Meeting report

26th International Symposium on Intensive Care and Emergency Medicine, 21–24 March 2006, Brussels, Belgium

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A total of 4,956 medical professionals from 84 countries attended the 26th International Symposium on Intensive Care and Emergency Medicine (ISICEM) in Brussels, Belgium. The 4-day conference, which took place from 21 to 24 March 2006, featured 769 presentations in 124 sessions, and covered a vast range of general, clinical, and experimental medicine topics in a variety of formats, from lectures to tutorials to pro–con debates.

Although the majority of attendees traveled to Brussels to learn about advances in their disciplines, the meeting also provided an opportunity to view intensive care from a broader perspective. What needs to be done to improve the quality of care? How can people in different fields, or in different countries, work together? How can we profit from the experiences – and experience – of others? What can we do better? And where is there a need for research?

The international experts who spoke at the 26th ISICEM provided a wealth of information from a variety of perspectives. Some themes and insights from the conference are identified in the following.

We don't know

One striking trend in the presentations was the frequent use of some variation of the phrase 'We don't know' (see Table 1). From the very first morning, in the opening session, conference organizer Jean-Louis Vincent (Brussels, Belgium) set the stage by asking why, over many years, so many studies have shown no impact on outcomes. 'Are we experts in negative studies?', he asked. After naming a variety of commonly used interventions that research has shown should not be used, he asked in mock despair 'Can we sometimes *add* something to our list?'

There are obviously multitudes of things that physicians *do* know about treating patients. But the fact remains that much of what intensivists do is based on intuition rather than on evidence. 'Most recommendations are actually expert opinions … We *think* that this is reasonable', said Vincent. In fact, many current practices and treatments may be harmful, suggested Mervyn Singer (London, UK). 'We assume we're doing the right thing, but are we?', he asked in a talk entitled '*Primum non Nocere*' ('First do no harm').

Consensus versus controversy

Intensivists disagree about the value of many approaches to patient care. Several of these were the focus of pro–con debates at the conference (see Table 2). The meeting demonstrated that reaching consensus on the recommendation of treatments and approaches can also be a difficult task.

Surviving sepsis

In his presentation on the new guidelines of the Surviving Sepsis Campaign (www.survivingsepsis.org) to be published in late 2006, Phillip Dellinger (Camden, NJ, USA) stated that recommendations on three topics – glycemic control, recombinant activated protein C, and steroids – had to undergo multiple attempts at consensus, culminating in obtaining 80% or greater consensus through a secret ballot of 52 voting committee members. Furthermore, there was 'a lot of debate' prior to approval of continuing to recommend beginning antibiotics within the first hour of recognition of severe sepsis, a recommendation felt to be very important but sometimes very difficult to achieve.

Glucose control

Evidence in favor of tight glucose control in surgical patients was presented by Greet van den Berghe (Leuven, Belgium). She also presented research published recently by her group (see Additional file 1) showing that intensive insulin therapy in the medical intensive care unit (ICU) significantly reduced morbidity among all patients, and also lowered mortality when the patients were treated for at least 3 days.

ICU = intensive care unit.

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Table 1

'We don't know': selected statements of uncertainty made by presenters at the 26th ISICEM

Presenter	Topic of talk	Statement
Greet Van den Berghe (Leuven, Belgium)	Tight Glucose Control: Insights into the Mechanisms	With regard to the effect of hyperinsulinemia: 'What's going on in the critically ill? Actually, we know very little about this'
Luciano Gattinoni (Milan, Italy)	ARDS 2006	'After 40 years we still do not know how to set PEEP'
Jan Bakker (Rotterdam, The Netherlands)	Outreach: The Pros and Cons	'When is the ideal moment for the patient to come to the ICU? When does he or she benefit most from admission to the ICU? We don't know'
Eric Milbrandt (Pittsburgh, PA, USA)	The Place of Haloperidol	In the case of hypoactive delirium, 'no one really knows if treating delirium is good for those patients or not'
Jean-Francois Payen (Grenoble, France)	Analgo-Sedation: Current Practices	'Everybody knows something about sedation. Pain is more complicated'
James Jackson (Nashville, TN, USA)	Assessment of Cognitive Dysfunction	'What we see in the ICU we typically refer to as cognitive dysfunction. It may well transition into something permanent, but when patients are in the ICU we really don't know if that's the case or not'
Mervyn Singer (London, UK)	*Primum non Nocere*	'When you resuscitate the patient and put on high-flow oxygen … what harm is that engendering? We don't know'
Marco Ranieri (Turin, Italy)	Do my Patients Sleep?	'I don't know if a patient with septic shock who is under an aggressive sedation protocol has any kind of sleep pattern that could be described. The fact that the patient looks asleep because of sedation does not mean that the patient is asleep'
Bernd Böttiger (Heidelberg, Germany)	CPR: New European Guidelines	'It is unknown whether survival is improved with vasopressors after cardiac arrest'
Dennis Maki (Madison, WI, USA)	Emerging Infectious Diseases: The Next SARS	Bird flu 'has adapted to be able to infect feline species. The question is, "Will it infect humans?" And we don't know the answer to that'
Kenneth Hillman (Liverpool, Australia)	How to Deal with Relatives	'We must be honest about the uncertainty' when discussing ICU survival with families. We must say, 'Look, I think this is what will happen, but we never really know'
David Menon (Cambridge, UK)	The Vegetative State	Chronic prolonged vegetative-state patients can have preserved cortical processing. 'What does this mean in terms of awareness? We don't know'
Derek Angus (Pittsburgh, PA, USA)	Organization and Delivery of Critical Care Services in the US	'What is the value of intensive care? How well does our literature document it? … When we start looking at articles to support this, they are scant'

