scottish intensive care society

annual report
2006

editorial

Welcome to the 2006 annual report of the Scottish Intensive Care Society. This is my first report as editor and I must start by thanking my predecessor, Dr Phil Oates for his hard work in producing and adapting the report of the societies' activities for the last few years. Verbal feedback on the new format has been encouraging and any suggestions for future content is most welcome.

The last year has seen the society continue to grow and this is typified by the successful joint scientific meeting held with the Intensive Care Society of Ireland. You can read a detailed account of the meeting inside. If you want two days of continuing professional development linked to an excellent social event you can do no better than coming to next years meeting at Dunblane Hydro on January 25th and 26th 2007.

I hope you find the information inside the report informative. The reports of the various groups are presented. In addition articles can be found from Mr John Forsyth, Chairman of the Scottish Transplant Group updating the society on the current position with organ transplantation in Scotland, and Dr Graham Nimmo and Dr Ben Shippey provide an overview of the use of simulators as an educational resource in critical care.

Additional resources are available on the website: www.scottishintensivecare.org.uk.

Happy reading!

Dr Rory Mackenzie

Editor

Design by Medical Illustration Service, Victoria Infirmary, Glasgow (9955)

president's report

One week after our two day Annual Scientific Meeting in Dunblane I am still basking in the warm glow of the educative and convivial company. If the early reports are true, and I would like to believe that they are, this was one of our most successful if not the most successful meeting that the Society has ever held. The increasing size of the meeting where we enjoyed the company of our Irish colleagues is, I think, indicative of the progress the Society continues to make. A flick through the rest of the Annual Report and a dip into those areas in which you are particularly interested will, I hope, confirm you in this view. Our National Audit and Critical Care Trials Group continue to grow in strength. The Evidence Based Medicine website under Chris Cairns has forged new links with the Journal of the Intensive Care Society and remains a beacon of our activities. All this while Mike Fried has kept our finances on an even keel and John Kinsella as Honorary Secretary has stewarded the increasingly complex mechanics of running our Society. Rory MacKenzie has just taken over as Editor of our Annual Report and I trust you are appreciative of his efforts as we were to Phil Oates, his predecessor.

Louie Plenderleith takes over from me as President and will represent us on an increasingly diverse range of groups with which our Society interacts.

This is my last Annual Report as President and I would just like to heartily thank all those who have put so much effort in over the last two years. There are too many to mention by name but they know who they are, and the fruits of their labours were amply in evidence at our Annual Meeting in Dunblane last week.

James R. Dougall

President

Dr James Dougall

annual scientific meeting

Prof Herbert opens the meeting with an update on restrictive transfusion practices.

Dunblane Hydro January 2006

The meeting was attended by 245 delegates from around the country, and was notably the first joint meeting with members of the Irish Intensive Care Society.

Day one was opened by Dr. J. Kinsella, from Glasgow who warmly welcomed our Irish colleagues.

The first session was by Dr. P. Herbert, from Canada, on behalf of the TRICC group. Updates were delivered on triggers for transfusion. Specifically, triggers for transfusion in patients with ischaemic heart disease were discussed. There is a lack of strong evidence in this group and the discussion was informative. The take home message was to continue a restrictive transfusion practice for intensive care patients but with a caveat. From the Rivers Study, an ARR (absolute risk reduction) of 16% may indicate that during early aggressive resuscitation, for the first 6 hours, aiming for a haematocrit of >30% and/or a haemoglobin of >8g/dl as part of the package to optimise oxygen delivery may confer benefit in treatment of sepsis. Problems of using stored blood and the fact that many trial results were from the period prior to the use leucodepleted blood were alluded to. We await the results of the TRICC paediatric and neonatal trials with interest.

The second speaker, Dr. G. Findlay, from Cardiff, was one of the new breed of resident consultants. Delegates received an informative session on the complexities of treating coagulopathies, in the critically ill. There are numerous guidelines on the use of FFP, supported by little evidence. Most fresh frozen plasma (FFP) is prescribed at 10 – 15ml/kg whilst the best evidence, admittedly from a small trial, indicates that 30ml/kg would have benefit where indicated. We were reminded that sepsis is a pro-coagulant state, even in the presence of deranged standard tests of clotting. Standard tests of coagulation are limited in their usefulness, providing a poor reflection of the concentration of clotting factors present. Use of more dynamic tests for assessment of overall clotting was encouraged, including CAT (calibrated automated thrombogram) which measures the lag time to thrombin generation and the updated TEG (thromboeleastography) known as ROTEM. Patients who received FFP whilst critically ill had no measurable change in their bleeding rates but had a higher incidence of TRALI (transfusion related acute lung injury). Concerns were raised over disease transmission, volume effect and allergy. In the past 4 years the nationwide consumption of FFP has been rising at >5% per annum. This finite, valuable resource must be targeted at those patients who will benefit. Inappropriate use may tip the risk benefit ratio against the patient.

The second session was dedicated to trainees. The committee had a difficult task selecting 8 trainee projects for presentation out of the 40 submitted. This is an impressive increase from previous years.

