use, Hemodynamic variables and IAB tracing analysis. The patient included are *Patients with coronary artery disease with Low EF, mod. – Severe. LV dysfunction undergoing CABG.* The patient excluded are *Patients without PA Catheter, High risk Patient in Cathlab intervention, Emergency CABG Patients.* Among the 30 patients, 17 patients were Male and 13 were Female. Data was collected for 15 patients respectively in Group A 40 cc and Group B 50 cc. The incidence of elective insertion of IAB is in 21 patients and emergency insertion in 9 patients.

Result:

The magnitude of Afterload reduction correlates directly with magnitude of Diastolic augmentation and inversely with pulmonary wedge pressure. The p value was significant ($p=0.069$, Chi-Square test) with increased cardiac output by average of 0.4 L in Group B.

Conclusion:

We conclude that 50cc IAB offer better hemodynamic support when compared with 40cc IAB in all patients.



Title of Paper: Aeromedical transport of VV ECMO from Doha (Qatar) to Chennai (India)
- Case Report

Speaker:

Niranjan Yeslur Chandrasekhar, nirupa76@gmail.com

Co-Speakers:

Dr Ibrahim Fawzy, Ibrahim Mousa, Megha Kamle.

Department of Clinical Perfusion, Hamad General Hospital,

A Member of Hamad Medical Corporation, Doha, Qatar, P.O. BOX 3050.

About Author:

11 YEARS OF EXPERIENCE IN CLINICAL PERFUSION

ABSTRACT

Aims and objectives: Perfusion management of VV ECMO Patient during Aeromedical transport.

Case Report: A 48year old Pakistani patient known case of Interstitial Lung Disease and he wanted to do get his Lung Transplantation in India. But he developed shortness of breath and admitted in emergency, and diagnosed left sided pneumothorax and chronic respiratory failure. He was intubated and started mechanical ventilation. The patient started empirically on antibiotic and steroids, despite all measure adapted by conventional ventilation including prone position the patient was persistently having severe respiratory acidosis and increased CO₂ levels. Hence a decision was made to go on VV ECMO.

As patient was not fit for decannulation and he was waiting for transplant in India, we decided to transfer the patient to India for lung transplant. We stabilized the patient hemodynamically with minimum support before shifting the patient.

His lab reports are maintained under normal limits, Hemoglobin >12 mg/dl, Platelets counts > 100000 and PTT between 35to 45.

Before shifting the patient we confirmed all the travel documents from the Patient, Indian Embassy and both the Hospital side. Safety measures were taken by checking with Hamad hospital aeromedical transport checklist for ECMO patient. We transported the patient to Doha airport by ambulance and completed immigration process, then safely shifted the patient to flight after thorough checklists completion.

After 4 hrs of safe journey (3300 km) we reached Chennai airport and completed immigration process and safely shifted the patient to Apollo hospital ambulance. After reaching the hospital, Patient was handed over to Apollo hospital ICU team without any complication. Patient was stable hemodynamically throughout the journey (08 hrs).

Conclusion: Time and distance for Aeromedical transport of ECMO patient doesn't matter if planned properly and proper checklist completed.



Title of Paper: CENTRIMAG Vs ECMO THE BEST COMPANION FOR AN END STAGE FAILING HEART

Speaker: PRINCE SOLOMON

CLINICAL PERFUSIONIST

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No 52, 1st Main Road, Gandhi Nagar, Fortis Malar Hospital,
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About Author: Perfusionist

Abstract

Mechanical circulatory support (MCS) was introduced to provide rescue treatment for patients with end stage cardiac and cardio-respiratory failure. CentriMag (Adult) and PediMag (Pediatrics) Extracorporeal Blood Pumping Systems are the most advanced and commonly used devices to provide temporary MCS in critically ill patients with terminal heart failure and it serves as 'bridge to transplant' or 'bridge to discussion' for heart transplant or permanent VAD implantation. The aim of this study was to systematically review effect of these short-term VADs and ECMO systems on survival and adverse events in patients with cardiac and cardio-respiratory failure which provides an opportunity for stabilizing the hemodynamic state of the Heart failure patient. 12 patients included in this study with VAD, converted from VAD to ECMO and ECMO to VAD who were awaiting for heart transplant or permanent VADs.



Title of Paper: A COMPARATIVE STUDY BETWEEN TWO PRIMING SOLUTIONS USED IN CPB - PLASMALYTE-A Vs RINGER LACTATE

Speaker:

R. ISHWARYA JANANI, ishwaryajanani95@gmail.com

About Author: PURSUING MY B.Sc. PERFUSION TECHNOLOGY AT SRI RAMACHANDRA MEDICAL CENTRE

Abstract

INTRODUCTION

To compare two priming solutions used in our institution for cardiopulmonary bypass. In our study we have compared two crystalloid priming solutions Plasmalyte-A and Ringer lactate.

METHODS

Our study included 100 patients undergoing open heart surgery using systemic heparinization, cardiopulmonary bypass and protamine reversal. Patients had an age group of above 10 years. Our study involved patients undergoing valvular surgeries in our institution. In 50 patients CPB circuits was primed with PLASMALYTE-A (GROUP A) and in 50 patients (GROUP B) CPB circuits was primed with RINGER LACTATE. Blood samples were collected from the patients after induction, onset of CPB and before termination of CPB.

RESULTS

The pre operative patient's data were collected and analyzed with independent sample of test after induction. There is difference in levels of sodium and lactate concentration. Our study has proven that hyponatremia and hyperlactatemia occurs in patients for whom ringer lactate has been used as a CPB circuit priming solution, whereas patients who received plasmalyte-A as CPB circuit priming solution have not shown any significant changes in the serum sodium and lactate levels.

CONCLUSION

Serum sodium level and blood lactate levels are important determining factors for post operative complications. Patients who received ringer lactate (GROUP B) as CPB priming solution showed reduction in serum sodium level and increased blood lactate level. Thus, we conclude that plasmalyte-A is better CPB priming solution than ringer lactate solution from our institutional experience.



Title Of Paper: Cardiopulmonary Bypass using Direct Thrombin Inhibitor in Pediatric Cardiac Surgery

Speaker: Rajeev Gupta

Co-Speakers: Archip John, I. Shashikant, Dr. Suruchi Hasija,
Dr. Sachin Talwar, Prof. Balram Airan
Department of CTVS, CN centre,
All India Institute of Medical Sciences, New Delhi.

About Author: Senior Perfusionist in India's premier institute AIIMS

Abstract

Objective: The aim of this study is to establish the safety, efficacy & selective use of bivalirudin as an alternative anticoagulant during CPB in pediatric cardiac surgery.

Introduction: Complete anticoagulation of the patient is essential during Cardiothoracic surgery with cardiopulmonary bypass. Bivalirudin is a relatively new, semi synthetic, bivalent, reversible direct thrombin inhibitor with a relatively short half-life. In children, the studies are limited to bivalirudin use for thrombosis, percutaneous intravascular procedures, post cardiac surgery extracorporeal membrane oxygenation (ECMO), and case reports on its use in children with HIT undergoing OHS and in a case report for heart transplantation.

Material and Method: After obtaining approval from the institutional ethical committee, and written & informed consent from Patients guardians this randomized, trail was conducted in the Department of CTVS, CN centre, All India Institute of Medical Sciences, New Delhi. The total number of 50 children of either sex aged 1-10 years with acyanotic congenital heart disease (ACHD) undergoing OHS were included. Conduct of CPB using bivalirudin will be shared during this presentation. Exclusion criteria: All pediatric patient evaluated for high risk of bleeding.

Results: We observed favorable outcomes (in terms of less blood product use, less chest tube drainage, better platelets function and no allergic /adverse reaction) in our single centre limited experience with the use of bivalirudin for the management of anticoagulation during pediatric CPB.

Conclusion: Bivalirudin can be used selectively as an effective alternative to heparin for anticoagulation and may have the potential to reduce blood product administration.



Title of Paper: Outcome in patients undergoing aortic arch procedures with high flow cerebral perfusion.

Speaker: Mr. Rajesh Yadav.

Co-Speakers:

Mr. Arun Kumar, Ms. Anju, Mr. Yogesh Solanki, Mr. Lokender Kumar, Prof. Shiv Kumar Choudhary, Prof. Balram Airan.

About Author: Perfusionist in AllMS, New Delhi

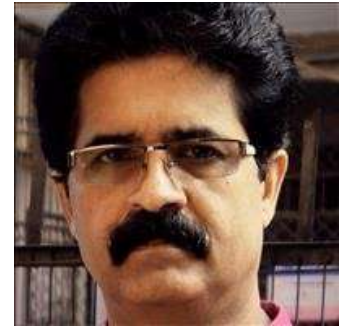
Objective: To assess the outcome of aortic arch reconstruction performed with continuous high flow antegrade cerebral perfusion (ACP).

Methods: From January 2006 to November 2015, 182 patients underwent aortic arch surgery for acute type A aortic dissection in 68, chronic type A dissection in 24, aneurysm of ascending aorta with involvement of aortic arch in 77, and other indications in 13. Normothermia or mild hypothermia (30 -34 °C) was used in 124, moderate hypothermia (24-29 °C) was used in 37 patients, and deep hypothermia (< 24 °C) was used in 21 patients. During arch reconstruction, continuous ACP was maintained by perfusion of right carotid artery alone in 116 patients and along with left common carotid artery perfusion in 66 patients. For right sided perfusion, 30 % of total calculated flow at normothermia was used. For bilateral ACP, 40% of total calculated flow at normothermia was used. Cerebral perfusion was monitored by Near Infra Red Spectroscopy. Detailed neurological examination including Mini Mental Status scoring system (MMS) on post operative day 4 was performed in 102 patients (later half).