ARDS, acute respiratory distress syndrome; CPR, cardiopulmonary resuscitation; PEEP, positive end expiratory pressure; SARS, severe acute respiratory syndrome.

Although intensivists disagree over whether glucose levels need to be maintained between 80 and 110 mg/dl in intensive care patients, Dellinger said that the Surviving Sepsis Committee felt that the evidence supports tight glucose control.

The group from Leuven also received one of five Poster Awards for work on the effect of blood glucose control on mitochondria (see Table 3).

Cardiopulmonary resuscitation

The session on the new American and European guidelines for cardiopulmonary resuscitation highlighted yet another topic of controversy. There are two major changes to the guidelines. First, they recommend a single shock instead of three stacked shocks for ventricular fibrillation, followed by immediate resumption of cardiopulmonary resuscitation. The second change is an emphasis on thoracic compressions rather than ventilation, with 30 compressions now being recommended instead of 15, along with two breaths.

The speakers agreed on the importance of compressions, on the fact that ventilation interrupts perfusion, and on the 'abysmal' survival rates (somewhere between 2% and 12%) that still follow out-of-hospital cardiopulmonary resuscitation. With the previous guidelines, said Bernd Böttiger (Heidelberg, Germany), Chairman-Elect of the European Resuscitation Council, less than 50% of the time spent performing cardiopulmonary resuscitation was devoted to compressions, which are necessary to maintain coronary and cerebral perfusion pressure.

The issue that proved controversial at the session was whether ventilation should be provided at all, with speaker Gordon Ewy

Table 2

Topics of pro–con debates at the 26th ISICEM

Surviving Sepsis Campaign Guidelines
Steroids in sepsis
Pressure–volume curves are important in acute respiratory distress syndrome
Pressure control is better than volume control
ARDSnet protocols should dictate ventilator management
Colloids in sepsis
Non-invasive ventilation in postextubation failure
Innate immunity should be enhanced in acute lung injury
Selective decontamination of the digestive tract
Lung recruitment in acute respiratory distress syndrome
Let us pull out the pulmonary artery catheter
The methicillin-resistant *Staphylococcus aureus* patient should be isolated

(Tucson, AZ, USA) proposing a compression-only algorithm to address what he saw as two main problems: rescuer hesitance to perform mouth-to-mouth resuscitation, and the fact that 'two quick breaths is an oxymoron – it can't be done'.

Adopting innovations

Of course, the fact that there is initial disagreement over a treatment does not mean that it will never be adopted. In a talk entitled 'Diffusion of Innovations', Roy Brower (Baltimore, MD, USA) shared a colleague's insight that 'In order to improve care, you first have to get your team to agree on what you want to do, and how you're going to do it, and that's consensus building'. Developing consensus in the ICU environment is invaluable, Brower said. He pointed out that some good ideas take a while to catch on. For example, as early as 1601 there was evidence that lemon juice could prevent scurvy, but the British Navy did not begin ordering citrus fruits for sailors until 1865.

Global challenges

Today, few doctors in North America and Europe would recognize scurvy if they saw it. Thirty years ago, a US Surgeon General boldly (and mistakenly) claimed that infectious disease was a thing of the past. Yet in 2006 serious health threats – including epidemics, terrorism, and natural disasters – are increasingly affecting mankind on a global scale.

Epidemics

According to Dennis Maki (Madison, WI, USA), on an average day almost twice as many people die from infectious diseases as from cancer and heart disease combined, and the list of emerging infectious diseases is growing month by month. Outbreaks of West Nile virus, influenza, and severe acute respiratory syndrome have demonstrated how quickly diseases can spread, as well as the existence of related problems – such as threats to the blood supply – and the importance of infection control measures.