Firstly Dr. Rhodes presented a paper replicating traumatic brain injury in rats establishing which cell types express MIP-2. Dr. C. Goutcher followed with his work using a new validated score for alcoholic hepatitis (Glasgow Alcoholic Hepatitis Score) as part of a tool for predicting mortaility amongst ICU patients admitted with primary alcoholic liver disease. Dr. S. MacLeod presented work on introducing the PDSA (Plan, Do, Study, Act) cycle into ICU. Aiming to make care more patient centred by increasing team communication and goal achievement. Dr. Burwaiss reviewed current practice in the West of Scotland for the clearance of cervical spine injury in unconscious patients. He suggested the recent Intensive Care Society guidelines would make a sound basis for policy development. Dr. Duffy from Ireland presented work on using the non invasive assessment of central aortic haemodynamics as a surrogate for endothelial function. Mr. MacDonald, a student from Edinburgh, outlined the results of 43 patients who had received activated protein C. It was prescribed in accordance with NICE guidelines and mortality (33.3%) was similar to previous work published. Dr. Bateman demonstrated recovery of anaemia associated with critical illness occurs despite low erythropoietin (EPO) levels and seems to follow the reduction in C-reactive protein. The benefit of giving exogenous EPO to hasten recovery in this group of patients has yet to be proven. Finally Dr. Aldridge reflected on a year's surveillance of ventilator associated pneumonia (VAP). The rates within Edinburgh Royal Infirmary were similar to those

previously reported at 11.2 cases per 1000 ventilated patient days. A protocol for VAP prevention has been instigated with data collection as part of the HELICS system allowing quality control.

Dr. Malcolm Booth was then invited to close the session giving us an overview of a recent SICS pilot scheme. Using HELICS criteria for healthcare associated infections, a 3 month audit was carried out in several centres throughout Scotland, the results reflecting what is happening across the country.

The afternoon was dedicated to research and extreme physiology.

Drs Walsh, Andrews and Binning updated us on the progress of the SIGNET, TRAFFIC and acyclovir studies which are being performed under the auspices of the SICS. Participation in patient recruitment was invited and those with ideas for future projects encouraged to come forward.

The audience were treated to a 2 hour session exploring various physiological extremes from experts in as diverse fields as Space exploration and vetinary medicine.

Dr. Vercuiel has been at base camp on Everest and talked about the practical application of the oxygen dissociation curve in hypoxic environments and its similarity to critical illness. He also demonstrated the relationship between ACE gene polymorphism and oxygen utilisation, giving new insight to how individuals cope with hypoxic injury.

Dr. Alyson Calder is one of Britain's experts in 'space' medicine. She delivered an entertaining and informative talk about the physiological challenge faced by humans in a micro gravity environment. She gave insight into practical aspects of simple interventions such as intubation and CPR, with entertaining visuals to demonstrate. We are now better prepared to deal with the impending rush of space tourists who will be 'off legs'!

Dr. Barrie Higgs astounded us with animal facts, comparing the standard human model to super adapted animals such as Griffons flying at 38,000 feet, fish that turn lactate into alcohol when anoxic and horses with stoke volumes of 1 litre and cardiac outputs greater than 350 L/min.

Dr. Yannis Pitsiladis from the centre of East African running studies (based in Glasgow) exploded the myth that athletic performance is solely due to parentage. His work in Ethiopia and Kenya has highlighted the importance of activity from a young age, diet and attitude. This has led to the dominance of East African medal winners in middle and long distance running. After which we wonder how many of the audiences' children will be running on average 5 miles to school each day, rehydrating with cups of tea?

ICU trainees in Scotland are becoming more organised each year. They held their own mini meeting (Ok, so it was in the bar!) prior to the dinner where plans were finalised for the upcoming Group of Intensive Care Doctors in Training in Scotland (GIcTS) in Edinburgh, as well as making initial plans for the highly successful education course to be held in Stirling in August. All trainees with an interest in ICU are encouraged to sign up to the GIcTS website and get involved - www.GIcTS@yahoo.co.uk or contact any advanced trainee in Scotland.

Day two

Following an excellent night at the annual dinner, delegates who made the effort to attend the morning of day two were handsomely rewarded. It is questionable that anyone actually felt better after their early morning swim/running, but for most a hearty breakfast sufficed.

Dr. Andrew Rhodes, from St. Georges London, gave an overveiw of cardiac output monitors available. From non- invasive thoracic bioimpedence to the more traditional pulmonary artery flotation catheter (PAFC). Arguments have been brought against each, cost being one of them; we were however reminded that an extra £100 – 150 per patient is almost negligible if benefit can be shown. After Connors landmark paper demonstrating increased mortality associated with the use of PAFC a rapid decline in there use was observed. Subsequent meta-analysis by Shah in JAMA and the recent PAC-MAN trial have refuted this. Perhaps there will be a resurgence in use of PAFC. As Osler said many years ago 'Medicine is still an art…it depends what you do with the data generated.'

Dr. Philip Dellinger, from New Jersey, discussed the problems of diagnosing and treating pulmonary embolism (PTE) in ICU. Echocardiography is useful but a 50% obstruction must be present to cause a demonstrable rise in pulmonary artery pressure. D-Dimers are useful if normal to exclude PTE. End tidal CO2 'usually decreases in association with significant PTE, increasing again with thrombolysis and re-perfusion. The old adage that PTE comes from DVT is misleading. 40% of proven PTE's follow negative leg ultrasound scans. Spiral CT angiograms are good but leave a conundrum if negative. To treat proven PTE four days of

Prof Dellinger from Cooper University, New Jersey, USA.

Prof Fisher delivered a thought provoking lecture on end of life care.

Cardiologist Dr D. Newby updates the audience on management of acute coronary syndrome.

Dr Tim Walsh congratulates the Free Paper Presentation winner.

heparin infusion and 48hours of warfarin to achieve an INR of >2.0 was suggested. Thrombolytic therapy and IVC filters were advocated if indicated clinically.

'How I manage' sessions followed from invited speakers. Drs Rhodes - high risk surgical patients, Findlay - oxygenation problems and Newby - acute coronary syndromes.

