

ASM Uluru 2012 BLOG

Wednesday 31st October 2012 (Pre Blog Entry)

Well, it hardly seems a full year has passed since the last annual gathering of the Australian and New Zealand College of Perfusionists. Yet here I am cruising at approximately 35000 feet on my way to Uluru, the red centre of Australia, for the ANZCP 29th Annual Scientific Meeting. Some of you may remember reading about my exploits as I chronicled last years meeting for Circuit Surfers. Well I shall once again attempt to bring you the essence of this years meeting with one of the most recognisable and distinctly Australian back drops in the world. As I take a look out of the aeroplane window there is a whole lot of red and barren landscape, I am however assured that the resort/ conference centre/ and bloody big rock are all truly spectacular. The Captain has also informed me that the temperature is 34c- not bad for first thing in the morning.

As was the case last year, this meeting will take place over 2 1/2 days. The Thursday consists of a paediatric and ECMO special interest session followed by the 'fireside chat' session - which will hopefully live up to last years session and spark some healthy debate. Friday and Saturday will be the more formal and scientific component of the meeting and will include landmark lectures from 3 keynote speakers- Akif Undar, Steve Sutton and Clare Elwell.

I will attempt to bring you updates following each session and social event as way of a live blog- I hope you enjoy reading about this meeting as I know both the location and strength (or lack of) of the U.S. dollar precludes many of you from attending.

Cheers for now
Martin Gill

Thursday 1st November 2012.

Woke up this morning feeling very refreshed following a great outback evening (this is in stark contrast to my wife who is back in Sydney and apparently woke up rather groggy after being up most of the evening with one or more of my 4 kids). I made my way down to the breakfast hall and had a great breakfast with Steve Sutton and his lovely wife Eve. As i already mentioned Steve is one of our keynote speakers this year. Over breakfast it became clear that Steve has an unrivalled passion for perfusion history and shared many stories with us, and even some phenomenal video footage of an early heart lung machine. I cannot wait to see his presentations over the coming days.

Well it is just about time for the meeting to start. 10 months of hard work as a member of both the scientific committee and the organising committee have gone into to this moment... what could possibly go wrong.....

The delegates have almost all arrived, checked in, registered, got there programs and satchels, and are now making there way to the adjoining conference facility. The first session is the paediatric breakout session. First up, yours truly- i am presenting a case study of a completion of Fontan patient that intraoperativley had an unusually unresponsive low NIRS and low mean arterial blood pressure despite multiple interventions; this was all in the face of good venous sats, low lactate, good urine output, Hct > 30%. My aim is to generate

discussion on the appropriateness of the interventions vs the potential distraction of technology.

The second breakout session is the ECLS breakout session. This session commenced with an informal presentation from Keith Adkiins. This presentation centred around ECMO retrieval with subsequent discussion being dominated by the institutionalised tolerance of fatigue within our profession. A particular example of this is the question of whether it is appropriate to travel massive distances over long time frames and then turn around and bring the patient back- alternatively would it be more appropriate to stabilise the patient, rest and then return. Following this discussion the trials and tribulations of anticoagulation monitoring for ECLS patients was discussed- the conclusion of this discussion (which was hard to disagree with) was that there existed more questions than answers.

The third and final session of the day was the popular `fire side chat`. This session commenced with Tim Wilcox discussing PIRS- the perfusion incident reporting system. This database is now open internationally. The problem of adherence to the submission of data to such databases was highlighted. Possible suggestions to improve submission were a smart phone `App`, improved PR and feedback from the database. It was commonly felt that such a database is vital to the improvement in practice for perfusionists, yet this value can only be maximised with increased submission.

I think it is only fair to declare that the third and final session took place with canapés and drinks- I therefore will stop here before my grammar and spelling deteriorate to a lower level than its already poor baseline.

Cheers
Martin.

Friday 2nd November 2012

Well this is the commencement of the more formal component of our meeting. After a welcome speech by the President of our college we moved into the Perfusion Adequacy session and first speaker Steve Sutton. Having been responsible for bringing Steve out here I was particularly looking forward to this presentation. Steve spoke on the assessment of the adequacy of perfusion and inflammatory mediators. This very informative lecture gave an overview of our current understanding of perfusion adequacy, and the direction Steve felt this field should take. Steve highlighted the importance of the relationship between clinicians and the corporate sector in taking the optimisation and monitoring of perfusion adequacy forward in order to improve patient outcomes.

