

Hong Kong Association of Critical Care Nurses Limited (HKACCN Ltd)

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President's Message

LEUNG Fung Yee
President
HKACCN

Dear Members,

This year, I take pride in inviting you to celebrate the Crystal Anniversary of HKACCN since its inauguration on 17 April 1998! Over the past years, we have engaged in an exciting journey filled with challenges and opportunities. To embark on our 15th year of establishment, we proudly organized the Annual Scientific Meeting on 10 November 2012, which is the first one fully contributed by critical care nurses in Hong Kong. We brought together 200 ICU nurse delegates from, not only HK, but Macau and Mainland China to share our experiences and knowledge with the highlight in changes and challenges that we are facing in the field. From so many submissions, we selected six papers for oral presentation and ten for poster presentation. The interactive discussion panel was most impressive which kindled the heart of everyone to pursuit advancement in critical care nursing. I sincerely thank all presenters for their valuable contributions

to the scientific content of the Meeting. Moreover, I extend my deep appreciation to the hard work and support of the Organizing Committee to make this event a great success.

Regarding our work in developing the quality and practice of critical care nursing, our Association has an established role in promoting the standard of care for the critically ill, and working collaboratively with other professional bodies towards the improvement of critical care nursing. On 3 and 4 November, we commenced our collaboration with Macau and conducted four IV Access Courses with very good responses. Our future plan is to provide the Elementary Critical Care Nursing Course to Macau next year.



Participants of the IV Access Course are keen to learn about the use of a pressure bag



Annual Science Meeting held on 10 November 2012
All Council Members, Keynote Speaker and
Representatives of 廣東省護理學會危重症監護專業委員會



Skill demonstration in the Macau IV Access Course

On 24 and 26 August, we successfully co-organized with the Hong Kong Infection Control Nurses' Association to conduct the 5th International Infection Control Conference. A designated Critical Care Session was moderated by our Association. We had a good sharing with local and overseas delegates regarding the current infection control issues in ICU.



President, council members and speakers of the 5th Infection Control Conference

On the same day right after the 5th Infection Control Conference, a team of us went to Guangzhou and joined the 廣東省護理學會危重症監護專業委員會成立大會 cum the opening of the ICU specialty training. Ms. MAK Wai Ling, Chairperson of Administrative Committee, shared her experience in conducting simulation training in ICU with nurses in the Mainland.

Our past fruitful year is the result of works by many collaborative hands, heads and hearts. All council members contributed whole-heartedly their time, energy and talents for which we are tremendously grateful. Last but not least, without the active participation and support of all our members, it would not have been such a rewarding year of 2012 for our Association. Let us build on our collective wisdom and experience to constantly improve and promote critical care nursing. On behalf of the Board of Directors, I look forward eagerly to working with you and working for you

again for the coming year. It is a great pleasure to gather ourselves together in order to sharp our future.



A New Ventilator Mode - NAVA

LAU Bonnie
APN, ICU
Prince of Wales Hospital

Mechanical ventilation is commonly used in majority of the patients with respiratory failure in ICU. The aims of mechanical ventilation are to maintain ventilation and reduce work of breathing. To meet this end, sedation is often needed to promote comfort and increase therapeutic compliance. When the patient breathes spontaneously, it should be better that the ventilatory assist is in synchrony to the patient effort to facilitate a successful weaning process (Sinderby, Brander & Beck, 2007). Conventionally, the delivery of fixed pressure assist is applied to the patients as in the pressure support mode but notably it overlooks the variable breathing patterns of the patient and does not always synchronize to the patient effort. Patient-ventilator asynchrony is associated with increased need for sedation, risk of barotraumas or ventilator-induced lung injury as well as prolonged duration of mechanical ventilation. In the recent development, NAVA is a new tool to deliver ventilatory assist in response to the neural drive and hence promote patient-ventilator synchrony (Verbrugghe & Jorens, 2011).

What is NAVA?

NAVA – (Neutrally Adjusted Ventilator Assist) uses diaphragm electrical activity (EAdi), measured via a modified nasogastric tube which has 8 bipolar microelectrodes mounted on the tip of the tube, to control the assistance delivered by the ventilator.