The surgical procedure performed included Bentall's with arch replacement with elephant trunk in 10, Bentall's with arch replacement and antegrade stent placement in 5, Bentall's with arch replacement in 26, ascending aorta with arch replacement in 16, Bentall's with hemiarch replacement in 83, and others in 32 patients.

There were 5 operative deaths. Mean extubation time was 4 hours. There was no new neurological deficiency in any of the patient. Five patients had seizures. MMS score was within normal range in all. MRI was performed in 37 patients after 2-6 months. MRI did not show any lesion related to hyperperfusion. Follow up ranged from one month to 108 months. There was no new onset neurological symptoms in the follow up.

Conclusion: Aortic arch reconstruction can be safely performed with continuous high flow antegrade cerebral perfusion with good neurological outcome.



Title of Paper: A complication in a case of Arterial Switch Operation which extended 148 hours duration of CPB

Speaker: RAMESH K K.

Co-Speakers: G.L. Bharti, Shailender Soni, Linu Viswanath ,Dr.K.S.IYER
Fortis Escorts Heart Institutes,
Okhla Road, New Delhi Pin: 110025
ramkaykay@gmail.com

About Speaker:

22 YRS EXPERIENCE, CHIEF PERFUSIONIST (PAEDIATRIC)

AIMS AND OBJECTIVES:

Discussion on extended perfusion for a patient where the survival chance was minimal, Long duration of CPB , Problems faced and steps taken to overcome during the process of changing the HLM Sarns 8000 to HL 20 ,changing to VA ECMO circuit, how and why we came back to regular CPB and how we weaned off Successfully is our objective.

CASE REPORT:

B/O Rayan Sarwat Hakim Age: 2 months ,weight :5.4 kg ,Diagnosis CCHD, d-TGA(Regressing LV), Intact Septum ,S/p Balloon Septectomy, and PDA . Surgery :ASO.

SETUP: Long visions- Made a bypass line inbetween venous line and reservoir ; similar another bypass line across the oxygenator at the time of assembling.

INCIDENTS IN OT:

CPB was initiated as usual with an aortic cannula 10Fr.(welfare),SVC 12 Fr , Ivc 14Fr right angled Edwards. Cooled to 25 degree. Cross clamp time was 90 minutes and CPB was 150 minute + 49 minutes. Weaned off with a systemic pressure of 45mmHg to 50mmHg and LA Pressure of 6mmHg to 8mmHg. But after protamine, LAP started elevating and heart distended. In spite of support with Milrinone and Dobutamine, LAP was not stabilized. Decided to go on supporting CPB again and gone on CPB for some and tried to wean Off. As repeated trial was failed, decided to keep CPB for 24Hrs.RA cannulation done with 16Fr.

Shifted to ICU on CPB. Then we have changed Sarns 8000 to HL 20. Next day we changed Oxygenator. Changed from roller to centrifugal pump of ECMO, faced problem of flow, tried the trouble shooting and failed and again gone back to open circuit. Many times failed to wean off. After marathon 148Hrs of CPB, weaned off the patient success fully .We will reveal the problem faced and overcoming those in depth during presentation.

CONCLUSION: We can continue CPB with a regular Oxygenator up to this length was new knowledge for us .Few steps with a long vision can make things easy in spite of all adverse conditions.



Title of Paper: Microemboli Formation during CPB: Perfusionist Intervention.

Speakers: Ritu

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All India Institute of Medical Sciences, New Delhi.

Brief Description about Author: Clinical Experience in the field of Perfusion from 12 years and teaching MSc for the last 12 years.

ABSTRACT

Perfusion quality during cardiopulmonary bypass (CPB) procedures can contribute to postoperative neurological complications and influence patient recovery and outcome. Gaseous microemboli generated in the circuit and hemodynamic properties of blood reaching the patient can be monitored during CPB to optimize perfusion.

Systemic embolism affecting the brain is a recognized complication of Cardiopulmonary bypass. Focal neurological deficit has been associated secondary to gaseous embolism or hypoperfusion by particulate microemboli. Also compelling evidence of link between microemboli and poor neurological outcomes have been found when the number of detected emboli is directly compared with patients undergoing same surgical procedures. There have been extraordinary improvements in clinical practice through ongoing research and development, improvements in technology, equipment, techniques and management of CPB have minimized major complications that were faced in early days; however, microemboli generation remains the fact of CPB use.

CPB circuit blood comes in contact with outside environment and loses this balance. Furthermore, gaseous microemboli have been long associated with CPB, due to the nature of complexity and circuit design. There are various sources in CPB circuit where generation of emboli occurs, oxygenators, venous reservoirs, cardiotomy suckers, intracardiac vents are some of them. Although the clinical relevance of cerebral air embolization in causing neurological damage is unclear, every single person involved in perfusion and surgical technology should be aware of the risk of embolization and strictly regulate clinical behavior. Related research should also be done to improve the design of circuit components and clinical practice with a view to eliminating air bubbles during CPB procedure.



Title of Paper: CentriMag: Biventricular Assist Device (BIVAD) as a successful bridge to Heart Transplant.

Speakers: Ms Romiya Rajan.

Co-speakers: Dr Jose Chacko Periappuram, Dr Jacob Abraham, Dr Bhaskar R, Mrs Subhashni, Mr Jinil, Mrs Sivapriya, Mr Jinson., meetromiyarajan@gmail.com
DEPT OF CARDIAC SURGERY, LISIE HEART INSTITUTE, KERALA.

About Author: GRADUATED FROM NARAYANA HRUDAYALAYA, CURRENTLY WORKING AS A PERFUSIONIST AT LISIE HOSPITAL.

Abstract

Introduction:

There is no comparable alternative to heart transplantation in treating end stage heart failure patients. However, there is a huge disparity between available donor hearts and recipients waiting on the cardiac transplant list. With reliable assist devices bridge to transplant (BTT) therapy is a boon for patients awaiting transplant.

Case history:

A 32 year old software engineer with ischemic cardiomyopathy was awaiting transplant. He had Ventricular Tachycardia (VT) and was reverted with DC shock. Three days later he had VT with hemodynamic instability and was taken up for emergency central ECMO (extracorporeal membrane oxygenation). Three days later Biventricular assist device (CentriMag: Levitronix) was instituted exchanging with the ECMO and all cannulae were tunneled subcostally and the sternum was closed. He was extubated, mobilized and was stable on the BIVAD. He was successfully transplanted after 13 days.

Discussion:

The CentriMag consists of a continuous flow centrifugal blood pump, a primary console and motor, a flow probe, a backup console and motor, tubing, and cannulae. The pump, which has a priming volume of 31 mL, can be operated up to a maximum speed of 5500 rpm while generating up to 9.9 L/min flow. Its Blood Pump is controlled electromagnetically. The impeller is magnetically levitated. The CentriMag design characteristics are intended to minimize trauma to blood cells, and to allow left, right or biventricular circulatory support for up to 30 days. He was discharged home satisfactorily with uneventful recovery.

Conclusion:

The increased utilization of BIVADs will improve patient outcomes in challenging situations where a human heart is not available. Our experience shows that a favorable outcome can be achieved with use of a BIVAD as a bridge to transplant.



Title of Paper: Strategies to Minimize Pulmonary Complications in Cardiac Surgery with Cardiopulmonary Bypass

SARAVANA PERUMAL O M, Mr.T.Uday kiran., Dr.C.Kodhandapani Ramanujadasudu.,
Dr.Harish Babu.

Narayana Medical College & Hospital, Nellore, Andhra Pradesh

Speaker: SARAVANA PERUMAL O M, saranahs@gmail.com

About the Speaker:

Author graduated in B.Sc (Perfusion technology) and worked in Sri Ramachandra University, Chennai.

ABSTRACT

During open heart surgery the influence of a series of factors such as cardiopulmonary bypass (CPB), hypothermia, type of surgery and anesthesia, medications and transfusions can cause a diffuse trauma in the lungs.

Postoperative pulmonary complications are the most frequent and significant contributor to morbidity, mortality and hospitalization. Interestingly, the pulmonary complications and its management vary widely. Understanding of the pathophysiological basics of the the development of these pulmonary complications is fundamental.

In this paper we would like to suggest the different strategies to be followed in order to prevent the postoperative pulmonary dysfunction, which includes miniaturized extracorporeal circuits with biocompatible surfaces, meticulous myocardial protection during ischemia and reperfusion, leukocyte depletion, ultrafiltration, hemodilution, cardiotomy suction, pharmacological interventions and ventilation management during CPB.



Title of Paper: Extra-Corporeal Circulation in HIPEC for Pseudo- Myxoma patients: Promising a new lease of life

Speaker: Saritha TK,
Chief Perfusionist, Aster Medicity, Kochi, Kerala, India
saritha.tk@yahoo.co.in

About Author:
Chief Perfusionist, Aster Medicity, Kochi, Kerala

ABSTRACT

Introduction:

Cardiopulmonary bypass has been the singular factor responsible for the evolution of cardiac surgery. The advances in extracorporeal technology (ECC) have contributed to the application of this epoch -making technique in other aspects of medicine. ECC also has its evolution from being used in cardiac surgical settings to become a part of other faculties and specialities of medicine. We describe here our clinical experience in application of ECC Hyperthermic Intra Peritoneal Chemotherapy (HIPEC).