Elective admissions to ICU may be fast becoming a thing of the past but mortality of these patients remains high at ~11% with an average length of stay (LOS) of 15days in the survivors. Repeatedly studies have demonstrated that protocol driven methods of optimising these patients perioperatively can reduce complication rates and hospital LOS.

Oxygenation difficulty is perhaps the most common problem presenting to intensive care units. ICU patients are not normal and there is no benefit in attempting to chase physiological normal values. Accepting hypercapnia is now normal practice and a PO2 of 7 – 8 kPa by whatever method of ventilation will minimise harm. Dr. Findlay has particular expertise in the use of high frequency oscillatory ventilation and was enthusiastic about the results that can be achieved using this mode.

A cardiology update from Dr. Newby did not disappoint. The evidence for primary angioplasty and stent insertion continues to increase. There are European nations who no longer administer thrombolytics as first line treatment for acute myocardial infarction. The challenge facing intensive care is to diagnose acute coronary syndromes and employ more beta blockers, aspirin, clopidogrel, glycoprotein IIb/IIIa inhibitors, unfractionated heparin and balloon pumps. Also, to commence secondary prevention immediately following an acute coronary syndrome event: aspirin, lipid lowering agents, lifestyle modification and a ACE inhibitor +/- newer aldosterone receptor blocker if any evidence of heart failure.

Lunch was enjoyed by all and a separate seminar from the surviving sepsis campaign informed much of the audience.

The final session started with Dr. Laffer, from Galway, explained the science behind the protective mechanism of hypercapnia in protective lung ventilatory strategies. He showed that in isolated models, hypercapnia leads to less 'leaky' lungs, reduced TNF alpha levels and less free radicals. Hypercapnia inhibits early neutrophil killing capabilities which may lead to a predisposition of VAP but this has yet to be proven and the risk of subsequent later significant lung damage from normal CO2 levels is probably greater than early infection. He also reminded us that there is no evidence for the buffering of permissive hypercapnic acidosis as it leads to a paradoxical intracellular acidosis.

Dr. Malcolm Fisher, from Sydney, always gives an entertaining lecture and Friday was no exception. His work on end of life care is to be admired. He admitted that the success of ICU at saving patients lives has led to increasing challenges of coping with end of life issues. A better informed public, with increasing life expectance means that confronting this problem in ICU will occur more frequently. His work suggests the majority of older people would prefer quality rather than quantity, feeling that being reliant on nursing home care at the end of their lives was not necessarily a successful outcome from an admission to intensive care. He has managed to break the taboo of openly talking about advance care directives, making emergency treatment easier to individualise. His final comments about which doctors he respects gave food for thought...1 = the doctor who will come in the middle of the night to talk to the relatives...2 = the surgeon who puts down the laparoscope and asks for a scapel!

After a final visit to the posters, trade stands and coffee Dr. M. Buttigieg, an SpR from Glasgow, informed us of how he spent our money on his travelling bursary to visit Dr. Findlays unit in Cardiff. There he observed the UK's first consultant resident intensivist system working and gained experience in the use of HFOV. At the Royal Berkshire he saw Dr. Waldmanns ICU follow up clinic. For a relatively cheap intervention: £30,000 per annum, the benefit to the patients appeared worth the effort (and paperwork.)

Finally, Dr Philip Dellinger facilitated audience participation in his slide show of his 10 commandments of ICU. Everything from ensuring a PAFC stays in a vein of some sort to always checking the airway for missing shoes was covered!

The prize for best trainee presentation went to Dr. Rhodes for his work 'Neurones express macrophage inflammatory protein 2 following traumatic brain injury in the rat' and the prize for best poster went to Dr. Hutchinson from Belfast for her work on 'Anonymous incident monitoring in Critical Care'. The AGM brought the meeting to a close.

The continued success of this meeting was apparent to all those who have been involved over the recent past. Hopefully those who attended found it an excellent educational event, as well as a great social event and they will return next year.

Ewan Jack and Catriona MacNeil

scottish critical care trials group

The Scottish Critical Care Trials Group has had an excellent and successful year!

The 2005 annual meeting of the Scottish Critical Care Trials Group (SCCTG) and the Evidence Based Medicine Group meeting was held over 2 days in the Royal Hotel, Bridge of Allan in June and attracted almost 50 delegates from multiple disciplines in critical care and health services research. A rich programme included excellent sessions from Professor Mitchell Levy (Professor of Medicine, Brown Medical School and Medical Director, ICU, Rhode Island Hospital Providence, USA) and Professor Simon Finfer (Senior Staff Specialist in ICU, Royal North Shore Hospital, Sydney, Clinical Associate Professor (Intensive Care) University of Sydney and ANZICS Clinical Trials Group Executive). Professor Levy gave the US perspective on implementing evidence based practice in critical care, with Dr Malcolm Daniel providing the Scottish view. Professor Levy also led a provocative discussion about rationing resource use in critical care. Professor Finfer gave a fascinating account of the first 10 years of activity from the ANZICS Clinical Trials Group and offered advice for the development of the SCCTG. He also discussed the difficulties associated with carrying out large scale clinical trials in ICU, emphasising the challenge of assuring data quality. Other speakers included John Norrie (CHaRT) who reviewed the design and conduct of publicly funded trials and Dr David Swann who provided a comprehensive review of the evidence around central venous catheter related blood stream infection. Dr Tim Walsh and Dr Chris Cairns provided updates on the activities of the SCCTG and the EBM group including a variety of Critically Appraised Topics (CATS) were presented by trainees. A number of ongoing and proposed studies were presented including projects on ICU follow up (PRACTICAL study), use of blood (ABLE study), surveillance of infection (HELICS) and evaluation of a paracetamol and convective cooling intervention following sub-arachnoid haemorrhage.

