ASM Sydney 2011

Preamble

My name is Martin Gill and I am nervously keen about 'blogging' the Australian and New Zealand College of Perfusionists Annual Scientific Meeting.

This year the meeting is being held in Sydney from the 3-5th November.

I am hoping that through the process of blogging this conference I will be not only letting international perfusionists know what the hot issues being discussed are 'down under', but also letting perfusionists around the world know what a damn good meeting this is- and who knows maybe even increase the chance of meeting a few of our international colleagues at next year's meeting.

Okay- a little bit about me. I am from a nursing background in the UK. I came out to Australia in 2002 for 1 year (9 years, 1 wife, 3 children and a sizable mortgage later I'm still here). I did spend a few years nursing in Oz and then made the 'jump to the pump' in 2007. I finished my perfusion training in 2010 and am thoroughly enjoy working at The Heart Centre for Children, Sydney, Australia.

When I'm not behind the pump I enjoy a bit of time out with the family, and if time permits continue the indoctrination of my children into the virtues of Middlesbrough Football Club and old SKA records.

Well only 1 day to go till the meeting. If you are interested in checking out where I will be spending the next few days feel free to visit the conference website….
www.anzcp2011.com <http://www.anzcp2011.com/>
Martin.

The Eve Before…

Just got home from a very long day in theatre- one Truncus Arteriosus, and a very shaky Double Outlet Right Ventricle all done and safely tucked up in PICU.

Now just got to pick the kids up from the dry cleaners, drop my suit off at the baby sitters, get a good nights sleep- then its off to the conference.

Cheers for now
Martin.

Thursday 3rd November 2011

What an enjoyable first day of the conference. Today was a half day with the emphasis on relaxed open forum chats. This consisted of three sessions- paediatric, ECMO and general discussion.

The paediatric session got underway with a fascinating discussion piece, by Neil

Casey from BC kids, relating to the management of ionized magnesium and calcium for neonatal perfusion practice. As I am sure everyone is aware the monitoring of ionized magnesium is an event in itself. It would appear that if one is fortunate enough to be able to monitor this electrolyte then one could find ones self in a very favorable position. I myself am a paediatric Perfusionist so understand the benefit of attention to detail in a prime, but must admit that I still have a long way to go.

The second discussion piece was relating to the use of Near Infrared Spectroscopy in paediatric perfusion. This discussion was led by Dr Skowno from the Heart Centre for Kids, Sydney. Here in Oz we have 4 devices available for sale. It would appear that this technology is becoming increasingly viewed as a valuable tool in the OR, yet it still has a tremendous scope for improvement. Directly related to perfusion this device can be of use for assessing cannulae position, picking up subtle variances in the regional perfusion, an aid to commencing bypass with a clear prime etc etc etc. Unfortunately until a gold standard exists for comparison of the generated number this device may not be viewed as a gold standard of care.

The final talk was by Killian O Shaughnessy also from the heart centre for kids. This discussion was about the possible compromise in safety if a surgeon desires to use an ECMO machine for CPB. We do all have guidelines for the safe practice of CPB and the general consensus would be that the use of an ECMO machine is an unacceptable compromise- even though the reduced surface area is always desirable. Perhaps a purpose built MECC system is the way to go?????

The ECMO discussion started with a talk about the use of ECMO with palliative shunts. Again attention to detail is the key. This is a potentially tricky population to place on ECMO- up to twice full flow may be needed with extreme caution to blood gas management with a patient group who's PVR may dictate where blood flows.

Discussion then led into a case presentation about ECMO for airway surgery and then the presentation of the Better Bladder- a novel device not yet available in Australia but with many potential safety implications for ECMO practice.

The final general discussion session was a fascinating experience- relaxed chat over canapés, champagne and even Halloween treats for interesting points raised. What a hoot. Some very animated discussion re designing the perfect CPB circuit/ pump. As you can imagine everyone's circuit is the best. as I am sure you can also imagine as the alcohol flowed the discussion became more animated….. brilliant.

Well off to the dinner event. Cheers and catch you in the morning.

Martin.

Friday 4th November (session 1)

Today was the beginning of the more formal component of the scientific meeting, with the first session focusing on transfusion morbidity and blood conservation. As I am sure you can imagine much thought provoking information was presented.