Description:

10 patients were subject to HIPEC using ECC at our Institution, Aster Medicity. These Patients were diagnosed with Pseudo-Myxoma Peritonei (PMP). The demographic, patient clinical details, pathophysiology of PMP, role of ECC in HIPEC and strategy employed for HIPEC will be discussed in details in the presentation.

Conclusion:

ECC for HIPEC is a safe and effective application in a non cardiac setting of ECC that provides a reliable route of providing chemotherapy for patients. As in any multidisciplinary application of medicine, healthy interaction, communication and co-ordination between the team members are vital for improving both quality and outcome of patient care. ECC for HIPEC represents an exciting growing vista involving the application of ECC for non cardiac settings.



Title of Paper: Perfusions Strategy in MICS- Our Experience

Speaker: Satyanarayan G,

Co-Speakers: Madhu Mohan C, Bhikshapathi P, Chinni G, Lakshmi, Gopichand M
satyamghanta@gmail.com
STAR Hospital

About Author: Chief Perfusionist

Abstract

Minimally Invasive cardiac surgery (MICS) is widely used in cardiac surgical practice today. The advantages of a small scar, minimal blood loss, earlier recovery, short hospitalization and earlier return to work make it an ideal procedure for carefully selected patients. Perfusion strategies customized to facilitate smaller incisions are smaller cannulae for arterial & venous access and application of vacuum assisted venous drainage which pose challenges to the perfusion team.

AIM: To study the adequacy of cardiopulmonary bypass during minimally invasive cardiac procedures using smaller cannulae and vacuum assisted venous drainage.

MATERIAL & METHODS: From January 2013 to October 2016, 287 patients underwent MICS procedures. Cardiopulmonary bypass was established through right femoro-femoral cannulation and negative pressure of 25 to 45 mm Hg vacuum assisted venous drainage was applied in all patients. Parameters monitored included serum lactate, mixed venous oxygen saturation, urine output, transfusion index and length of hospital stay.

RESULTS: Adequate cardiopulmonary bypass was achieved in all patients. No adverse neurological event or mortality was noted. Mean levels of lactate, mixed venous oxygen saturation and urine output were respectively 2.3 mmol/l, 75.8 and 2.9 ml/kg/hr. Average drain output was 100 ml. Transfusion index was 0.43. Four patients underwent re-exploration for bleeding through the same incision. Mean ICU and hospital stay was 1 day and 3.5 days respectively.

CONCLUSION: In spite of unique requirements for perfusion in MICS, near normal homeostasis with adequate tissue perfusion can be achieved. The clinical outcomes are also better with early discharge to home and low morbidity.



Title of Paper: Perfusion navigator for smart(phone)Perfusionist

Speaker: Mr.Sridhar.S (Msc 2yr student),

Co-Speakers: Avinash M, Anand G, Kiran L,Sunil S,

Tanaji K , Dr.Anand Vagarali, Dr.Mohan Gan, Dr.Richard Saldana.

aiimssri_perfusionist@yahoo.com

KLE's Dr Prabhakar Kore Hospital & MRC, Belagavi,INDIA.

About Author: MSc(PERFUSION TECH) FINAL YEAR AT KLE UNIVERSITY, BELAGAVI

Abstract

AIM: 'Perfusion navigator' is a kind of 'APP' created and program written by me to give qualitative and evidence based perfusion care to the patient "on CPB".

OBJECTIVE: 'Earth moves same pace but the perfusionist thinks faster Pace'. Now a days, India is moving towards digitalization, most of the perfusionist having 'SMART PHONES', having different medical APPs and perfusion APPs. Regular medical apps doesn't give you the exact CPB results because CPB physiology is different from normal human physiology. Other perfusion apps will provide us the data of pre-bypass calculations, Hct, BSA, pump flows and cannula selection etc...! What about "on CPB" results? Corrections? Recommendations? non-mechanical alerts? and guidance to achieve perfusion goals? The perfect answer would be "**PERFUSION NAVIGATOR**". It will guide you to adjust your blender "gas flows& Fio2", heparin dose when ACT is low, amount of blood require reaching your Hct goal, recommending the dose correction of electrolytes and alerting the perfusionist in time of 'oxygenator failure'! All these 'artificial intelligence' things can be possible at your finger tips, when you have perfusion navigator. The "perfusion navigator" app which is created, is not released yet, I am going to show you online DEMO at conference and "what's app" version will send to all fellow perfusionist at bengaluru conference. If no modification requires 'the app' will be uploaded soon in 'Google play'!

CONCLUSION: 'Smart (phone) Perfusionist with 'Perfusion navigator" does the same perfusionist job but differently, I hope this ISECT conference @ IISC, Bengaluru will be 'MIND' blowing.



Title of Paper: AORTIC ARCH RECONSTRUCTION USING ACP IN INFANTS SHOWING EARLY NEUROLOGICAL OUTCOME

Speaker: Sumathi Maheshwaran.

Co-Speakers: Nivas begam Nazar, Banupriya Ravi, Umapathy Jagannathan, Soundararajan Srinivasan, Daniel Valentine Jones, Vijayakumar Raju
Division of Cardiothoracic Surgery,
G.Kuppuswamy Naidu Memorial Hospital, Coimbatore, Tamilnadu, India

ABSTRACT

INTRODUCTION:

Management of Cardio Pulmonary Bypass (CPB) in Infants needing aortic arch reconstruction is challenging. The controversy still remains about use of selective cerebral perfusion and hypothermic circulatory arrest. We reviewed our perfusion strategies in infants undergoing arch reconstruction at our centre.

MATERIALS AND METHODS: A total of 9 patients underwent Aortic Arch Reconstruction from July 2014 to Sep 2016 were analyzed retrospectively. The median age was 17 days (5 days - 1 year) and the median weight was 3.5kg (2.5-7.3kg). Four of them were neonates. Six of them had hypoplastic arch with severe coarctation of aorta with VSD. Three of them had Type A Interrupted arch. All pts had radial and femoral arterial line at the time of induction. CPB was established with arterial cannula in the right lateral aspect of distal ascending aorta just below the innominate artery. Second arterial cannula was used in patients with interrupted arch via PDA for lower body perfusion. Single or bicaval venous cannula was used as appropriate. All patient had "conventional ultrafiltration" during CPB and hemoglobin was maintained about 12g/dl. All patients were cooled down to 20 deg C and "alpha stat" strategy was used. Del Nido cardioplegia solution was used for myocardial protection. Intra cardiac repair was completed during cooling. Once temp is reached to 20 degree, the arterial cannula is moved into innominate artery for selective antegrade cerebral perfusion. We perfuse about 30-50ml/kg/min for antegrade cerebral perfusion and maintain mean pressure of 30-40mmhg in the right radial artery pressure. After arch reconstruction, the arterial cannula is moved from innominate artery into the arch for uniform rewarming.

RESULTS: The median CPB time was 171 mts(129-198 mts). The median Aortic Cross Clamp time and Antegrade Cerebral Perfusion time was 120mts (66-136 mts) and 60 mts (28-74 mts) respectively. Two pts died (25%) immediately after surgery due to PAH crisis and multiorgan failure. The median hospital stay and ICU stay was 7 days and 5 days respectively. No perfusion related adverse events occurred in all these patients. All patients had complete neurological recovery within 6-10 hours after surgery and were neurologically intact at the time of discharge. The median follow up was 240 days (10 days-485 days). All the 7 pts are in NYHA Class I with no neurological deficit.

CONCLUSION: Selective cerebral perfusion for arch reconstruction can be performed safely. It gives enough time to the surgeon to perform complete repair without any adverse neurological outcome to the patient.



Title of Paper: PRACTICE OF PERFUSION: ARE WE OVERLOOKING /OVERDOING IT???

Speaker: SURESH BABU ROBERT

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Dubai Hospital, Main O.T, PB No; 7272, Dubai, UAE

About Author: Senior Clinical Perfusionist working for more than 20 years

Abstract

Cardiopulmonary bypass has been hailed as the greatest achievement of science since man's mission to the Moon. From the birth pangs to the learning curve experienced by many illustrious personalities, extra corporeal circulation has evolved a long way in a relatively short span of time to become an integral, safe, evidence based practice which has contributed to the evolution of cardiac surgery and other concepts of modern medicine.

The current practice of techniques in extracorporeal circulation aim primarily to mitigate the purported disadvantages of the practice and simultaneously provide evidence based safe perfusion to the patient. Many concepts in extracorporeal circulation hitherto held sacrosanct have been turned on their head with the advent of modern equipment and literature emphasizing on the need to evolve.

However all of these definitely come at a price. In the search for the "Perfect Perfusion Practice" many of us have been guilty of overlooking or overdoing some innovations and techniques which may paradoxically prove detrimental to safe practice.

The presentation attempts to highlight certain strategies in extracorporeal circulation which are critical for optimal perfusion - in the light of more than two decades of clinical practice by the author and how by 'tweaking it' one could end up doing more harm than good. The details are highlighted in the presentation just as "the proof of the pudding is in eating it".