Current concern over the spread of avian influenza (H5N1) has highlighted the importance of preparation. Even so, Jan Bakker (Rotterdam, The Netherlands) emphasized that 'the problem

Table 3

Winners of the 26th ISICEM poster awards

Title	Group	Affiliation	Citation
Protection of mitochondria by intensive insulin therapy in critical illness: blood glucose control or insulin?	I Vanhorebeek, B Ellger, R De Vos, Y Debaveye, S Vander Perre, G Van den Berghe	Catholic University of Leuven, Belgium	*Crit Care* 2006; **10 (Suppl 1):**P241
Influence of intra-abdominal hypertension on renal artery and vein flow in the porcine kidney	J Wauters, P Claus, N Brosens, A Wilmer	UZ Gasthuisberg, Leuven, Belgium	*Crit Care* 2006; **10 (Suppl 1):**P303
Benchmarking procedural competence in paediatric intensive care using cumulative sum analysis: intravenous access, arterial lines and intubation	M McDougall, A Durward, S Tibby, I Murdoch	Guy's and St Thomas NHS Trust, London, UK	*Crit Care* 2006; **10 (Suppl 1):**P392
Rats surviving after high tidal volume ventilation show marked and reversible pulmonary and systemic changes	O Penuelas, N Nin, M De Paula, P Fernandez-Segoviano, J Lorente, A Esteban	Hospital Universitario de Getafe, Madrid, Spain	*Crit Care* 2006; **10 (Suppl 1):**P6
A way to audit compliance with the Surviving Sepsis Campaign bundles	T Cardoso, A Carneiro, E Silva, J Paiva, O Ribeiro, S Fernandes	Hospital Geral de Santo Antonio, Porto, Portugal; Hospital do Desterro, Lisbon, Portugal; Hospital Sao Joao, Porto, Portugal; Faculdade de Medicina, Porto, Portugal	*Crit Care* 2006; **10 (Suppl 1):**P127

that's coming to us is numbers'. Using the computer modeling program Flusurge (http://www.cdc.gov/flu/flusurge.htm) developed by the US Centers for Disease Control and Prevention, Bakker estimated that 15,000 patients would be admitted to the hospitals in The Netherlands (population 16 million) in the fifth week of an 8-week influenza pandemic, with 3,400 of those needing ICU admission and 1,500 requiring mechanical ventilation. The current capacity in The Netherlands, however, is 820 beds with mechanical ventilation, and a total of 1,200 ICU/high dependency unit beds.

Terrorism

Tragically, while intensivists struggle to find ways to treat illnesses and injuries, other equally devoted groups are working to cause them. In a talk on 'Biological Weapons', Dennis Maki pointed out that Soviet research into using smallpox as a biological weapon accelerated with worldwide eradication of the disease. The saran gas attack in Tokyo showed that biological weapons are being used. The New York World Trade Center attacks and the London and Madrid bombings demonstrate that, in the words of Yoram Kluger (Tel Aviv, Israel), explosions and bombs will remain main weapons of terrorists. Kluger presented graphic photographs of injuries sustained by victims of bomb attacks.

Charles Sprung (Jerusalem, Israel) provided advice for preparing a hospital to receive multiple casualties. 'Unfortunately', said Sprung, 'we at Hadassah have become experts in terrorist response'.

Natural disasters

Paul Pepe (Dallas, TX, USA) highlighted the many challenges of dealing with a natural disaster such as Hurricane Katrina, which devastated New Orleans, Louisiana, in August 2005. Medical personnel were overwhelmed by the scale of the problem. How do you rescue – let alone reach – 200,000 people? What rules of triage do you follow? How do you provide medical attention for chronic problems without access to medical records? 'The rules were completely changed', Pepe said.

Preparation

What can intensivists do? 'If you haven't preplanned then you should expect chaos after a disaster occurs', said Christopher Farmer (Rochester, MN, USA). 'During a large-scale disaster, the hospital essentially becomes a critical care unit. Who's in charge and who's directing all of these things? What role do you and I have in this process, and where are our responsibilities?' Farmer cited two new publications offering recommendations for the delivery of critical care services in connection with an epidemic or bioterrorist attack (see Additional file 1). In addition, the Society of Critical Care Medicine has completed a pilot for a new Hospital Mass Casualty Disaster Management Program designed to train noncritical care people to provide basic skills in the event of a disaster, and a textbook is in development.

Figure 1

'I think we need a protocol for applying all our protocols'. Cartoon by Annemarie Glaser.

The importance of disaster medical response is widely acknowledged, said Farmer, but 'basically and functionally we ignore this as critical care professionals … Almost every aspect of a workable and sustainable model for a disaster critical care response remains undeveloped at this time'.

Improving care

Most intensivists are busy enough handling noncrisis situations. In their search for ways to streamline the care of their patients, intensivists are increasingly turning to protocols.