The session opened with the keynote speaker, Mr Gavin Murphy from the UK. Gavin is both a consultant cardiac surgeon and avid researcher.

His talk centered around current available literature on blood management and it's ability/ inability to demonstrate whether transfusion is associated with adverse outcome or causes adverse outcomes. He reviewed many perfusion strategies including autologous pre- donation, normovolaemic haemodilution and cell salvage. It would appear that current literature would deem cell salvage as being associated with the least risk.

Whichever intervention is used this strategy must be focused on the patient need. Of particular interest to me is study yet to be finished / published that aims to discover whether NIRS can be used to guide transfusion.

Next up was Prof Isbister from here in Sydney. This was a very thought provoking talk highlighting the difference between what's best for blood supply and what's best for the patient. The Prof remains mystified after many years in the 'blood field' as to why RCT's focuss on safety and not efficacy, an approach which is reversed in other areas of medicine. It would appear clear that the hazards of transfusion are definite, probable, or possible.

Darryl Mcmilan rounded off the session by extolling the virtues of the perfusionist as being a vital cog in the wheel as part of a collaborative approach to a patient management plan for blood management. Point of care tests are viewed by Darryl as vital in blood conservation for a patients transition from CPB to post op care.

Quick break before session 2.

Cheers
Martin

Session 2

Well quick whizz around the trade displays and a cup of tea then back to session 2.

This session focus is on transfusion morbidity and blood conservation.

Gavin (the key note) commenced the session by discussing risk modification for post cardiac surgery lung injury. Current literature is reported to point towards lung injury being an extremely common occurrence post CPB with a direct link to mortality, morbidity and (of interest to those holding the purse strings) cost. Gavin believes that the best way to currently ameliorate this lung injury is to restrict transfusion.

Other methods are (a huge surprise to me) epidural anesthesia. Apparently epidural switches off components of the CNS that assist in the reduction of inflammation.

What does the future hold?

In Gavin's opinion the future is definitely in the hands of pharmacology. It is understood that inflammation reducing agents are the focus of intensive work and that

soon these will be the main stay of pulmonary protection for patients undergoing CPB.

Free papers made up the rest of the session. At this stage I think it is worth saying that perfusionists are amazingly adept at carrying out good quality research with, at times, limited resources. We heard about the link of oxidative stress to blood product exposure- surprisingly no difference was found with the age of the red cells. We then were presented with data pertaining to normovolaemic haemodilution in cardiac surgery- this work speculated that the patients that may be best placed to donate blood are the ones that would probably not need the transfusion.

Next was a review of blood product usage for 10000 CPB patients- 14 % receiving blood products of one type or another. The speaker speculated that safety in perfusion practice, through protocols, is the key to practice in blood products and perfusion in general.

A bit of fun for the last session with an audience participation response system. This threw up a few novel answers. We apparently had an audience predominantly with more than 10 years perfusion experience. 59% believed that current evidence points in one direction for blood transfusion. 13% do not use a cell saver on CPB.

Only half the Perfusionists do provide point of care haemostasis management to patients. 1\3 of the audience do RAP there patients. 42% of the audience have a written protocol for red cell transfusion on CPB. 52% accept 22% as the lowest on CPB Hct.

Well that must be lunch.
Martin.

Session 3

Great lunch- they even sorted out gluten free for the celiacs amongst us (that means I will get through this afternoons sessions without visiting the bathroom every 5 mins).

Session 3 for the day is focussing on collaborative day registries. The first part of this session focused upon making the transmission from measurement to improvement.

The concept was presented that participating in a collaborative data group enables the facilitation of knowledge diffusion. The importance of data collection was echoed by David Marshman, a surgeon from Sydney.

He felt that the collection of data is essential due to the requirement of needing to know where you currently are in order to establish where you want to go. The session wrapped with an informative presentation on the evolution of the International Consortium of Evidence Based Perfusion.

Data collection can often be a quite a dry dish. This session, however, left no doubt about the relevance and importance of its collection and utilization.

Well, the fourth and final session of the day. And what away to finish the day- chaos theory, ethics and evidence based medicine.