Title of Paper: Pediatric non cardiac ECMO: Expanding the horizon for perfusionist

Speaker: Suresh S

sureshsilveri198@gmail.com

Address : Krishna Institute of Medical Sciences, Minister Road,
Secunderabad, Telangana, PIN : 500003, India.

About Author: Suresh S, Pediatric perfusionist

Abstract

INTRODUCTION

Extracorporeal Membrane Oxygenation has now been an important part of part of healthcare armamentarium for over 40 years. Over a period of years, changes in circuit technology have resulted in improved survival and have facilitated the use of ECMO in patients of all age groups.

METHODS:

A retrospective analysis of the data of pediatric non cardiac ECMO done at our center was done from September 2013 to September 2016.

RESULTS:

During this period 15 non cardiac Pediatric ECMO cases were done. The weight range between 3.6 kg to 64 kg. The distribution according to age groups were neonate 1, infant 4, 1 year to 5 years (5), and beyond 5 years were 5. Of these 4 were VV ECMO, 11 were VA ECMO. Three patients required conversion from VV to VA and 1 from VA to VV ECMO. All VA ECMO cannulation were done surgically and VV ECMO were established percutaneously in the ICU. There were no central ECMO runs. Total ECMO run days were 198 days. The range of ECMO duration 1 to 59 days (mean 13 days). Of the 15 ECMO patients 9 were weaned from ECMO and there were 6 survivors to discharge. A protocol assessment of circuit was done every day to identify any circuit related issues. During this period 2 patients required oxygenator change and 1 patient required change of centrifugal pump because of hemolysis. One patient required cannula change because of kink in the arterial cannula. One patient required reexploration because of cannulae site bleeding.

CONCLUSION:

Careful monitoring /vigilance and involvement of other team members in the circuit management prevents any major life threatening ECMO circuit related events.



Title of Paper: A PREEMPTIVE APPROACH FOR INFECTIVE ENDOCARDITIS – A NEW PARADIGM

Speaker: Mrs.Thilagavathy,

Co-Speakers: Mr.Rajkumar, Ms.Blessy, Dr.Prashant Vaijyanath,

Dr.Gunaseelan, Dr.Smitha,Dr.Kappian

tilaka.raj84@gmail.com

About Author: Experienced in conducting CPB for Aortic aneurysm, heart&lung transplant, MICS(Robotic), HILP & ECMO

Abstract:

Despite advances in medical and surgical therapy, Infective Endocarditis remains highly morbid and the deadly infection is still challenging the surgical team. Here we present a 51 year old male with extensive Infective Endocarditis of mitral valve with AML prolapse and severe mitral valve regurgitation. Investigations revealed elevated inflammatory markers and blood culture isolated beta haemolytic streptococcus sensitive to ceftriaxone. Despite antibiotic therapy for two weeks, he continued to be in gross failure and sepsis, hence a semi-emergent MVR has contemplated. An extracorporeal cytokine adsorber (CYTOSORB™; CytoSorbents Europe GmbH, Berlin, Germany) was clinically applied from onset of CPB owing to fulminant preoperative sepsis and continued post operatively in critical care unit for 20 hrs to remove inflammatory mediators which can lead to post-operative complication including multi organ failure. Cytosorbents is based on biocompatible highly porous polymer beads (polystyrene-divinyl-copolymer) that can actively remove toxic substances from the blood by surface adsorption. The installation of the Cytosorb adsorber on CPB was safe and technically feasible and no adverse device related side effects occurred. The patient outcome was improved with positive hemodynamic effects and he was discharged on 7th POD. At six months follow up, he was doing well without any signs of sepsis and good prosthetic valve function on Echo. Further investigations and comparative studies could be done for analysing the beneficial effects on the complex surgeries requiring long pump run.



Title of Paper: Heart-lung procurement, preservation and transportation techniques for successful transplantation

Speaker: Mrs.Thoyajakshi

Co-speakers: Mr.Kiran Kumar, Dr.Govini Balasubramani, Dr. Shanmugam.

thoyajakshi@gmail.com

Global hospitals, Chennai.

About Author: WE HAVE DONE MAXIMUM NUMBER OF LUNG TRANSPLANTS IN INDIA.

Abstract

Introduction: In recent years, India has observed unprecedented wave of success in heart, lung transplantations. Optimal Heart/ lung procurement from brain dead donor, preservation techniques are being continually researched.

Discussion: Once the organ is allotted by Cadaver Transplant Programme(CTP), concerned hospitals will arrive for organ procurement. The donor incision, exploration, inspection, mobilization of individual organs is followed by systemic heparinization. 7 fr Cardioplegia cannulae inserted in ascending aorta to deliver HTK solution and MPA cannulated with 20 fr aortic cannulae for pulmonoplegia. Organ preservation solutions should be chilled,inspected, de-aired ,mixed with additives and hanged in IV stands before aortic cross clamp..

After cross clamp, custodial is delivered for heart preservation and time is noted. Immediately venting the LA appendage, incising the pulmonary vein precludes the LV distention. Perfadex delivered into MPA for lung retrieval .Both the solutions are delivered according to the patient's weight. Each pulmonary vein is perfused with 250 ml of perfadex in the back table. Both Heart and/or lungs are packed in 3 layers following aseptic techniques. Packed organs kept in thermo resistant ice filled box preferably with digital temperature display on it. Date,time,address,precautions label on the box eliminates confusions. Synchronized transportation to the recipient hospital promote transplant success.

Conclusion: Co -ordinated effort, minimized warm ischemia time, expeditious transit and hypothermic preservation promotes optimal graft survival and function.



Title of Paper: UNEXPECTED CATASTROPHIC EVENT ON CPB DURING CARDIOPLEGIC ARREST

Speaker: U.MOHAMED.IMRAN
CHIEF CLINICAL PERFUSIONIST DEPARTMENT OF ECCT, DIVISION OF CTVS
PSG INSTITUTE OF MEDICAL SCIENCES & RESEARCH PEELAMEDU
COIMBATORE – 641004

About Author: Working as a chief perfusionist at PSGIMSR, Coimbatore.

INTRODUCTION

The conduct of Cardiopulmonary bypass has been always associated with the risk of minor to major life threatening accidents and untoward incidents, since it involves a variety of complex systems and procedures. And it is always upto the perfusionist duty to minimize the risks and prevent accidents by adopting respective safety concerns related to the procedure. The best way of reducing error rates is to target the underlying system failures and root causes of incidents, rather than focusing on actions of individual member or staff.

CASE REPORT

A 50 y/o male patient had been posted for an elective on pump CABG. A regular CPB circuit was set for the procedure. As we were on bypass, with a well arrested heart on X-clamp, and few minutes into the surgery we witnessed something unusual, and figured out a major problem, which turned into a mayday scenario. Within a flash, the whole team acted promptly without a speck of delay to salvage the situation and restore control.

RESULT

The calm demeanour of the entire team including surgeons, anesthetist and perfusionist helped us bail out from a grave scenario, which otherwise could have been dangerous and life threatening. Hence, we would like to share our experience with everyone to help ourselves and others understand better on the safety aspect of the conduct of CPB.

CONCLUSION

Pre-meditating a worst case scenario by working out a proper drill and being pro-active all the time is the key lesson we learn from this incident.



Title of Paper: PRIMARY ECMO TRANSPORT - A UNIQUE EXPERIENCE ON WHEELS

Speaker: VEDASREE.S
Vedasree.s92@gmail.com

About Author:
COMPLETED GRADUATION FROM SRMC, PORUR, AND CHENNAI.
WORKING IN MANIPAL HOSPITAL FOR THE PAST 3YRS

ABSTRACT

ECMO is a life saving procedure for patients with severe pulmonary or cardiac failure or patients in need for a bridge to transplantation. Indications for transport ECMO includes lack of ECMO services and if there is a need to move a patient on ECMO for specialised service such as VAD implantation or organ transplantation

So our's is an experience about primary transport with nil transfusion. We report a case of 22 year old international patient who had severe acute biventricular dysfunction suspecting viral myocarditis who was put on V-A ECMO and transported from Mangalore to Bangalore on tough terrain covering a distance around 450kms. He improved gradually and he flew back to his country in the last week of December to welcome the New year with his family.

TAKE HOME MESSAGE-

Transporting the patient on ECMO to the ECMO facility, patients safety is the overriding priority and the time is off secondary importance.

Hope For Patients with Heart Failure



The advances in medical science has helped chronic heart failure patients lead a better quality of life with reduced re-hospitalisation and early death. Specialists at M S Ramaiah Narayana Heart Centre ensure that your heart beats safely and reliably for the longest possible time. To know more about our heart failure management at the centre ☎ **080-2218 3078**

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- Artificial Heart
- Heart Transplant



SCIENTIFIC POSTERS ABSTRACTS



ISECTCON - 2017
B E N G A L U R U



Title of Poster: ROBOTIC ATRIAL SEPTAL DEFECT CLOSURE – OUR EXPERIENCE

Speaker: Ms.Blessy,
tilaka.raj84@gmail.com

Co-Speakers: Mrs.Thilagavathy, Mr.Rajkumar, Dr.PrashantVaijyanath, Dr. Gunaseelan, Dr.Smitha, Dr.Kappian
Kovai medical center and hospital, Coimbatore.

About Author: Experienced in Adult Perfusion, IABP therapy, HIPEC, perfusion for MICS and Adult ECMO.