Second up in session 1 was Clare Elwell. Clare runs the biomedical optics department at University College London. Clare spoke about clinical NIRS measurements of cerebral oxygenation, haemodynamics and metabolism. This was a truly great look at this technology and where it may take us in the future. I believe NIRS is a valuable adjunct to perfusion monitoring and any improvement in the technology, clinical application and clinical interpretation of this data can only be of benefit. Clare's talk was followed by Justin Skowno who gave a clinicians overview of the NIRS technology within the cardiac operating room. The case examples given demonstrated the clear value, and at times early warning that NRS can provide- Justin did, however, point to the importance of realising that immature interpretation of an immature technology could be fraught with difficulty- but this situation

can only improve with time and experience.

Session 2 began with our third key note speaker- the world renowned Akif Undar. Akif gave two talks in this session. The first talk centred on the value of laboratory research preceding clinical application of perfusion technology. Much of this value, according to Akif, was related to the willingness of researchers to look at devices in a more physiological model in comparison to product manufacturers that may not go to this extent. An example of this would be pressure flow curves for CPB cannulae- from manufacturers this data is predominantly derived using water, Akif's published work would show these curves derived from using human blood. I think we are very lucky to have such researchers with the resources to carry out this work as all too often we have people with the desire and curiosity to carry out such work but often not the time and resources. Akif's second presentation looked at the value of pulsatility for CPB and ECMO. Akif believes that this is a very underutilised feature and one that is worthy of consideration for the benefit of the patient. Pulsatility is also a technology that is now crossing over into the centrifugal ECMO sphere.

Between Akif's talks we also heard from transplant and paediatric cardiac surgeon, Yishay Orr. This presentation addressed the imbalance between waiting lists, organ availability and the technology available to bridge this gap. The general feeling is that this area is certainly ready for growth and development over the coming years, as organ availability will not conceivably meet the demand.

After lunch saw the first submitted abstract session. This session consisted of 4 high quality presentations, first we heard a comparative study comparing the EPOC point of care blood gas analyzer and a lab based blood gas analyser- the data demonstrated a fairly close correlation between the two across most parameters. Next up was a look at ECMO circuit failures at a single centre, followed by interesting preliminary findings from an ovine ECMO and oxidative stress study. The session concluded with a very interesting look at the reliability of air bubble detectors on CPB machines in comparison to an EDAC microemboli quantifier. It would appear that no correlation exists between the two and therefore the question should be raised that should microemboli data derived from the CPB machine air bubble detector be entered into a bypass record?

Just about time for the legendary Sounds of Silence dinner.

See you tomorrow.

Martin.

Saturday 3rd November 2012 (alternatively the morning after the night before)

The dinner last night took place outside on the red sand overlooking Uluru, with the accompaniment of a didgeridoo player and astronomer; this was of course in conjunction with great company and great food- what a remarkable evening.

Any residual `grogginess` remaining from last night quickly disappeared about 5 seconds after the commencement of this morning's session.

The first speaker was Steve Sutton- it is rapidly becoming clear to the perfusion community down under that Steve is the custodian of a phenomenal amount of perfusion history- much

of which he honoured us with in this session.

As a perfusionist relatively new to this profession I was both humbled and motivated by the journey Steve took us on from Gibbon to stem cell research. Next up was Thushara Perera presenting preliminary research findings on the potential of NIRS as a monitor of depth of anaesthesia monitoring.

It is probably worth stating that a great deal of the valuable information that commercially available NIRS machines are capable of providing is not currently available from the 'front' of the machine. I am referring to the oxy and deoxy haemoglobin values that are utilised to derive the saturation number available on the front of the machine. It is perhaps incumbent on the end user of these devices to lobby the companies to make this data available.

To conclude the morning session we had the return of Clare Elwell back to the stage. Within this presentation Clare showed us the possibilities of NIRS technology, namely functional brain activation studies. The mapping of the brain with this technology could well be the next frontier for adequacy of perfusion monitoring- I for one find this an extremely exiting proposition. Who among us would not like a more detailed picture of what is happening in deep cerebral structures whilst we are manipulating physiology.