We were delighted to hear that the Health Services Research Unit (HSRU) in Aberdeen was recently awarded a substantial Strategic Research Development Grant, which includes Critical Care and the SCCTG as a key focus and collaborator. This means that projects in development will be able to be supported from an earlier stage, which is key to writing successful grant applications.

In addition the SIGNET study (Selenium and glutamine in enteral nutrition) received MRC funding. It is running in about 10 Scottish ICUs over 3.5 years. Peter Andrews is the Chief Investigator (CI), with the study run from HSRU Aberdeen. The PRACTICAL study, examining the impact of ICU follow up clinics on parameters including quality of life, will take place in Aberdeen and Dundee (also the Royal Berkshire hospital). This funded study will run for 2 years with Brian Cuthbertson as the CI with support from Janice Rattray (Dundee) and the HSRU. The TRAPPHIC study will examine the impact of prophylactic acyclovir on outcome from critical illness, based on the hypothesis that reactivation of viral infection, specifically HSV, has adverse effects. The study, due to start in summer 2006 was funded by the CSO with Sandy Binning as CI. The study will take place in the Glasgow Western and Victoria Infirmaries with a third unit still to be identified. The outcome is a measure of physical function after critical illness. Furthermore a large epidemiological transfusion study has been funded by the National Blood Service and Scottish National Blood Transfusion Service. This time the focus is on FFP use with the intention of providing data to design RCTs. The study will take place from Sept-Nov 2006 and about 10 Scottish ICUs will take part. Tim Walsh is the CI for the Scottish arm of the study. Finally, SICSAG and SCCTG teamed up (Simon Mackenzie and Tim Walsh) with Pam Warner of Public Health Sciences in Edinburgh University (CI) to design a study to examine whether ISD data could be used to track sepsis incidence and outcomes using an automated algorithm. The study is funded by the CSO and will start in summer 2006. A major spin off from this work may be greater resource and collaboration to use the SICSAG data base in trial design and execution.

With other projects in the pipeline, such as an international age of blood study and an intervention study to treat anaemia during prolonged critical illness (both spin offs from the ATICS study), we can safely say that critical care trials have arrived in Scotland.

We will all need to work hard together to ensure they all succeed!

Tim Walsh

scottish intensive care society audit group report

It is only proper that this report should begin with thanks to Fiona MacKirdy, who left the audit in June having been with it since the beginning, first as Audit Nurse and for the last seven years as Project Director. Whilst the audit has always been a group effort, and draws its ultimate strength from the clinical staff (you!), we are all conscious of the important role Fiona has fulfilled and what we owe her. We wish her and Martin well for the future. We have also said goodbye to Annette Little and Karen Lorenzetti. Few readers may have met them, but their behind the scenes work has been important to report production over the last several years. Restructuring within Greater Glasgow Health Board has resulted in their secondments to SICSAG coming to an end. This all creates an impression of a major change, but there are also important threads of continuity and it is a time of renewal rather than crisis.

We have been working to move the home of the audit from Victoria Infirmary Glasgow to ISD for almost 2 years. Fiona's departure added urgency to this process and we are very grateful to the staff in ISD, particularly Graham Mitchell, Robert Murdoch and Diana Beard who have worked with Fiona and myself to make this move, which was only half complete when Fiona left, a reality.

In October 2005, prior to the Annual Audit meeting, representatives from each hospital had an informal meeting to review the first 10 years of the audit and consider future direction. The continued use of APACHE II for risk adjustment was agreed, and other common themes were the need for sessions to educate staff in WardWatcher data entry and extraction, quicker turnaround of reports, and a return to data validation. We felt that there was need to review processes and attempt to streamline them, as well as separate the 'IT support' role from the clinical audit role. Brian Millar and Critical Care Audit have now taken over the support role, and we are working on a more efficient system for transmitting data to a new central database. The end result of this should be the quicker turnaround we have been striving for. This work is being led by Diana Beard, who has extensive experience in this sort of project management. We will be seeking to appoint a new national coordinator and an IT person in the near future.

Despite this emphasis on our foundations, important pieces of work have been completed. These include the report of the joint pilot project with Health Protection Scotland (HPS) on Healthcare Associated Infection (HAI). Feedback from the units involved was positive, and the work features in HPS's annual report, but it is clear that some further development is required building on the lessons of the pilot. It is likely to be some months before this can be done. The audit also completed a report on HDU beds for a SMASAC working party to advise the Chief Medical Officer on the need for HDU beds, particularly for medical patients. As we do not yet have all the data collated, the Annual Report will be delayed this year, but planning is well advanced for the Audit meeting on Friday 24 November 2006.

Simon Mackenzie, SICS Audit Group Chair

scottish intensive care society education committee report

The Education Group continues to develop and evolve. Stephen Stott has moved on to take up office as Treasurer to the Society and major thanks to him for his sterling work in his time as chair of the education group. He is succeeded by Graham Nimmo and Martin Hughes has been appointed as secretary to the group. A full list of those who are currently on the group is included below. The group have met several times this year to develop a strategy for the coming years with the advent of Foundation and the possibility of 'Common Stem' Acute Training.

Activities

1. Induction and core teaching materials

The group is actively involved in developing teaching materials suitable for doctors coming to intensive care for the first time. These resources may also be useful to nursing, physiotherapy and pharmacy colleagues as well as to undergraduates. The plan is that these will be web-based and include core topics including:

- Initial assessment and management of the acutely ill patient
- Respiratory failure and ventilation
- Monitoring
- Vaso-active drugs and shock
- Sepsis
- Sedation and analgesia
- Neurological emergencies
- Acute renal failure
- End of life care

The concept is that these modules would be worked through prior to local/unit face to face teaching on the same subjects.