Abstract:

Robotic cardiac surgery is an evolutionary and revolutionary approach to minimize the invasiveness of cardiac Surgery. The surgery is performed through a small incision, often using specialized surgical instruments with incisions ranging from 2 to 4 cm as opposed to the 6 to 8 inches incision used for the traditional median sternotomy. Those patients' benefits with minimizing surgical trauma, quicker recovery, improved cosmesis, reduced postoperative pain and surgical infection. Da Vinci is a developed computerized surgical robotic system which assist surgeon by allowing tele manipulation through a master controller activation principles with a high definition 3D intra cardiac camera. Here we report two cases that underwent totally endoscopic ASD closure using Da Vinci robot. The conduct of cardio pulmonary bypass during MICS will vary from the standard methods of perfusion in a number of ways. Smaller incisions will require alternative methods of circuits and cannulation as well as the use of assisted venous return. We have discussed about remote-access perfusion, case procedure, myocardial protection techniques, monitoring during CPB and method of deairing the heart. Our experience may be very important for further management of patients undergoing robotic cardiac surgery.



Title of Poster: STRATEGY FOR SUCCESSFUL MANAGEMENT OF
CARDIOPULMONARY BYPASS IN RE-OPERATIVE CARDIAC SURGERIES

Speaker: SELVARAJ CHANDRAN,
Co-Speakers: ROY THANKACHEN, SHUKLA VINAYAK, MANICKAM SHANKER,
SAHAJANANDAN RAJ, GNANAMUTHU BIRLA, SRINIVASAN DHARINI
CHRISTIAN MEDICAL COLLEGE & HOSPITAL, VELLORE

About Author: PERFUSIONIST WITH 10 YEARS EXPERIENCE

INTRODUCTION:

Re-operative cardiac surgeries pose a set of specific problems for the surgeon and the Perfusionist and pose a higher incidence of morbidity and mortality. It is a challenge for the Perfusionists to constantly endeavor to improve the results and plan the strategy for different cases.

AIM:

To analyze the strategies for successful conduct of bypass in re-operative cardiac surgical cases.

METHOD:

The perfusion details of twenty five consecutive re operative cardiac cases were analyzed retrospectively. Strategies analyzed included cannulation techniques, priming protocol, use of Hemofilter and Acid-Base balance strategy.

RESULTS:

Colloid priming was used in all re-operative cases. Blood conservation techniques were followed. Circuit changes were carried out as appropriate. Hemofilter was used in all cases. With appropriate strategy, the post operative cardiac function was excellent.

CONCLUSION:

Appropriate perfusion technology is to be individualized and planned for each re-operative cardiac surgery to optimize the results. The details will be presented with the poster.



Title of Poster: ANAESTHESIA DURING CARDIOPULMONARY BYPASS – DOES IT MATTER TO PATIENT OR THE ENTIRE TEAM?

Speaker: **SRINIVASAN DHARINI,**
[dharinisrinivasan.94@gmail.com](mailto:धारिनिस्रिनिवसान.94@gmail.com)

Co-Speakers: MANICKAMSHANKAR, THANKACHEN ROY, SHUKLA VINAYAK, GNANAMUTHU BIRLA ROY, SAHAJANANDAN RAJ. CHRISTIAN MEDICAL COLLEGE & HOSPITAL, VELLORE.

About Author: BSC Perfusion in CMC and currently working as a staff in CMC

BACKGROUND:

Long term occupational exposure to trace concentrations of volatile anaesthetics is thought to have adverse effects on the health of exposed personnel. In contrast to Halothane, an agent likely to cause mutagenic effects and proven to be teratogenic Isoflurane and Enflurane have not so far been proved to have adverse effects on the health of personnel exposed long term. The sole use of intravenous drugs such as Propofol instead of volatile agents, were this possible, would eliminate occupational exposure,

AIM:

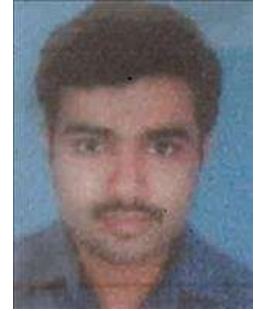
The Aim of this short term observational study was to compare the effect of inhalational and intravenous Anaesthetics on the Perfusionist and the other members of the cardiac surgical Team.

METHODS:

At our institute, Anaesthesia during Bypass was maintained using Isoflurane Vaporizer. Recently we have switched over to Propofol Infusion to the pump to maintain the depth of anaesthesia. We questioned the entire team at the end of day about their working experience from then to now. The surgeons , Anaesthesiologists , Perfusionists , Scrub Nurses , Circulating Nurses , Technical Personnel Strongly felt the Frequency and incidence of Tiredness , Sluggishness has markedly reduced after Switching over from Isoflurane to Propofol

CONCLUSION:

The safe limits of Inhalational Anaesthetic agents are still not discoverable, Hence the mere inspiration of these drugs can be harmful to the personnel exposed, Moreover taking into consideration the Teratogenic nature of the inhalational drugs and the damage it poses to the Ozone layer and the survey results we took in our theatre, we feel Propofol may be a better drug of choice to maintain an anaesthesia on pump and the awareness for such issues has to be raised.



Title of Poster: PRESSURE RELIEF VALVE; AN INNOVATIVE METHOD FOR PREVENTING OVER PRESSURISATION OF CPB CIRCUIT

Speaker: Don Sebastian
doncross2000@gmail.com
Sree chitra institute for medical sciences and technology, SCTIMST Trivandrum, Kerala

About Author: I have been working in SCTIMST Trivandrum for last 8 years

INTRODUCTION: Despite the presence of modern electronic pressure sensors, over pressurization in the CPB circuit is a major concern with roller pump. The multipurpose pressure relief valve (PRV) incorporated $\frac{1}{4}$ " tubing is an additional safety to the CPB circuit.

METHODS/CASE REPORTS CONDUCTED IN LAB

On trial basis we used Medtronic myotherm PRV by incorporating it in between the pump outlet and Baby Rx-05 venous reservoir. PRV incorporated tubing was two and half feet in length and with a diameter of $\frac{1}{4}$ " x $\frac{1}{16}$ ". Proximal end of the PRV tubing was connected to the pump outlet by incorporating a $\frac{1}{4}$ " Y connector in between. Distal end of the PRV tubing goes to the venous reservoir. A bypass line measuring $\frac{1}{4}$ " x $\frac{1}{16}$ " was placed parallel to PRV line for de-airing and other purpose. After priming the entire circuit, the bypass line was left clamped. Over pressurizing the pump outlet to 500 mm Hg, led to opening of PRV through which audible shunting of prime occurred from pump outlet to reservoir.

RESULTS/ DISCUSSION

Shunting through the PRV limit the outlet pressure to a safer level. In additional occlusion of the pump head can also be checked. Accidental air entry into pump head can be managed through PRV line sparing the oxygenator. Hemo-concentrator can be connected to this circuit. Over pressurized shunt is audible.

CONCLUSION

Proposed circuit is easy to assemble, cost effective and compact. The PRV is used is compatible with low arterial flow. Hence in future there is a need to develop a PRV, which is compatible with varying arterial flows.

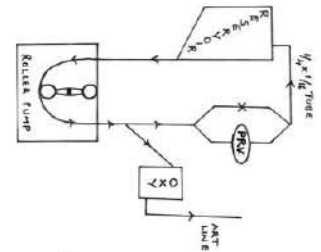


Fig. 1



Title of Poster: "PRE HEMOFILTRATION OF BANKED BLOOD PRIME TO NORMALIZE HYPERKALEMIA IN PEDIATRIC PERFUSION"

Speaker: **ELIZABETH JOHNSON,**
elizperf@gmail.com

Co-Speakers: ROY THANKACHEN, VINAYAK SHUKLA, SHANKER.M, BIRLA GNANAMUTHU, DHARINI.S. CHRISTIAN MEDICAL COLLEGE & HOSPITAL VELLORE

About Author: COMPLETED PG DIP IN 2006 AND BSc PERFUSION AND NOW WORKING AS PERFUSIONIST IN CMC

INTRODUCTION:

Cardiac surgery in Children weighing less than 10 Kilograms is a challenge. Banked Blood is used as a priming solution. Banked Blood contains high levels of potassium and this makes it mandatory for Pre Bypass Ultra filtration.

OBJECTIVE:

To study the use of Pre Hemodialysis of Banked Blood to reduce the potassium content before commencing Bypass in children weighing less than 10 kg.

METHODOLOGY:

A retrospective analysis of details of cardiopulmonary bypass of 25 consecutive paediatric patients weighing less than 10 kg undergoing cardiac surgery for various congenital disease conditions were studied. These patients required Banked Blood for priming. The potassium value in the banked Blood was analyzed and was to be on a higher side. Pre Bypass Ultra filtration was done and conclusions obtained.

RESULTS:

The initial elevated Potassium content greater than 20 mEq/L were normalized to physiologic values.

CONCLUSION:

The pediatric Myocardium cannot Tolerate Electrolyte Imbalance. In children, the circulating Blood volume being lower than the priming volume of the Extracorporeal Circuit. Hence washing of the Banked Blood was employed to bring the potassium levels to physiological levels before initiating Bypass. Other Details Pertaining to this study will be discussed along with the Poster.