This session consisted of a/ prof Ian Kerridge and Tom Gratton Smith. Could there really be an alternative to evidence based medicine. Maybe. It would appear that one can never ignore the clinical situation in front of ones self. A very interesting point of view was raised by Kerridge- the fact that an RCT is required must lead to harm being done. Are RCT 's always required when evidence may exist from cohort studies previously carried out? (CEASER was the example alluded to) hmmmm.

The value of current medical journals was touched upon. A very interesting slide was shown with quotes from editors and past editors of BMJ, NEJM etc all casting doubt on the value of current literature due to the tainting of industry on current studies.

WOW what a session.

Right, tonight's dinner is on Fort Denison – a small island in the middle of Sydney Harbor- its a hard life!!!!!

See you in the morning.
Martin.

Saturday 5th November 2011

Well the evening meal at night on Fort Denison in Sydney Harbor was great. Good food, good drink, guided tours of the island and a great presentation from Operation Open Heart- a charitable organization that carries out heart surgery in developing countries throughout the world.

Now back to business. Session 1 of day 2.

Myocardial protection.

This session got underway with Prof Preusse presenting research and development of custodial , HTK. The prof was actually involved in the development of this product and has devoted much of his professional life to myocardial protection. This product is viewed as a 'intracellular' solution based upon its composition. It is delivered as crystalloid only and cold so has very low viscosity.

The solution is usually delivered as a single dose pleag and only regimen with sustained ventricular activity. It seems like a very interesting plegia that can apparently be given to all ages and all hearts.

Perfusionists in the audience that have experience with this product all found a period of initial trepidation and then soon become advocates of its use. Seems like it might be worth a look……

Martin.

Session 2

Session 2 of day 2 sees the commencement of the first full free paper session. This began with a very interesting presentation of Melbourne Kids veno venous experience and a lead into the use of the Avalon cannuale.

This cannulae is getting increased acceptance in Australia and is proving to be a very valuable asset.

Other presented studies looked at the design of a bridge clamp within an ECMO circuit and the positive effect this new clamp had on blood rheology.

We also heard about circuits designed for volume exchange in sickle cell patients, venous saturation monitoring and temperature/ reagent mixing effect on ACT plus results.

It certainly appears that extra corporeal support outside of the OR is very much an area of interest to perfusion researchers.

Please forgive me if I am getting a bit brief in my postings. This is not due to the effects of last night, but an increase in my nervous state due to a looming presentation by me after lunch.

Cheers
Martin.

Session 3

This after lunch session commenced with the 2nd full free paper session. Whilst I am sure that the first presentation was very good, I have a rather sever inability to listen to this due to my presentation being next up.

I hope my presentation went down well- my research looked at insensible water loss from an ECMO oxygenator being an unexpected cause of neonatal hypernatraemia.

The rest of the session consisted of a very good presentation from Richard Newland looking at intraoperative and postoperative temperature being independent risk factors for post op renal failure.

Another particularly good presentation related the benefit of simulation as a routine practice. In Australia we are in a fortunate position in that our society have purchased an Orphous simulator that can be sent to any perfusion unit with a desire to utilize this product. I believe there is no doubt about the value of simulation to contemporary perfusion practice. Irrespective of the fidelity one is able to create practice still makes perfect.

The final session of both the day and the conference saw the return of the key note speaker, Gavin Murphy. This time his focus was acute kidney injury post CPB. After an extensive overview of the pathogenesis of this condition we were informed that

there is currently no effective treatment for this worryingly common occurrence.

Very surprisingly some yet unpublished work of Gavins is pointing towards the use of Sildenefil in reducing AKI post CPB. I sincerely hope this is the case, as the impact of this study could be tremendous.

The day finished with an in-depth look at the fundamentals of the NIRS. As I am sure many are aware, this device has the potential to be a great asset to the perfusionist, if it is not already. The speaker was confident that over the next 5-10 years these devices will only get better and better.

The conference was then brought to a close.

Well, gotta go and get the tux on- formal dinner tonight.

Cheers
Martin.

Post Conference

The black tie dinner was a hoot. After an enjoyable and informative 3 days the meeting ended with some good music, plenty of dancing, a few speeches- and some drinking.

Well that's all from me- thanks for listening and I hope some of you can makes it to next years meeting which is being held in an extraordinary location -

Uluru (Ayres Rock).

Book the dates now 1-3 November 2012.

See you there……

Cheers
Martin.