2. Web site

Mo Al Haddad is developing an Education Group site through the SICS website. This will serve as a focus for teaching and education. The above materials will be located there and there will be links to a number of other learning and teaching tools including :

- Identifying Sepsis Early materials
- Rapid Sequence Intubation for Assistants course materials

3. ICM Trainees in Scotland

We have discussed how the group might help support trainees at all levels through educational initiatives. We plan to invite the Regional Advisers in ICM, the IBTICM Tutors and local educational supervisors from all Scottish ICUs to a short meeting at the January 2007 Annual Scientific Meeting to discuss this further. The Group of Intensivists Training in Scotland GITS are considering what their requirements are in this regard but a course on Advanced ICM topics may be developed. This could include topics such as clinical decision making, 'difficult' cases and end of life care.

4. The annual trainee run two day meeting was run this year on August 28th and 29th.

Topics included sedation, obstetric patients in ICU, cardiology update, hyperbaric treatment, communication skills. A full report of the meeting will be posted on the website.

SICS Education Group membership

Mo Al-Haddad Glasgow

Chris Cairns Stirling

Sally Crofts Dundee

Charlotte Gilhooley Glasgow

Martin Hughes Glasgow (Secretary)

Marcia McDougall Dunfermline

Carol McMillan Dundee

Mike McMillan Aberdeen (GITS)

Sam Moultrie Livingston

Graham Nimmo Edinburgh (Chair)

Ben Shippey Edinburgh (GITS)

Stephen Stott Aberdeen

scottish transplant group report

The Scottish Transplant Group has continued to meet regularly over the last year in its ongoing attempts to increase the number of organs available for transplantation. This work continues in the face of an ever increasing demand for such organs and our Society has continued to co-operate with UK Transplant and the Scottish Transplant Group in facilitating organ donation. The potential donor audit run by UK Transplant suggests that very few potential donors are missed. While guarding against complacency this remains an encouraging statistic. There has been a further advertising campaign run nationally to encourage discussion of organ donation within families and also to encourage people to join the organ donor register. Within the UK Scotland has the highest proportion of the population on the register. For a number of reasons, most of which are out of our control, Scotland does, however, have a low overall donor rate.

The Scottish Parliament continues to debate issues around consent. The BMA is in favour of presumed consent. A large number of intensivists and the transplant community do not favour this and there is no immediate plan for the Scottish Parliament to change the current opt-in system.

The Scottish Organ Retrieval Team completed its one year pilot in 2005. There is strong central support for the team to continue and hopefully both funding and other logistical difficulties may be overcome in order to achieve this.

Facilitating organ donation is a small yet important part of our work. By engaging in discussions with the Scottish Transplant Group we continue to move forward within a framework that not only benefits donors but is acceptable, helpful and fulfils the wishes of our patients and their relatives.

Collaborative requesting is also being further discussed although I believe that flexibility in this area remains important. We may also yet see an expansion and increase in non-heart beating organ donation. Our aims should be to continue to try and reduce the rate of refusal for organ donation and also to continue to improve the quality of organs donated. Approached in the right spirit this can not only be cost effective but we can take considerable satisfaction from the good outcomes for donor organ recipients and their families.

Dr J Dougall

scottish intensive care society evidence based medicine group report

Since the last report in April 2005 the EBMG has had a productive 16 months. The number of reviews, and critically appraised papers (CATs) produced have continued to increase with over 70 paper reviews published on the groups website (www.sicsebm.org.uk). These are summarized in the list below. The papers reviewed have included both "classic" papers from the past and newly published evidence. The number of submissions to the group for publication in the near future remains healthy.

The feedback from the joint meeting with the SICS CCTG in June of this year has been very positive. The trainee CAT presentations generated good debate as always. There were also excellent presentations from our guest EBM speakers from SIGN.

There have been several new developments for the group this year: By popular demand we have created an EBM discussion forum through a yahoo discussion group. The main aims of the forum are to facilitate discussion / feedback on articles published on the website as well as other wider issues. If you would like to join the forum then please send a request to icu_ebm-subscribe@yahoogroups.co.uk or visit http://uk.groups.yahoo.com/group/icu_ebm/. We particularly hope to circulate comments on CATs from the original paper authors. 2006 has also seen the launch of a partnership between the ICS and the SICS EBMG. The SICS EBMG is now editing the CATs published in JICS. Hopefully some of you will have recognised the change to our format and the increase in CATs from north of the boarder. These CATs are also published on our web site. JICS will be publishing our updates as well as circulating them via the ICS e-letter. The feedback from the ICS membership has been encouraging.

The website continues to perform well with over half a million hits in the last 12 months and healthy rankings when compared with other ICU EBM sites.

The future: In the later half of 2006 there will be another significant web publication run. There are several reviews underway (METs/Outreach, SDD, Hypothermia II, Nutrition, NIV) and the joint EBM / Research meeting will be repeated in June 2007. As always the group welcomes any new submissions. Details of the group and the submission and review/editorial process can be found on the groups web site.