Speaking in a session on 'Good Care', Gordon Rubenfeld (Seattle, WA, USA) stated: 'There is considerable evidence throughout all of medicine that protocol-based care [can improve outcomes]'. 'Sometimes it doesn't even matter what the protocol is', he said, 'Just making people stratify their care and organize their care can improve outcomes on its own'.

Protocols are evidence based, and represent what the literature would have us believe is best practice, said Stanley Nasraway (Boston, MA, USA). One advantage of protocols is that they standardize care, and standardizing care reduces variability, he said. 'If you reduce variability, you can reduce error and complications. … If you reduce error and complications you improve outcomes, and sure enough, frequently you also reduce costs'.

A presentation by Stephan Jakob (Bern, Switzerland) highlighted how one hospital was able to reduce costs and the median length of ICU stay by such measures as restructuring daily routines, changing from an open to a closed ICU model, performing joint rounds with specialists, and instituting protocols.

Not everyone is in favor of protocols, however (Fig. 1). Protocols require significant time and personnel, and adherence tends to dwindle the longer they are in place. 'I like guidelines, but I'm a little concerned when we try to implement them too widely', said Jean-Louis Vincent. 'We should not simplify too much the complexity of our world'.

Working together

Treating critically ill patients is indeed a complex task. Many of the speakers at the meeting acknowledged the importance of working together, with an emphasis on communication and multidisciplinary care.

Communication

Communication is paramount for preventing conflict in the ICU, said Elie Azoulay (Paris, France). Conflicts can occur within the care team, between members of the care team and families, and within families – and often these conflicts result from contradictory or insufficient information. Azoulay highly recommended using family conferences to involve families in decisions about patient care.

Kenneth Hillman (Liverpool, Australia) shared his personal approach to communicating with the families of ICU patients. He suggested explaining to them that sometimes different healthcare workers say things in different ways; that often it will be necessary to try various approaches and treatments ('It may look like uncertainty, but this is the way we practice'); that the situation can change by the hour or by the minute; that families should look at the patient rather than at the monitors; and that families should take care of themselves, because they may be in for a marathon.

Multidisciplinary care

Improving communication is not the only way to improve care in the ICU. Many speakers stressed the importance of a multidisciplinary approach to intensive care. 'We need to work together as a team during rounds to exchange visions about patient management', said Jean-Louis Vincent. 'And when I say "we" it's not just doctors, it's our team'. The involvement of nursing staff in the implementation of protocols is 'paramount', said Bernard De Jonghe (Poissy, France). In a crisis, said Charles Sprung, 'You've got to work as a team, from the emergency department through the ICU to CT and the operating rooms. The surgeons, anesthesiologists, nurses, and administrators have to work together'. Intensive care societies need to collaborate to provide guidance in combating epidemics, said Jan Bakker. And according to Paul Pepe there is a need for multinational cooperation in dealing with global challenges.

The future

Intensive care is a comparatively new discipline, born in response to the polio epidemic of the 1950s. In the intervening years, said Derek Angus (Pittsburgh, PA, USA), intensive care in the United States has become 'massive, variable, and less than ideal'. Angus predicted that the future will be characterized by 'more patients, sicker patients, at a higher cost, with relatively speaking less money, less resources, and fewer people'. Changes will have to be fairly large scale to make a difference, he said, and they will have to involve people outside of the profession. 'The profession has a responsibility to get out there and talk with the public, with politicians, with our colleagues outside of intensive care'.

Will technology become more important than clinical acumen in the future? It was certainly plentiful at the meeting, with 71 exhibitors demonstrating equipment designed to help the intensivist. Jean-Paul Mira (Paris, France), speaking on 'Biology of the Future', identified new tools that may be of use in intensive care, including genomics, proteomics, gene chips, ImmunoPCR (for looking at tiny levels of proteins), and software that allows researchers to analyze how a gene can modify another one. In one of the final presentations of the meeting, held at 5 p.m. on Friday, the audience traveled via the Internet to the neurosurgical ICU of the University of California at Los Angeles, where, through a robot located on the ward, the presenter spoke with staff members on duty and visited a comatose patient in her bed.

Technology alone cannot heal patients, however. (In fact, the robot presentation was delayed by 30 min due to a power failure.) 'You still have to be a good doctor', Mira stressed.

Will good doctors of the future be able to resolve the issues of uncertainty presented in Table 1? Will they be able to improve the lives of intensive care patients more quickly and at lower cost? Will they be able to reach consensus, find solutions to global challenges, improve care, and work together?

We hope so. But in truth, we don't know.

Additional files

The following Additional file for this article is available online:

Additional file 1

A PDF file containing a reading list of a selection of articles referred to at the 26th ISICEM.

See http://ccforum.com/content/supplementary/cc4935-s1.pdf

Competing interests

The author declares that she has no competing interests.

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