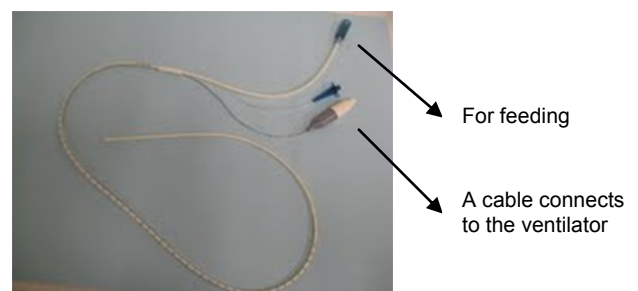


Figure 1: An EAdi catheter

During NAVA, positive pressure is instantaneously delivered in proportion to the measured

amplitude of the EAdi. EAdi provides a reliable estimate of inspiratory timing and respiratory drive, which is the signal from the brain to the diaphragm. Instead of responding to flow, volume or pressure as the conventional ventilatory mode does, the ventilatory assist pressure in NAVA will be given to the patient proportionally in response to the increasing EAdi i.e. throughout the inspiration. The ventilator is cycled off when the EAdi is ended (Sinderby et al., 2007). Hence, NAVA is the ventilator support synchronizing with and proportional to the respiratory drive.

What are the benefits of NAVA?

NAVA provides the patient with a comfortable pattern of breathing and synchronize the ventilator with the patient's respiratory system. Furthermore, the EAdi signal representing the diaphragmatic activity can help the clinician to determine the appropriate sedation depth without prolonging diaphragmatic inactivity (Tehrani, 2008).

Who can use this mode?

Basically, all critically ill patient groups can benefit from the use of NAVA as long as the respiratory center, phrenic nerve, neuromuscular junction, and diaphragm fibers are functional and there is no contraindication or limitation to insertion of an oesophageal probe or a nasogastric tube.

Special care during NAVA

Since the ventilator assist by NAVA depends on the EAdi signal, the EAdi catheter must be placed correctly according to the formula for insertion and



Figure 2: EAdi catheter's positioning box on a ventilator indicates the proper position of an EAdi catheter when the second and third waveforms appear in blue colour.



Figure 3: The EAdi waveform should be displayed on the monitor screen of a ventilator during NAVA.

position of the catheter should be checked regularly on the monitor screen of the ventilator. As a backup, the ventilator embraces a safety mechanism that it can switch to pressure support mode or control mode if the EAdi signal is lost or apnea occurs.

Case Experience

An 80 years old man admitted to ICU for exacerbation of COPD and chest infection. He developed distributive shock and renal failure with hepatic derangement that he required inotropic support, renal replacement therapy and mechanical ventilation. To facilitate ventilation, he was sedated with morphine and midazolam for 36 hours. After the sedation has stopped, he was being weaned from the ventilator with pressure support ventilation. The settings were PS 12, inspiratory cycle off 25%, PEEP 6, and FiO₂ 0.4. His respiratory parameters were 1) RR 20 beats per minute, 2) tidal volume 370 – 450 ml, and 3) SaO₂ 99%. The ABG results showed pH 7.32 – 7.36, PaCO₂ 6.2 – 7.4 kPa, PaO₂ 11 kPa, and HCO₃⁻ 23 – 30 mEq/L.

Three days later, he developed patient-ventilator dyssynchrony, using accessory muscles to breathe and his expiratory flow did not return to zero before the next breath. External PEEP and inspiratory cycle off levels were increased but the situation remained. He was put on NAVA mode after an EAdi catheter was inserted. The settings were 1) NAVA level 2.0, 2) EAdi trigger 0.5, 3) FiO₂ 0.4, and 4) PEEP 4; with a backup mode of 1) PS 12, 2) inspiratory cycle off 40%, 3) flow trigger, 4) PC 20, 5) RR 15, and 6) I:E 1:2. Subsequently, the patient could breathe comfortably with NAVA level weaned to 0.5 progressively, which indicated that the decreasing ventilator assistance for him was tolerated. He was tracheotomized and discharged to ward eventually.

Conclusion

NAVA is a new mode which is accurately controlled by patient's breathing drive and it improves patient ventilatory synchrony. In our unit, NAVA is used when the patients encountered ventilation dyssynchrony in a spontaneous breathing mode. The main important aspects for the ICU nurses to better cope with the new mode are to understand the concept of this ventilator mode and monitoring of the catheter. After all, it is a simple to use ventilator mode.

References

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Grand New Experience in Clinical In-charge Training

MAK Man Tak
RN, ICU
Prince of Wales Hospital

It is my eleventh year working in the intensive care unit as a nurse. I really treasure the opportunity of clinical in-charge training offered by my unit. This has provided me a grand new experience in the nursing career development and has suffused my thoughts with different roles of nurses in clinical management.

During my period of training, I see for myself that the role of a clinical in-charge is very different from that of a case-nurse. A case-nurse is like the gear of a machine while a clinical in-charge is the engineer putting every gear together and making sure that the machine works properly. In fact, the role of a clinical in-charge does not merely involve coordinating the manpower and ensuring a smooth workflow of the whole team, but also empowering every team member with the appropriate resources, both psychologically and technically, in need for difficult clinical situations. In addition, a clinical in-charge also acts as a bridge of communication among the team members from different units and disciplines.