Dr Chris Cairns

Chair, SICS EBMG

Reviews

New Reviews

- Preventing Catheter-related Blood Stream Infection (36 Cats). By David Swann, Andrew Longmate and Chris Cairns.
- Early tracheostomy: A review of the available evidence from a meta-analysis and its composite controlled studies. (6 CATS). By Richard Price, David Swann and Martin Hughes

Updated Reviews

- EBM Reviews. Scottish Intensive Care Society EBM Group. Swann D. Using heat and moisture exchange filters reduces the incidence of ventilator-associated pneumonia. 2004. (Updated 2005, 2006).
- Tidal volume limitation and PEEP in Acute Lung Injury and Acute Respiratory Distress Syndrome. By Dr Brian Cuthbertson

New Critically Appraised Papers (28):

- Kress JP, et al. Daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation. NEJM 2000; 342: 1471-1477. By Tim Geary
- Kress JP, et al. The long term psychological effects of daily sedative interruptions on critically ill patients. AJRCCM 2003; 168: 1457- 1461. By Tim Geary.

- Effect of Glucose-Insulin-Potassium Infusion on Mortality in Patients With Acute ST-Segment Elevation Myocardial Infarction The CREATE-ECLA Randomized Controlled Trial. JAMA. 2005;293:437-446. By Paul McConnell.
- Outcome benefit of intensive insulin therapy in the critically ill: Insulin dose versus glycemic control. Crit Care Med 2003; Vol 31(2): 359-366. By Ryan Moffat.
- M Holzer et al.: Hypothermia for neuroprotection after cardiac arrest: Systematic review and individual patient data meta-analysis, Critical Care Medicine 2005, Vol.33: 414-418. By Anja Beilharz.
- Phua J, et al. Noninvasive ventilation in hypercapnic acute respiratory failure due to chronic abstructive pulmonary disease vs. other conditions: effectiveness and predictors of failure. Int Care Med 2005; 31:533-539. By Alice Murray.
- Derek C Angus, et al. The effect of drotrecogin alfa (activated) on long-term survival after severe sepsis. Crit Care Med 2004;Vol 32; No 11: 2199-2206. By Caroline Hawe.
- Plant PK. Owen JL. Elliott MW. Early use of non-invasive ventilation for acute exacerbations of chronic obstructive pulmonary disease on general respiratory wards: a multicentre randomised controlled trial. Lancet. 2000 355(9219):1931-5. By Ewan Jack.
- Mayer SA, et al. Recombinant Activated Factor VII for Acute Intracerebral Hemorrhage. NEJM 2005: 352(8); 777 – 785. By Ewan Jack.
- Spragg RG, et al, Effect of Recombinant Surfactant Protein C- based Surfactant on the Acute Respiratory Distress Syndrome Engl J Med 2004; 351:884-92. By Basu Bhadrajkumar.
- Harvey S, Harrison DA, Singer M et al. Assessment of the clinical effectiveness of the pulmonary artery catheter; a randomised controlled trial. Lancet 2005; 366: 472- 477. By Brian Cuthbertson.
- Abraham E, et al. Drotrecogin Alfa (Activated) for adults with severe sepsis and a low risk of death. New Engl J Med 2005;353:1332-41. By Paul Harrison and Chris Cairns.
- Merit Study Investigators. Introduction of the medical emergency team (MET) system: a cluster randomised controlled trial. Lancet. 2005. 365: 2091-7. By Brian Cuthbertson.
- Squadrone V, et al. Continuous Positive Airway Pressure for treatment of Postoperative Hypoxaemia: A Randomized Controlled Trial. JAMA Volume 293; Feb 2005 Page 589-595. By Pam Doherty.
- Esteban A, et al. Non-invasive Positive Pressure Ventilation for Respiratory Failure after extubation. New Engl J Med 2004;350:2452-69. By Pam Doherty.
- Effect of an Intensive Glucose Management Protocol on the Mortality of Critically Ill Patients: Mayo Clin Proc. August 2004: 79(8): 992-1000. By Paul McConnell.
- Ferrer M, et al. Noninvasive Ventilation during Persistent Weaning Failure: A Randomized Controlled Trial. Am J Respiratory Crit Care Medicine Vol 168 pp 70-76 2003. By Pam Doherty.
- Busund R, et al. Plasmapheresis in severe sepsis and septic shock: prospective, randomised, controlled trial. Intensive Care Med (2002) 28:1434-1439. By Vaidyanathan Ramanathan.
- Lewis SJ, Egger M, Sylvester PA, Thomas S. Early enteral feeding versus 'nil by mouth' after gastrointestinal surgery: systematic review and meta-analysis of controlled trials. BMJ 2001; 323: 773-776. By Marcia McDougal.
- Marik PE, Zaloga GP. Early enteral nutrition in acutely ill patients: A systematic review. Critical Care Medicine 2001 Vol. 29 No.12. 2264-2270. By Marcia McDougal.
- Van den Berghe G, et al. Intensive Insulin Therapy in The Medical ICU. N Engl J Med 2006;354:449-61. By Chris Cairns
- Pearse et al. Early goal-directed therapy after major surgery reduces complications and duration of hospital stay. A randomised, controlled trial. Critical Care 2005, 9:R687-R693. By David Elliot.
- Verheij J, et al. Effect of fluid loading with saline or colloids on pulmonary permeability, oedema and lung injury score after cardiac and major vascular surgery. Br J Anaesth 2006; 96 (1):21-30. By Rebecca Appelboam.