Title of Poster: HLM use for CVVH in post cardiac surgery patients “unfit” to hemodialysis:
A new experience

Speaker: MrMrinal Mandal,
mrinalmandal01@gmail.com

Co-Speakers: DrJyoti Prasad Kalita, Prof. Manuj Kumar saikia

About Author: PG from CMC, VELLORE

Abstract

A 65 years old woman presented to us with NYHA class II dyspnoea and diagnosed to have triple vessel Coronary Artery Disease with severe Aortic stenosis with LV ejection fraction of 40%. She was a known case of stage 3 chronic kidney disease with serum creatinine of 1.8 mg/dl. She underwent CABG with AVR. Her blood and urine NGAL level was continued to be high from 4th hour till 3rd post operative day. Her renal parameters had further deteriorated with clinical anuria. She was on ventilator support with low haemodynamics (Systemic BP 66/43mmHg) inspite of high inotropic supports. The patient was not fit for haemodialysis.

The aim of the following procedure is to look for feasibility of use of Heart Lung machine and standard hemofilter for renal replacement therapy to salvage a patient who is otherwise not fit for haemodialysis.

A modified circuit was prepared in which femoral venous blood is allowed to pass through blood pre-primed (so that patient's haemodynamics will not be altered by letting the blood volume down) tubing which was further mounted at a pump head of CPB machine. Further tubings are connected from pump head tube to the hemofilter and from hemofilter to femoral vein. The pump was run at slow pace. The waste products and water (ultrafiltrate) are produced by hemofilter are collected and discarded. The blood is returned to the patient via femoral vein. The procedure was performed for once daily for 3 days. Each cycle was performed for 12 to 18 hours. The effective volume of fluid extraction, blood parameters of urea, creatinine, potassium, ABG parameters, haemodynamics and clinical parameters were encouraging.

Conclusion

The continuous veno-venous haemofiltration (CAVH) with the help of roller pump heart lung machine is an effective temporary management for a hemodynamically unstable post cardiac surgery ICU patient with acute renal failure who won't have tolerated haemodialysis.



Title of Paper: INDIGENOUS USE OF SILICONE FOLEY'S CATHETER FOR SACP IN AORTIC ARCH SURGERIES

Speaker: Mr. Satish Kumar Choudhary
ETERNAL HOSPITAL & RESEARCH INSTITUTE, JAIPUR, RAJASTHAN

A 32 years old female, admitted to our hospital with history of pain in neck and pain in right arm for last one and half months for which she was investigated. Her CT aortogram and echocardiography revealed Aneurysmal dilatation of aortic root and ascending aorta with type B (Stanford classification) dissection, with Moderate to Severe AR. The patient underwent Bentall procedure and two-vessel aortic arch replacement. During Cardiopulmonary bypass (CPB), deep hypothermic circulatory arrest (DHCA) was established with selective antegrade cerebral perfusion (SACP). In view of extension of dissection flap up to innominate artery, axillary artery cannulation could not be done. However, SACP was administered via innominate & left common carotid artery (CCA) using manually inflated silicon Foley's balloon catheter respectively, at the flow rate of 10ml/kg through a separate pump. The silicone Foley's catheter was selected for its adequate flexibility and uniform balloon inflation. To ensure this, the catheter was filled with normal saline and observed for some time prior to cannulation. And also, they are less expensive than the antegrade cerebral perfusion cannulae. Transcranial oximetry was used to monitor cerebral oxygen consumption. DHCA with SACP lasted for 46 min. Total bypass time was 281 min and myocardial ischemic time was 194 min. The patient was discharged on seventh postoperative day with no evident sequelae.

We describe a technique of SACP in which the silicone Foley's catheter seems atraumatic, safe & economical option for cerebral protection during aortic arch surgeries.



Title of Poster: A Perfusionist beyond Cardio-Pulmonary Assistance:
Hyperthermic Intra peritoneal Chemotherapy (HIPEC)

Speaker: NAVNEET DEVENRAJ
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King George's Medical University, Lucknow, Uttar Pradesh, INDIA.

About Author: M.Sc. PERFUSION TECHNOLOGY, ANAND, GUJARAT.

Objective: Combination of complete cytoreductive surgery and intraoperative Hyperthermic Intra Peritoneal chemotherapy (HIPEC) administration provides chance for long-term survival in patients with peritoneal malignancy. Objective of this study with HIPEC is to assess feasibility, tolerability, safety, adverse effects and overall survival rate in these patients.

Methods: From September 2015 till November 2016, eleven patients with disseminated peritoneal malignancy were enrolled for HIPEC treatment. Seven patients had GI and four had ovarian malignancies. We used cardioplegia delivery device system with heat exchanger and a reservoir. We used a single roller pump head, an external heating device and temperature monitor. After completion of cytoreductive surgery, two 1/4 inch tubes connected to y-connector were put in peritoneal cavity, one in lower abdomen to push in fluid and one in upper abdomen to collect circulated fluid. A temperature probe was also put in peritoneal cavity. Crystalloid fluid @ 1.5L/m² was mixed with cytotoxic drugs and circulated at 1litre/min for 90 minutes intraperitoneally. Intra-peritoneal temperature was maintained between 41 to 43 °C.

Results: Patients tolerated the procedure well. All patients maintained good urine output. One patient developed subileus. Follow up patients had good quality of life (Karnofsky scale) with reduced systemic toxicity. 10 patients are still alive.

Conclusion: HIPEC is technically feasible and safe. The synergistic effect of heat and cytotoxic drugs in peritoneal cavity as adjuvant to cytoreductive surgery for disseminated peritoneal malignancy leads to improvement in quality of life and prolongation of survival.



Title of Paper: GUIDELINES FOR HYPER-THERMIC INTRA-PERITONEAL CHEMOTHERAPY.

Speaker: RAHUL SIMON
rahulsimon07@gmail.com

RAJAGIRI HOSPITAL, COCHIN, KERALA

About Author: M.Sc CARDIAC PERFUSION FROM AIMS, COCHIN, KERALA

INTRODUCTION

Hyperthermic Intraperitoneal Chemotherapy (HIPEC) is the process of heating chemotherapy drugs and delivering them intra-peritoneally. HIPEC is based on the principle that the absorption rate of chemotherapeutic agents is enhanced when delivered at higher temperatures. CPB machine can be a cost effective substitute for a dedicated HIPEC delivery system. The following report demonstrates an adoptable guideline based economical alternative to HIPEC by utilizing the CPB machine for intraperitoneal chemotherapy.

METHODS

Laparoscopic cyto-reduction surgery was performed for a case of pancreatic cancer with peritoneal metastasis. Two outflow (Left and right iliac) and one inflow cannulae (right hypochondriac) were inserted to initiate HIPEC. Using a customized cost effective circuit, abdominal cavity was filled with 1.5 litre isotonic peritoneal dialysis solution. Flow was initiated utilizing the CPB machine with gradual increase in the rate and temperature employing a heat exchanger. Once the desired temperature and flow rate (1000 ml/minute and 42-43°C in this case) were achieved, chemotherapeutic agent (Gemcitabine Hydrochloride, 1.4g) was added to the perfusate and intra-peritoneal circulation continued for 90 minutes (30-90 minutes recommended). Peritoneum was drained at the end of the procedure.

DISCUSSION

HIPEC utilizing CPB can be delivered by either an open or a closed technique. The technique has all the advantages of HIPEC using a dedicated machine but is an economical alternative.

CONCLUSIONS

HIPEC delivered using a CPB machine is an effective and economically viable modality for intraperitoneal chemotherapy. The technique further diversifies the role of perfusionists beyond the walls of cardiac operating rooms.



Title of Poster: Cardiopulmonary bypass technique in Minimally Invasive Cardiac Surgery (MICS)

Speaker: **Ms.Saipreethi.N,**
preethi.mrn@gmail.com

Co-speakers: Ms. Deepa Dinesh Perfusion Students.Mr.Lakshmipathi.T, Dr.Sanjay Theodore, Dr.T.M.Ponnuswamy, Dr.Prabhu.M,
Dept of CTVS, Chettinad Health City, Kelambakkam, Chennai

About Author: B.Sc Allied Health science Perfusion final year student

Aim:

To access the cardiopulmonary bypass technique in minimally invasive cardiac surgeries.

Background:

Minimally invasive cardiac surgery is defined as a less invasive method using modified surgical techniques often through smaller surgical incisions for the correction of cardiac defects. Such interventions have been shown to improve patient outcome, resulting faster recovery.

The conduct of Cardiopulmonary Bypass during MICS will vary from the standard method of perfusion in a number of ways. Smaller incisions will require alternative methods of cannulation as well as the use of assisted venous return. These techniques will alter the conduct of extracorporeal circulation and methods of monitoring the circuit and patient during MICS.

Surgical Techniques:

Approach: Right thoracotomy/Upper mini sternotomy

Cannulation: peripheral/central

Venous return: gravity/vacuum assist

Cardioplegia: aortic root/direct

Conclusion:

Additional modifications may be necessary for individual patients who present with anatomical or physiological abnormality, that cannot be managed using these techniques and will require a perioperative modifications.



Title of Poster: CONVERTING BUBBLE DETECTOR INTO LEVEL SENSOR

Speaker: **Mr.Sridhar.S**
aiimssri_perfusionist@yahoo.com

Co-Speakers: Avinash M, Anand G, Kiran L, Sunil S, Tanaji K , Dr.AnandVagarali,
Dr.MohanGan, Dr.Richard Saldana.

KLE's Dr Prabhakar Kore Hospital &MRC , Belagavi, INDIA

About Author: MSc(perfusion tech), final year @ KLE university, Belagavi.