Importantly, psychological support is crucial when junior colleagues are handling clinical procedures in which they are not familiar with, e.g. assist in performing percutaneous tracheostomy. As a clinical in-charge, I will assign my junior colleague with a clear role, explain to her/him about the details and the responsibilities of an ICU nurse in the procedure. Understanding that it is always reassuring to have an experienced nurse to stay with and offer support during the procedure, I will therefore take up this very important role and support my junior colleague during complex procedures. A smooth, efficient workflow counts on good experience, personal learning and the confidence being built in our day-to-day care. I am always willing to share my personal experience and discuss with my teammates any problems they have encountered in their daily practice. I am sure that it is important for our development of clinical

competence.

Sometimes, the clinical in-charge and case nurses may have different points of view at work with their respective roles and responsibilities. This may create certain conflicts in the workplace. However, I believe that we share the same vision: to provide

our patients with quality nursing care. What makes it possible for us to share the same vision when we are holding different perspectives? Mutual respect is the key to success. This is what I have learnt from my experience as a clinical in-charge.

Sharing the feelings and views with my colleagues in difficult situations that we are encountering in the unit is one of the essential elements of gaining mutual respect. For example, as our manpower is scarce during night shift, we are facing pressure for emergency admissions at night. I still remembered that my colleagues and I worked for a newly admitted patient with ruptured AAA (abdominal aortic aneurysm) during my last night duty at 0300. Until the end of my shift at 0700, stabilization of the patient had not been achieved yet. Having many new emergency admissions at night is a harsh time for my colleagues. In assigning newly admitted patients to my colleagues at night, I usually discuss with my colleagues about the current manpower status and workload distribution for the entire unit. This discussion allows them to know that my allocations of work are based on thorough consideration of the clinical situation and a balance of the workload for every colleague. I believe that any suspicion of unfair staff deployment is just like an apple of discord, a small matter may head to a bigger dispute. Mutual respect and understanding are the keys to success in staff communication. During this process, not only a mutual understanding can be achieved but also the opportunity to enhance trust. Furthermore, by inviting ideas in the planning process from colleagues, their sense of belonging and feeling that we are on the same boat navigating towards the same destination can be strengthened.

End-of-life Care in Hong Kong Critical Nursing

CHEN Ka King
RN, ICU
Alice Ho Miu Ling Nethersole Hospital

Intensive care unit (ICU) is usually regarded as the last gate of life-sustaining treatments (LST) in the acute hospital. Patients are transferred to ICU due to critical conditions. Death in ICU is relatively

common, accounting for about 20% mortality rate in HA hospital; the average duration of ICU stay was 6.8 days, but half of the deaths occurred in 2 days, and about one-third of ICU patients died within a day (Hospital Authority, 2010).

The end-of-life care, which refers to care about people approaching death likely within the next 12 months (including those imminently dying ICU patients), has been a public concern for years. Since 2009, the Hong Kong Government has made a little step forward to consult public opinions on the

decision of advance directives (AD) (Food and Health Bureau, 2009). A local study showed that majority of elderly patients with chronic illness had neither heard about advance directives nor discussed this issue with others (Ting & Mok, 2011). Most of the interviewees and their relatives in this study chose to support the withholding or withdrawal of LST in critical conditions, given that they were all provided with knowledge and assured with understanding about those LST. Owing to the advancement of medical technology in sustaining life and uncertainty of the time of sudden deterioration in the ICU patients, it is a real challenge, and sometimes an ethical dilemma, for critical care givers to timely take the initiative to help patients or their relatives making end-of-life decisions on withholding or withdrawing LST in order to facilitate a good death of patient with dignity.

Critical care nurses in the ICU team, given their role in caring for patients to die with dignity and as little suffering as possible, are also responsible to building rapport with patients and their relatives. Like doctors in the team, good rapport can enhance ICU nurses' communication with patients and their families during their end-of-life decision making process (Thelen, 2005; Mok, Wong & Wong, 2010). However, with the power to apply advanced technology to sustain life, critical care nurses often perceived obstacles in providing comfortable end-of-life care, such as the lack of manpower and resources or suitable environment; frequent disturbance from patients' families on different requests; the general, but not individualized, practice of healthcare professionals; and physicians' disagreements about the treatments on patients (Beckstrand & Kirchoff, 2005). Edwards, Pang, Shiu and Chan (2010) conducted a meta-analysis and concluded that the lack of time and institutional, personal, language, cultural and religious factors were also barriers for palliative nurses to offer good end-of-life care. For all those obstacles, Beckstrand and Kirchoff (2005) and Edwards et al. (2010) suggested that sufficient time

for critical care nurses to engage in communication with family members, healthcare givers' awareness and reflection, end-of-life education and training, and willingness and team collaboration could facilitate good end-of-life care in the critical care setting.