- Kruger P et al. Statin therapy is associated with fewer deaths in patients with bacteraemia. Intensive Care Med 2006; 32:75-79. By Niraj Niranjan.
- Gershlick AH, Stephens-Lloyd A, Hughes S et al for the REACT Trial Investigators. Rescue angioplasty after failed thrombolytic therapy for acute myocardial infarction. N Engl J Med 2005; 353: 2758-68. By Stephen Harris.
- The National Heart, Lung, and Blood Institute Acute Respiratory Distress Syndrome (ARDS) Clinical Trials Network. Efficacy and Safety of Corticosteroids for Persistent Acute Respiratory Distress Syndrome. NEJM 2006; 354: 1671-1684. By Brian Cuthbertson.
- Martin GS, Moss M, Wheeler A, Mealer M, Morris J, Bernard G: A randomised, controlled trial of furosemide with or without albumin in hypoproteinaemic patients with acute lung injury. Crit Care Med. 2005; 33:1681-7. By David MacNair and Brian Cuthbertson.
- John V. Peter, et al. Effect of non-invasive positive pressure ventilation (NIPPV) on mortality in patients with acute cardiogenic pulmonary oedema: a meta-analysis. Lancet 2006; 367: 1155-63. By Brian Digby.

intensive care and clinical simulation

Simulation has been utilised extensively to teach practical skills and during resuscitation training. A manikin which is apnoeic, pulseless and appears unconscious is fine for cardiac arrest simulation. However, the simulation of an acutely ill patient requires a different approach. The use of a high or medium fidelity simulator and a realistic clinical environment can produce a believable situation for learning. This approach has been developed in anaesthesia training [1]. More recently we and others have used this approach to design courses for training in emergency medicine, acute medicine, paediatrics, obstetrics and clinical decision making [2]. In many of our courses the participants work in multi-professional groups – for example obstetricians, midwives and obstetric anaesthetists.

A number of the courses we are currently running at the Scottish Clinical Simulation Centre are embedded in speciality curricula – A & E specialist registrar training – or are part of a larger teaching course – Hospital at Night team training (Western General Hospital, Edinburgh and North Glasgow) – for example. Details of these and all of the courses running at SCSC can be found on the website www.scsc.scot.nhs.uk

There is some experience of intensive care medicine training in the simulation centre environment [3] but this has yet to be developed to its full potential. We have been involved in developing intensive care based simulation with colleagues from Berlin and Groningen and in conjunction with the European Society for Intensive Care Medicine (ESICM)[4]. There are several areas where clinical simulation could benefit the training of intensive care staff with varying levels of experience and in a multi-professional manner. These include unit induction, acute care training, advanced ICM training (professional issues) and non-technical skills training[5].

A meeting of European simulation teachers and members of the ESICM Education Group was held at Scottish Clinical Simulation Centre, Stirling (SCSC) and co-hosted by SICS Education Group in January 2004. It was agreed that a group be formed to develop simulation training for intensive care staff basing scenarios on the materials in the existing ESICM electronic learning resource PACT (Patient-centred Acute Care Training). Teachers from Berlin and Stirling worked together at the ESICM Congress in Berlin (September 2004), ran simulation in the congress and planned work on the PACT-related clinical simulations. The group was joined by teachers from the Simlab in Groningen to run simulation at the ESICM Congress in Amsterdam in 2005 and the three centres are continuing to work together.

We are committed to developing simulation training which can dovetail with pre-simulation teaching and training and thereby inform and support subsequent clinical teaching at the bedside. The benefit of pre-simulation training is that the scenario based training can be focussed on integration of technical and non technical skills in patient management rather than concentrating on factual knowledge, or part-task training, of clinical skills such as cannulation and defibrillation. This approach should maximise the educational capital of the whole process.

With this philosophy in mind a series of intensive care patient scenarios based on PACT modules have been developed. It is anticipated that candidates would work through a series of PACT modules prior to attending a course at the simulation centre. ESICM are working on ways of making PACT more widely available in the near future. Several of the PACT based scenarios will be run at ESICM in Barcelona this September. If you are interested in registering for a session have a look at www.esicm.org

We are also running an intensive care training day at SCSC prior to the SICS Annual Scientific Meeting on January 23rd 2007 and hope to be joined by our German colleagues. How these developments will fit with future training in intensive care is interesting to speculate. Simulation based training is becoming more widely available and it is appropriate and timely that intensive care education is firmly on the agenda for this development.

1. Gaba DM, Howard SK, Flanagan B et al. Assessment of clinical performance during simulated crises using both technical and behavioural ratings. Anesthesiology 1998: 89; 8-18.
2. Flin R, Maran N. Identifying and teaching non-technical skills for teams in acute medicine. Qual J of Health Care 2004:13 suppl 1; 80-84.
3. Lighthall G, Barr J, Howard SK et al. Use of a fully simulated ICU environment for critical event training for Internal Medicine residents. Crit Care Med 1993: 31 (10); 2437-2443.
4. Nimmo GR, Bosse G, Grapengeter M, Shippey B, Spies C, Schroder T. A new SAINT (Simulation Applied to ICM and Nurse Training) for Europe. Abstract (oral presentation). Society of Europeans for Simulation Applied to Medicine (SESAM) Annual Scientific Meeting Porto 29-30th June 2006.
5. Fletcher G, Flin R, McGeorge R et al. Anaesthetists' non-technical skills: evaluation of a behavioural markers system. Br J Anaesth 2003:90; 580-588.

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organ transplantation in scotland

At the time of writing 722 patients in Scotland are waiting for lifesaving or life enhancing transplant procedures Although the modern management of heart failure has reduced the demand for heart transplantation slightly, the requirement for kidney transplantation and liver transplantation is rising. Kidney transplant has been shown to prolong life as well as improve the quality of that life. For those with liver failure, there is no other alternative to transplantation and the numbers of patients who die whilst on the liver transplant waiting list have risen significantly in the last few years.