OBJECTIVE: The motto of perfusionist is to provide accident free CPB. The Heart lung machine is having some devices, which are helpful to the perfusionist, to prevent accidents on CPB. One of them is venous reservoir "level detector", which alerts and stops the arterial pump head at pre- defined levels based on the disposable "level sticker" attached at minimal level of venous reservoir. One more device is "bubble detector", which is attached on the arterial line to identify the accidental gas bubble(s) and stops the arterial pump head before it goes the patient's circulation. Now, when you don't have level detector, I applied simple technique to convert the "bubble detector" into "level sensor" to prevent accident (emptying of venous reservoir).

Material and methods: "zero" cost conversion. There is no extra material required to make this sophisticated conversion when you have " bubble detector". No requirement of disposables for bubble detector.

Conclusion: All centers may not have level detector or level sticker, which are disposable and cost effective. Most of the heart lung machine sellers provide bubble detector along with heart lung machine. In India, Very rare numbers of perfusionists are using this bubble detector in their CPB practice.

After watching my poster presentation of "conversion" technique, you will bring back "bubble detector" into field for "level sensor" purpose, which is in the MISCELLANEOUS PARTS BOX'.



Title of Poster: STRATEGY FOR SUCCESSFUL MANAGEMENT OF CARDIOPULMONARY BYPASS IN PREGNANCY

Speaker: **KUPPUSAMY SUJITHRA,**
sujithra1perfusion@gmail.com

Co-Speakers: THANKACHEN ROY, SHUKLA VINAYAK, SHANKAR.M,
SAJAHANANDAN RAJ, SRINIVASAN DHARINI
CHRISTIAN MEDICAL COLLEGE & HOSPITAL, VELLORE

About Author: Dip in Perfusion in 93' and BSC perfusion in CMC and now working as Senior Perfusionist

INTRODUCTION:

The physiology of women is markedly altered during pregnancy. Subclinical cardiac diseases may become symptomatic and existing cardiac diseases may worsen due to the hemodynamic changes of pregnancy. This may warrant a surgery during pregnancy. The conduct of surgery and cardiopulmonary bypass may be deleterious for both the mother and the fetus

OBJECTIVE:

Herewith we describe the strategies adopted in a patient who presented for Mitral valve replacement in the 26TH week of gestation.

DISCUSSION:

Maternal morbidity and mortality seem more related to the underlying cardiac disease and is not affected by cardiopulmonary bypass.

Fetal mortality remains elevated as a consequence of CPB factors that stimulate uterine activity and contractions and reduce placental perfusion. Sub optimal gas exchange at the placental interface seems to be the main substrate for fetal bradycardia and distress.

METHODOLOGY:

Appropriate positioning of the patient, normothermic bypass, warm blood cardioplegia, use of haemofilter, avoidance of harmful drugs, maintenance of higher perfusion pressures and reducing the ischemic time were strategies adopted. The details will be discussed in the poster.

CONCLUSION:

Appropriate planning and execution of cardio pulmonary bypass will reduce the mortality, morbidity and fetal wastage associated with cardiac surgery during pregnancy.



Title of Poster: LIMITATIONS AND PITFALLS OF HEMOFILTRATION DURING ADULT CARDIAC SURGERY

Speaker: **MsSujitra.S,**
sujitrashiva58505@gmail.com

Co-Speakers: Ms.B.Vedapriya, Perfusion student, Mr.T.Lakshmipathi, Dr.Sanjay Theodore, Prof.Dr.Ponnuswamy, Dr.Prabhu, Dr.Shiva Kumar Chettinad health city, Kelambakkam, Chennai.

About Author: B.Sc Allied Health Sciences perfusion final year student

AIM:

To assess the effect of hemofiltration during cardiopulmonary bypass in the adult patients undergoing cardiac surgery.

METHOD:

This study includes 60 patients who are classified into 2 groups: Group A with hemofilter group (n=30) Group B without hemofilter group (n=30). Variables include: haematocrit levels, lactate, mixed venous oxygen saturation, amount of fluid removed during hemofiltration and urine output. This criteria includes patients with normal LV function and patients undergoing CPB and excludes patients with renal failure, paediatric patients and emergency CPBs.

RESULT:

This study exhibits the reduced demand for Blood transfusion, mixed venous oxygen saturation lesser in Group A and haematocrit levels, lactate levels are higher in Group A.

CONCLUSION:

Hemofiltration during cardiopulmonary bypass leads to hemoconcentration, elevated lactate levels. There are some indications for hemofiltration which should be limited for patients with impaired renal function, positive fluid balance, and reduced response to diuretics or prolonged bypass cases.



Title of Poster: ADVANCED LUNG PERFUSION- EX VIVO LUNG PERFUSION

Speaker: Sunil Kumar,
skkhokhar870@gmail.com

Co-Speakers: Rajarajan Ganesan, Naveen Saini, Harkant Singh, Kamal Kajal, Ashim Das, Goverdhan D Puri. Post graduate institute of medical education and research (PGIMER), Chandigarh 160012

About Author: Working on EVLP project with Dr. Rajarajan Ganesan (SR cardiac anesthesia).

INTRODUCTION:

Perfusion and ventilation of the donor lungs outside the body after harvesting is known as Ex Vivo Lung Perfusion (EVLP). It provides an opportunity to reassess retrieved donor lung function, prolong the preservation time and improve the lung quality. EVLP keeps the lungs metabolically active, dehydrates the edematous lung tissue by the high oncotic pressure in the perfusate and removes harmful and toxic waste products.

AIM:

As part of an ongoing trial we aimed to perform EVLP on harvested donor lungs and maintain its physical and gas exchange properties.

MATERIAL AND METHOD:

EVLP circuits were setup with components of the heart-lung machine available off the shelf. The lungs were harvested after obtaining consent from the donor's relatives and shifted to the site of EVLP in cold solution. A protocol was developed according to the available evidence to warm the lungs, ventilate and perfuse in a gradual manner. Lung weight, compliance, gas analysis and biopsies were taken at the end of every hour.

RESULTS

The lung compliance and oxygen partial pressure increased throughout the procedure with an average increase of 20% and 60% respectively at the end of 4 hours. The lung weights were maintained in one pair of lungs while it increased by 5% and decreased by 4% in the other two pairs respectively indicating variable removal of excess fluid. Preliminary biopsy reports indicate satisfactory lung structure.

CONCLUSION

The physical and gas exchange function of the lungs in our study improved making EVLP a practical solution to increase the donor lung availability



Title Of Poster: Successful Outcome of Left Heart Support for JATENE Procedure-A case report

Speaker: SYAMBABU NAMABATHULA M.Sc

Co-Speakers: DR.BENEDICT RAJ MS, M.Ch. DR.SRINADH REDDY MD, DM. DR.P SRINIVASA RAO MD, ANASTHESIA.DR.V.VISWANATHDA, DNB.

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About Author: Perfusionist at DR.RAMESH GROUP HOSPITALS, VIJAYAWADA AND GUNTUR.

Abstract:

Modified Circuit was assembled for the case anticipating the need of left heart support. It is useful in all complex cases and LV dysfunction cases. We report a case report of a 30 days old female baby with Severe LV dysfunction, who underwent successful left heart support.

Materials and Methods:

Switched over to LHS on roller pump through modified circuit. LA cannulated with 12fr RMI cannula. Plan was to continue on roller pump for few hours. Patient shifted to ICU with a flow rate of 0.52/min/m² and maintaining ACT between 480-550 seconds. Patient was supported on roller pump for 24 hours. During the entire 24 hrs of pump run, there was no significant reduction in blood counts and pump related issues. After the 24hrs of support, Patient weaned off successfully with stable hemodynamics.

Conclusion:

ECMO is the choice of support for ASO patients who fail to come off CPB. We preferred LHS instead of ECMO as it is more cost effective. In LHS, Oxygenator failure or life of oxygenator is not a limitation. The patient for LHS should have good RV and pulmonary functions. We consider LHS as one of the best cost effective and efficient choice for supporting severe LV dysfunction patients.



Title of Poster: HYPERTHERMIC ISOLATED LIMB PERFUSION - A CASE REPORT

Speaker: Mrs.Thilagavathy,
filaka.raj84@gmail.com

Co-Speakers: Mr.Rajkumar,Ms.Blessy, Dr.PrashantVaijyanath, Dr. Gunaseelan,
Dr.Firozrajan, Dr.Smitha, Dr.Kappian
Kovai medical center and hospital, Coimbatore.

About Author: Experienced in conducting CPB for Aortic aneurysm, heart&lung transplant, MICS(Robotic), HILP & ECMO

Abstract

Hyperthermic isolated limb perfusion (HILP) is a novel method of targeted regional chemotherapy to treat extensive sarcomas of the extremities. This is done by exposing the major blood vessels of an extremity, isolating it temporarily from the systemic circulation and perfusing the extremity via a heart-lung machine with very high doses of chemotherapeutic drugs under high temperature to obtain high tissue concentrations of the drug with minimal systemic exposure and hence we can reduce systemic toxicity. Here we report a case with malignant melanoma of foot with in-transit lesions that underwent HILP treated with melphalan combined with mild hyperthermia. We have discussed about the technical consideration, limb perfusion circuit, management of ILP, leakage monitoring and the termination of ILP. This therapy can expand the armamentarium of Clinical perfusionist and forms a vital tool-set in multidisciplinary oncology center.