Timing on initiating the discussion of end-of-life care with patient families is a challenge. Several overseas medical bodies have published some practice guidelines for decision making on treatment and care of the end-of-life patients, e.g., General Medical Council and British Medical Association and Intensive Care Society (General Medical Council, 2010). With the help of some prognostic systems, including APACHE II, APACHE III (Acute Physiology and Chronic Health Evaluation) and MPM II (Mortality Probability Model), the likelihood of patient survival can be estimated and the right time to discuss the issue of end-of-life care can also be intended (Mendez-Tellez & Dorman, 2005). Although there are still different factors hindering the discussion of end-of-life issues with patients and their families, an interdisciplinary approach, including chaplaincy, should be cultivated for amplifying the nurses' role of end-of-life care in ICU (Tse, 2007).

More local analyses could be conducted in order to facilitate frontline healthcare staff in providing good end-of-life care. A set of practical guidelines on the care of dying patients within days, standardization of caring pathways on dying patients, or "end-of-life care package" are highly expected in coming future. The discussion on end-of-life care with patients or their relatives could be an art for professional critical care givers. With clear practice guidelines, mutually-trust relationship and effective communication among the stakeholders, the last phrase of life of every critically ill patients can be transited peacefully.

References

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UPCOMING PROGRAMS

I) ECG Course for Beginners

Date (6:30pm – 8:30pm)

ECG 2012-4 1, 8, 15, 22, 29 Nov – 6 Dec 2012

Course Fee (12 CNE)

\$1,200 (member)

\$1,800 (non-member)

II) Basic Life Support and Advanced Cardiac Life Support Courses

a) Basic Life Support (BLS) Provider Course

Target Groups:

- Health care providers, such as nurses, doctors, paramedics, and ambulance personnel
- Nursing and medical students
- Other interested personnel

Date (8:30am – 1:00pm)

1 Dec (Sat) 2012

Course Fee (4 CNE; 2 – 7 CME)

\$300 (member)

\$450 (non-member)

b) Basic Life Support Renewal Course

Date (8:30am – 1:00pm)

8 Dec (Sat) 2012

Course Fee (4 CNE; 2 – 7 CME)

\$150 (member)

\$300 (non-member)

c) Advanced Cardiac Life Support (ACLS) Provider Course

Target Groups:

- Health care providers, such as nurses, doctors, paramedics, and ambulance personnel
- Nursing and medical students
- Other interested personnel

Date

(Day 1: 8:30pm – 4:30pm;

Day 2: 8:30pm – 12:30pm)

24 – 25 Nov (Sat/Sun);
28 – 29 Nov (Wed/Thur);
or 29 – 30 Dec (Sat/Sun) 2012

Course Fee (11 CNE; 5 – 10 CME)

\$1,200 (member)

\$1,500 (non-member)



ENQUIRIES for ALL COURSES:

2861 2972 (Mr. Leo LAM)

Email: hkaccn@hotmail.com.hk

For detailed information and application form:

<http://www.medicine.org.hk/hkaccn/activities.htm>

(報名及繳費:填妥報名表格,連同劃線支票,親自遞交或郵寄至HKACCN Ltd.)

CONFERENCE ANNOUNCEMENT

14 - 15 June 2013

Critical Care Nursing Continuing Education 14th Annual Meeting ICE 2013

Place: Brisbane, Australia

Website: <http://www.accn.com.au/content/view/282/323/>

28 Aug - 1 Sept 2013

11th World Federation of Societies of Intensive and Critical Care Medicine Congress: Critical care for All - Providing more for less

Place: Durban, South Africa

Website: <http://www.criticalcare2013.com>

17 - 19 Oct 2013

The 38th Annual ANZICS/ACCCN Intensive Care Annual Scientific Meeting (ASM) 2013

Place: Hobart, Tasmania, Australia

Website: <http://www.intensivecareasm.com.au/2013/>

USEFUL LINKS

International Nurses Day 2013

Theme: Closing the gap: Millennium Development Goals
<http://www.icn.ch/publications/2013-closing-the-gap-millennium-development-goals-8-7-6-5-4-3-2-1/>

Australian Collage of Critical Care Nurses (ACCCN)

<http://www.accn.com.au/>

Australian & New Zealand Intensive Care Society

(ANZICS) <http://www.anzics.com.au/>

British Association of Critical Care Nurses (BACCN)

<http://www.baccn.org.uk/>

Canadian Association of Critical Care Nurses

(CACCN) <http://www.caccn.ca/en/index.html>

European Federation of Critical Care Nurses

(EfCCNa) www.efccna.org

World Federation of Critical Care Nurses (WFCCN)

www.wfccn.org

Chief editor of the Newsletter: Dr Vico Chiang