Faced with this crisis, a number of individuals in Scotland have been involved with initiatives including education and publicity regarding the organ donation shortage, organs retrieved from non-heartbeating donors, expansion of live donor transplantation (including live donor liver transplantation), splitting a liver to benefit two transplant recipients and re-organisation of the organ retrieval team (Scottish Organ Retrieval Team – SORT).

For a one year pilot, anaesthetic input was provided for the SORT which was streamlined to allow easy organisation of the organ retrieval process with possible increased skills and co-ordination amongst team members. It was felt that this may remove any disincentive to organ donation because of logistical problems within the donor hospital. These problems arose out of the need to manage a dead patient (confirmed by brainstem death tests) in a busy intensive care unit with subsequent organisation of a complex operative procedure involving many hours in theatre. The recent introduction of the European Working Time Directive and the Consultant Contract (along with the imminent arrival of Managing Medical Careers) are unlikely to improve the situation.

In the one year pilot of SORT, 50 donors were managed. In over 90% of cases a consultant surgeon led the theatre team and in all cases a consultant anaesthetist was involved. These individuals offered advice to intensive care unit staff, took over the management of the donor whilst in the intensive care unit and continued this management into the operating theatre whilst the surgical retrieval took place.

Feedback from the pilot has been very positive. A qualitative study was undertaken by National Services Division and the overall outcome was very favourable to the combined working of the professional team. Many comments were made that the team removed the burden of the organ retrieval process from an acute hospital where anaesthetic and critical care resources were already stretched.

National Services Division also commissioned an independent report from Dr Andrew Walker as an economic evaluation of SORT. An excerpt from the report reads as follows.

‘We can say with a high degree of confidence that this initiative can be judged cost effective using the criteria applied to new services by NICE and to new medicines by the Scottish Medicines Consortium. We have tested the robustness of our finding in a range of scenarios and a we have not found any one factor that would overturn this conclusion. We can even mount an argument that our results are pessimistic both in terms of some of the data inputs and the use of the first year of SORT results when it seems plausible it will have greater benefits in subsequent years as attitudes change to transplant medicine.’

Following the success of the pilot, a bid is now being placed before NSD for the continuation of the SORT in its present form to include anaesthetic input. The transplant community is very grateful to senior members of SICS who have given support to the continued running of SORT. It is not the answer to the organ donor crisis in itself but perhaps by removing any disincentive to organ retrieval, it may form part of that answer.

Mr. John Forsythe, Consultant Transplant Surgeon, Chairman Scottish Transplant Group, Royal Infirmary of Edinburgh

reports of regional societies

South East Scotland ITU Group

The meeting format continued to change over the course of the year in line with the previously stated aims of encouraging more trainees and a broader / wider range of specialities to attend. Alistair McKenzie continued to hand over the role of Treasurer to Brian Cook – apologies to those whose cheques are still in the post.

The first meeting was a pro / con debate surrounding the use of Activated Protein C in South East Scotland. Given the personalities involved it was inevitable that there would be a degree of heat added to the arguments – which are still doubt still smouldering somewhere. Both sides produced very lucid, informative and entertaining arguments but the result was a score draw.

The Borders General Hospital hosted an evening dedicated to the interface between Obstetrics and Intensive Care –in the light of the recently published triennial Enquiry into Maternal Deaths. They outlined the recent admissions to their Unit with the Obstetricians also adding their viewpoints on these potentially devastating cases.

The final meeting of the year tackled issues surrounding major incidents – given the events in London in July and the hosting of the G8 conference in Perthshire. Gavin Lavery gave an extremely interesting and thought-provoking talk on his experiences in Northern Ireland. David Cameron then outlined what procedures had been put into place in the Lothians for such an event - a lot of discussion then ensued as to what needed to be done immediately and in the medium term future.

In 2006 we aim to hold all our meetings at the Royal Hospital for Sick Children in Edinburgh. This will probably make it easier for people to attend from across the region and enable those of such a mind to go out for a meal afterwards (a luxury for those used to the near desert conditions surrounding the New Royal Infirmary).

The Scottish Intensive Care Society

The Society is managed by a Council and the office bearers are:

President	Dr Louie Plenderleith	Glasgow
Past president	Dr James Dougall	Glasgow
Secretary	Dr Malcom Booth	Glasgow
Treasurer	Dr Stephen Stott	Livingston

Area Representatives and Co-opted Members

West Area Representatives

Dr Charlotte Gilholly	Royal Infirmary	Glasgow
Dr Malcolm Booth	Royal Infirmary	Glasgow
Dr Rory Mackenzie	Monklands	Lanarkshire

East Area Representatives

Dr Graeme Nimmo	Western General	Edinburgh
Dr Robert Savage		Fife

North Area Reps

Dr Stephen Stott	Aberdeen
Dr Stephen Cole	Dundee
Dr Sandy Hunter	Inverness

Trainee Representatives

Dr Ben Shipley	Edinburgh

Co-opted

Audit Group Chair	Dr Simon Mackenzie
Chair of Scottish Critical Care Trials Group	Dr Tim Walsh
Evidence Based Medicine Group	Dr Chris Cairns
Chair of Education Sub Group	Dr Graham Nimmo
Meetings Convenor	Dr Tim Walsh
SICSAG Project Director	Vacant
Editor of Annual Report	Dr Rory Mackenzie

Future Meetings

SICS Annual Scientific & Research Meeting	25th and 26th January 2007 Hilton Dunblane Hydro Perth Road Dunblane FK15 0HG
SICS Audit Group Annual Meeting	24th November 2006 Stirling Royal Infirmary

The Scottish Intensive Care Society

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www.scottishintensivecare.org.uk

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