Title of Poster: IABP COMPLICATION- A NIGHTMARE

Speaker: VEDASREE.S
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About Author: COMPLETED GRADUATION IN SRMC, PORUR, CHENNAI. WORKING IN MANIPAL HOSPITAL FOR THE PAST 3YRS

ABSTRACT

Intra-aortic balloon therapy is simple and frequently used mechanical circulatory support methods. Here we report a case where we had to use re-used balloon considering the financial constraints of the patients. We noticed IAB gas leak and decided to change Intra aortic balloon. While doing, we faced a challenge to remove the balloon ending up in rupturing the femoral artery and trapping of IAB catheter in the vessel. The patient had to undergo emergency laparotomy to remove the balloon.

Fast and gentle solution of the problem is necessary to prevent further morbidity or mortality related to a retained balloon catheter in these delicate patients.

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BASIC CALCULATIONS FOR STUDENTS IN PERFUSION PRACTICE



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CALCULATIONS

- For Given weight Blood Volume is calculated by

Blood Volume = Body weight (kg) X Volume factor = _____ ml

Blood volume factor according to weight

Weight range	Volume factor
0-10	85
10-20	80
20-30	75
30-40	70
40>	60

- Circulating Volume is calculated by

Circulating Volume = Pt's Blood Volume (BV) + Prime Volume (PV) = _____ ml

- Circulating Hematocrit (Hct) can be calculated by

$$C \text{ Hct} = \frac{BV \times \text{Hct}}{BV + PV}$$

C Hct = Circulating Hematocrit

BV = Blood volume

PV = Priming Volume

Hct = Patient's Hematocrit

Hct of 20 - 25% on CPB is targeted on CPB for adults and 30 % for pediatric surgeries

- The volume of RBC's necessary for a given target Hct on CPB may be calculated using the following formula

$$\text{Breq} = \frac{BV - [\text{Req Hct} (BV + PV)]}{\text{Hct}}$$

PV = Priming volume

B req = Blood required

BV = Patients Blood Volume

Hct = patient's Hematocrit

In pediatric patients fresh whole blood is preferred. In all Blood primes the pH & electrolytes are checked and corrected.



□ **Plasma volume calculation/ oncotic pressure**

The amount of plasma to be given or to be added to the priming fluid is calculated according to the following equation.

$$\frac{BV (100 - Hct)}{100}$$

BV = Blood Volume

Hct = Hct of the patient

□ **Circulating oncotic pressure**

$$Cocp = \frac{Plvol \times Nocp}{Plvol + PV}$$

Cocp = circulating oncotic pressure
Plvol = plasma volume
PV = Priming volume

□ **Calculation for addition of plasma**

If the Cocp is <15 addition of plasma is recommended

$$PLadd = \frac{Plvol - [Req\ Ocp * (Plvol + PV)]}{Nocp}$$

PLadd = Plasma to be added

Plvol = Plasma volume

Req Ocp = Required oncotic pressure

PV = Priming volume

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❑ **ORGAN DISTRIBUTION OF CARDIAC OUTPUT**

ORGANS	Organ relative to Body Weight	Blood Flow (ml/min)	Organ flow relative to CO	O2 Consumption ml/min
Brain	2.0%	775	15	46
Heart	0.43	175	3.3	23
Kidney	0.43	1100	23	18
GI-Liver	2.1	1400	29	66
Lung	1.5	175	3.5	5
Muscle	39.7	1000	19	(64)
Rest	55.3	375	9.7	33

❑ **NORMAL HEMODYNAMIC PARAMETERS- ADULT**

PARAMETER	EQUATION NORMAL RANGE
Arterial Blood Pressure (BP) Systolic	(SBP) 90 - 140 mmHg Diastolic (DBP) 60 - 90 mmHg
Mean Arterial Pressure (MAP)	$SBP + (2 \times DBP)/3$ 70 - 105 mmHg
Systolic Pressure Variation (SPV)	$(SP_{max} - SP_{min}) \nabla < 5$ mmHg unlikely to be preload responsive >5mmHg likely to be preload responsive
Pulse Pressure Variation (PPV)	$(PP_{max} - PP_{min}) / [(PP_{max} + PP_{min}) / 2] \times 100 \nabla < 10\%$ unlikely to be preload responsive >13-15% likely to be preload responsive

Stroke Volume Variation (SVV)	$\frac{(SV_{max}-SV_{min})}{[(SV_{max} + SV_{min})/2]} \times 100 \blacktriangledown < 10\%$ unlikely to be preload responsive $> 13-15\%$ likely to be preload responsive $\blacktriangledown = \text{averaged over 10 sec. of BP data updated every 4 beats}$
Right Atrial Pressure (RAP)	2 - 6 mmHg
Right Ventricular Pressure (RVP)	Systolic (RVSP) 15 - 25 mmHg Diastolic (RVDP) 0 - 8 mmHg
Pulmonary Artery Pressure (PAP)	Systolic (PASP) 15 - 25 mmHg Diastolic (PADP) 8 - 15 mmHg
Mean Pulmonary Artery Pressure (MPAP)	$\frac{[PASP + (2 \times PADP)]}{3}$ 10 - 20 mmHg
Pulmonary Artery Wedge Pressure (PAWP)	6 - 12 mmHg
Left Atrial Pressure (LAP)	6 - 12 mmHg
Cardiac Output (CO)	$HR \times SV / 1000$ 4.0 - 8.0 l/min
Cardiac Index (CI)	CO / BSA 2.5 - 4.0 l/min/m ²
Systemic Vascular Resistance Index (SVRI)	$\frac{80 \times MAP - RAP}{CI}$ 1970 - 2390 dynes • sec/cm ⁵ /m ²

Pulmonary Vascular Resistance (PVR)	$80 \times (\text{MPAP} - \text{PAWP}) / \text{CO}$ <250 dynes • sec/cm ⁵
Pulmonary Vascular Resistance Index (PVRI)	$80 \times (\text{MPAP} - \text{PAWP}) / \text{CI}$ 255 - 285 dynes • sec/cm ⁵ /m ²
Stroke Volume (SV)	$\text{CO} / \text{HR} \times 1000$ 60 - 100 ml/beat
Stroke Volume Index (SVI)	$\text{CI} / \text{HR} \times 1000$ 33 - 47 ml/m ² /beat

□ **NORMAL RANGE FOR VARIOUS COMPONENTS OF OXYGEN DYNAMICS**

CATEGORY	NORMAL RANGE
Content (CaO ₂)	16-19 ml O ₂ %
Delivery (DO ₂)	520-720 ml O ₂ /min/m ²
Consumption (VO ₂)	110-160 ml O ₂ /min/m ²
Extraction (ER)	22-32 %
Mixed venous pO ₂	33-53 mmHg
Mixed venous saturation	68-77 %

□ **NORMAL OXYGEN AND FLOW REQUIREMENTS WITH REFERENCE TO WEIGHT**

CATEGORY	Required O ₂ Requirement	Required Flow
Adults	4 ml O ₂ /min/kg	80 ml O ₂ /min/kg
Pediatrics	9 ml O ₂ /min/kg	120-150ml O ₂ /min/kg

□ **MYOCARDIAL OXYGEN CONSUMPTION**

MYOCARDIAL EVENT	OXYGEN DEMAND
Normothermic arrest at 37°C	1ml/100g/min
Hypothermic arrest at 22°C	0.30ml/100g/min
Hypothermic arrest at 10°C	0.14ml/100g/min
Fibrillating heart	6.5ml/100g/min



Welcome to
ISECTCON - 2018, VISAKHAPATNAM



**First Announcement of the 18th Annual Conference of
Indian Society of Extra Corporeal Technology
ISECTCON - 2018, VISAKHAPATNAM
2nd & 3rd February, 2018**



On behalf of the Organizing Committee of the 18th Annual Conference of the Indian Society of Extra-Corporeal Technology, we wish to invite you to the ISECTCON-2018 to be held in VISAKHAPATNAM (Waltair) City of Destiny, during 2nd & 3rd February, 2018.

Visakhapatnam (nicknamed **Vizag**) is the largest city, both in terms of area and population in the Indian state of Andhra Pradesh. It is located on the coast of Bay of Bengal in the north eastern region of the state. It is the Financial Capital of Andhra Pradesh. visakhapatnam is the principal commercial hub of the state, and contributes to its economy in many sectors such as heavy industries, tourism, industrial minerals, fishing, and information technology. Visakhapatnam Port is the fifth busiest port in India in terms of cargohandled. Visakhapatnam is home to the oldest shipyard and the only natural harbour on the east coast of India. Visakhapatnam developed into one of the country's chief ports and became the headquarters of the Eastern Naval Command of the Indian Navy. The city is nestled between the Eastern Ghats mountain range and the Bay of Bengal, and is often known as The Jewel of the East Coast, The City of Destiny and the Goa of the East Coast. Visakhapatnam's beaches (such as Ramakrishna Mission Beach and Rushikonda), parks (such as Kailasagiri and VUDA Park), museums (such as the Kursura Submarine Museum and Visakha Museum), and proximity to areas of natural beauty (such as the Kambalakonda Wildlife Sanctuary, Araku Valley, and Borra Caves).

Once again we welcome you in large numbers to participate in the scientific sessions & make this event a grand success.

Organizing committee ISECTCON-2018

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