

Critical Care Nurse Training

Critical care nursing remains in crisis, with the lack of adequately trained, competent critical care nurses (CCNs) posing daily challenges in the delivery of quality critical care service in the ICUs of both the public and the private sector. The Critical Care Task Team has been meeting at 6-weekly intervals to discuss critical care nursing issues. Feedback regarding the CCN Education Standards proposal, submitted on behalf of the CCNs Forum (National group), has been slow. The Nursing Standards Generating Body (SGB) has undergone a change in leadership, which has also impacted on the process. The first proposal submitted incorporated a two-year programme with a basic Certificate in Critical Care Nursing, and then the option to elect an Adult or a Paediatric Critical Care Nursing programme in the second year, to exit with a comprehensive Diploma in CCN (Adult or Paediatric). The condensed version (after the SGB meeting in November 2002) was sent out for comment in January 2003, and did not resemble the original proposal, reducing the entire programme to a one-year generic CCN programme for both adults and paediatrics. This was not satisfactory, and the Forum utilised the opportunity to re-submit two programmes – one for Adult and one for Paediatric Critical Care Nursing – each a one-year programme – to meet the need for an acceptable standard for a CCN qualification for the nursing of critically ill adults and children.

Upon review the Nursing SGB extended an invitation to the Forum to attend an SGB meeting to explain the need for two separate programmes for adults and children. The facilitator of the Forum, Sr R Gillespie, and a paediatric CCN consultant, Ms M Coetzee, attended the meeting

with the support of the CCSSA. A motivation was presented, and the delegates explained the need for two different programmes. The delegates were requested to re-submit their proposal, clearly differentiating between the two programmes. This was duly done, and the re-worked proposal was submitted in time for the May 2004 meeting for review by the SGB, SANC and SAQA. This proposal entails a common core, as per other Masters diploma courses, for Critical Care Nursing, and then the option to elect either Adult or Paediatric CCN – this qualification obtained through a one-year full-time programme. The candidate then has the option to continue for another year to complete a full Masters programme. Feedback is currently awaited as to whether SAQA, SANC and the SGB have accepted this proposal. The standards are then due to be published in the *Government Gazette* for public scrutiny and comment.

Given the priority and the work involved in the above process, the Clinical Practice Guidelines process has been delayed. Consensus has been achieved regarding the need for generic guidelines. This concept was reiterated at the Workshop held during the Critical Care Congress in August 2003 in Cape Town. Currently the format of the required guidelines is being explored, with examples being evaluated to establish the most appropriate format for South African critical care services. Given that the guidelines aim to promote best practice and enhance the quality of health care delivery, an evidence-based approach is being utilised to guide the process to write these guidelines. Input is therefore being sought from evidence-based practice experts, as well as public health officials, in order to eventually facilitate the implementation of such guidelines in the clinical areas. The members

of the Forum are thanked for the hard work put into these proposals, and the contributions received from around South Africa.

Rencia Gillespie

PLEASE NOTE that the project is a national initiative, supported by the CCSSA. A small team of workers however does the work entirely voluntarily and amidst busy schedules. Persons interested in participating in the process are welcome to contact the Cape Western Branch secretary, Sr Rencia Gillespie, at rsgill@uctgsh1.uct.ac.za, who will facilitate the process for the present time.

Antibiotic therapy in the ICU – report from the 32nd Critical Care Congress

Strategies to reduce the incidence of antibiotic-resistant pathogens in the ICU

At the 32nd Critical Care Congress, recently held in Orlando, Florida, strategies to reduce the frequency of antibiotic-resistant pathogens received considerable attention. Marin H Kollef, MD, of Washington University School of Medicine in Manchester, Missouri, stressed that in every intensive care unit (ICU), the incidence of resistance should be closely monitored. Collecting and reviewing data that indicate what the pathogens are in a unit, and what their antimicrobial susceptibility is, must be the foundation for an ICU's programme to reduce the incidence of infectious complications, and to minimise antibiotic resistance.

Restricting antibiotics is one approach to minimising the incidence of antibiotic resistance, but decreasing the duration of antibiotic courses deserves emphasis as well. Cycling and rotation of antibiotics represent

attempts to minimise resistance against one particular drug. This strategy can restore susceptibility of organisms to that one particular drug.

A preferable approach might be to monitor antibiotic resistance patterns in real time and to change antibiotic use based on these data.

Dr Kollef summarised by emphasising that cycling or rotating antibiotics can be beneficial, but only if such cycling is part of a strategy of monitoring antibiotic resistance and responding wisely to changing patterns of causative organisms and antibiotic susceptibility.

Focusing drug antibiotic delivery on infected tissue

H Shaw Warren, MD, of Massachusetts General Hospital East in Charlestown, Massachusetts, described some fascinating work designed to focus drug delivery to the infected tissues. Dr Warren used amikacin, an aminoglycoside that (unlike gentamicin) had a convenient side-chain for bonding, as a ligand with the chemotactic factor f-met-leu-fe (formyl-methionine-leucine-phenylalanine). This allowed amikacin to be delivered with neutrophils to the areas where the pathogenic bacteria elicited an inflammatory response. Analogues of this factor can aggregate with neutrophils without activating. There are a variety of technical problems that must be solved with this approach, but the principle is intriguing and preliminary results in animal models are promising.