Wow- some great work is being done out there. I think I must applaud the way people manage to carry out research and still keep up with a busy clinical workload. During this session we heard about the discolouration of CPB cannulae due to the leaching of phthalates, the negative effects of phthalates and the relatively easy way manufacturers could solve this issue. We were also presented with an interesting case presentation extolling the virtues of the Transmedics organ care system. Other topics of note that were covered were the impact of MUF techniques on haematological parameters, normothermic extracorporeal perfusion for isolated porcine liver, the value of multicentre benchmarking for quality improvement, the importance of infection control measures during CPB, and the use of aspirin for improvement in oxygenator longevity.

Great morning- now for a spot of lunch.....

Afternoon Session

Lunch was great.... now for some more science.

The first post lunch session began with Dr Dixon from Flinders Medical Centre in Adelaide. Dr Dixon spoke about acute lung injury and acute respiratory distress syndrome. This very common condition affects many patients that the perfusionist may come across. Within this presentation we were treated to a detailed account of the causes of ARDS and the mechanisms involved in the inflammatory response underpinning this. The next talk saw the return of, the now legendary, Steve Sutton to the podium. This time Steve was discussing the brain and bypass from a historical perspective taking us right through to the modern time. When placed within the context of history it is easy to get excited by the advances we have made as a perfusion community- we do still have further to go before we can adequately declare that we are doing no harm.

Following afternoon tea we were welcomed back and got ready for the last of our landmark lectures- Akif Undar presenting on the handling of microemboli in relation to paediatric circuitry. This was a great presentation that left the audience in envy of the research capability of Dr Undars laboratory. Akif's research advocated the use of arterial line filters

(with purge line open) and the employment of a second cardiotomy reservoir (that drains into the primary reservoir) as two methods for significantly reducing gaseous micromemboli to the patient.

The last formal lecture of the day was once again from Dr Dixon. This time her presentation tackled the lung in chronic heart failure. The very complex mechanisms involved in this condition were presented with emphasis on the remodelling that takes place. Dr Dixon went on to acknowledge the potential benefit for work in relation to ECMO, VAD and transplant for this pathology.

The meeting closed with a panel discussion involving all three of our landmark lecturers- Steve Sutton, Clare Elwell and Akif Undar- this was really great as delegates had the opportunity to pose any questions that they may not have got the chance to ask before- and also the panel had the opportunity to question each other- FANTASTIC!

Right- time to put the old black tie on and get ready for the gala dinner. I'll let you know all about it in the morning..... well maybe closer to afternoon.

Cheers
Martin.

Sunday 4th November 2012 (Final Entry)

What a great evening last night was. Everyone looked great; the food was fantastic and the entertainment extremely enjoyable.

Pre dinner drinks were taken accompanied by a slide show of photographs taken over the preceding few days. We then moved into the dinner venue and were entertained by traditional aboriginal dancers. This was followed by speeches and the presentation of scientific awards. This year three of the prize winners were lucky enough to not only receive their awards, but also to be presented with a video by Steve Sutton. Steve had put this disk together in honour of John Gibbon Jr. I have yet to watch my copy of this but I am reliably told that this is mind blowing stuff.

After dinner the audience were treated to the return of the 'Great Debate'. This was something that used to take place at our meeting many years ago and for one reason or another disappeared. Traditionally two teams were picked and they would be tasked with arguing a certain point. The twist to this is that people would have to argue the opposite of what they would likely believe. This year Steve Sutton (from the USA), Neil Casey (from Canada) and Clare Elwell (from the UK) had to argue that Australian and New Zealand perfusion was the best in the world. Local representatives Matt Sheminant, Yishay Orr and Steve Horton were tasked with arguing the opposite. This debate was chaired by Akif Undar with assistance from long time veteran of this event, Terry Letchford. It was hilarious- to see Neil, Steve and Clare come out on stage covered in Australian flags, toy Koala bears and wearing flip flops/ thongs was quite a sight.

Once the laughter had subsided and people had chance to dry their eyes much conversation (and one or two drinks) were had. Eventually the bar closed and the party drew to a close. One or two keen soles managed to get up at 4 am to go and see the sun rise over Uluru / Ayres rock- I would love to be able to tell you that I was one of those, but alas that would be

a falsehood.

I hope that my blogged experiences have in some small way given those of you not fortunate enough to attend our meeting a little flavour of what we get up to. I sincerely hope that we get to see some of you next year in Melbourne for the 30th Annual Scientific Meeting of the Australian and New Zealand College of Perfusionists.

Thanks for reading.

Martin Gill