Limiting antibiotic use in the ICU

John Marshall MD, of Toronto General Hospital in Toronto, Ontario, Canada, then focused on limiting the use of antibiotics in the ICU. He likened the strategies of antibiotic cycling and other strategies that take advantage of antibiotic heterogeneity to 'rearranging the deck chairs on the

Titanic'. The problem is not which class of agent is used, it is that there is too much use of all antimicrobial agents. Normal microbial flora resist the propagation of pathogenic organisms; when we give antibiotics and alter the normal flora, we disrupt homeostasis. There are considerable data from both animal and human studies to support this concept.

He summarised several studies that supported relatively short-course therapy for ventilator-associated pneumonia.

Once-daily dosing of aminoglycosides

Edward Timm, PharmD, of Albany Medical Center, Schenectady, New York, reviewed the data supporting once-daily dosing of aminoglycosides in ICU patients. He outlined the rationale for such a once-daily dose strategy by emphasising 3 points:

- This strategy takes advantage of concentration-dependent killing of micro-organisms and allows for maximal antibiotic efficacy.
- This strategy minimises nephrotoxicity and ototoxicity and has an added advantage of decreasing medication errors by using a consistent dose that is not based on the interpretation of aminoglycoside levels.
- Dollar costs are decreased when the costs of mixing and hanging drugs more than once a day and the laboratory charges incurred when getting levels are considered.

Dr Timm suggested that once-daily aminoglycoside therapy is appropriate for many patient populations. However, he indicated that not all patients are candidates for this dosing regimen. Specifically, there are no data supporting this dosing strategy in patients with meningitis, endocarditis, burns, as well as in patients who are pregnant or those who have undergone stem cell transplant.

New approaches to treatment of head trauma and stroke

Despite impressive advances in the field of neurosurgery, intracranial hypertension continues to be a very difficult and even lethal complication. It appears intuitive to attempt to restore normal intracranial pressures (ICPs) by removing the barrier, the rigid skull. Thomas Bleck, MD, of the University of Virginia Medical Center in Charlottesville, Virginia, discussed the origin, evolution, and clinical applicability of this concept.

There are 3 major types of craniectomy: lateral temporal or frontotemporal, bifrontal, and suboccipital (reserved for cerebellar haematoma or swelling).

In a small study, 35 patients (all with abnormal posturing and abnormal pupils) were treated with craniectomy, and a significant decrease in mortality was reported compared with historical controls (60% v. 80% – 90%).

Massive intracranial oedema is another area where craniectomy may be lifesaving. Early craniectomy has significantly reduced infarct volume and neurological outcome in experimental animal cases of stroke. A follow-up study also confirmed the beneficial effects early craniectomy had on neurological outcome.

A very recent study attempted to define the indications and timing for craniectomy. A total of 18 patients with massive cerebral oedema treated with decompressive craniectomy were studied. A preoperative computed tomography (CT) scan showed signs of transtentorial herniation, subarachnoid haemorrhage, and malignant middle cerebral artery infarction, which had a significant association with mortality or with a poor outcome. Patients with focal haematomas had better outcomes.

FNS

Symposium

Ventilation Through The Ages will be held in Randburg on 3 – 6 February 2005. This symposium will be hosted by the Chris Hani Baragwanath ICU. There will be International experts from Australia, Canada, Israel, Hong Kong, UK and USA speaking at this symposium.

For further details contact the congress organisers: Dr LR Mathivha, tel/fax (011) 938-1595 e-mail:

mathivha@medicine.wits.ac.za.

Mr Ken Brown, African

Conferences and Incentives, tel (011) 475-2902, fax (011) 475-0366, kenb@acitravel.co.za

Certificate in Critical Care

Chris Hani Baragwanath ICU and The Critical Care Society of Southern Africa are proud to announce that Dr BW Piketh and

Dr LG Doedens have passed the CMSA Certificate in Critical Care and are now qualified intensivists.

VFEND redefining antifungal success

Pfizer's new broad-spectrum triazole antifungal, Vfend (voriconazole), has submitted the largest database ever compiled for the initial approval of a new agent! With more than 120 000 days of therapy in extensive clinical trials, Vfend has proven efficacy, safety, and tolerability in a broad range of patients and clinical situations.

Available in IV and oral formulations Vfend is effective against *Candida* spp, *Aspergillus* spp. and a range of other moulds. Vfend demonstrates extensive tissue penetration and is better tolerated than amphotericin B at current available treatment regimens.

Vfend is rapidly absorbed after oral administration, with 96%



bioavailability. Maximum serum concentrations are reached within 2 hours and the flexible dosing facilitates individual and specialised treatment. Vfend is indicated for the treatment of adult patients.

Vfend is available in a 200 mg IV infusion and in 50 mg and 200 mg tablets.

Enquiries: Hazel Riddell, Pfizer Laboratories, tel (011) 320-6000. References available on request.