



Saskatchewan Chapter of the Canadian Association of Critical Care Nurses

President's Message – Angela Kubiak RN, BSN

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**Special Points
of Interest in
this Issue**

**Get involved
with the
Chapter!!!**

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It is now that time of the year that we as the Saskatchewan Chapter hold our Annual General Meeting. This is notice that the AGM will be held on March 24th, 2009 in conjunction with the Annual Spring Conference.

As President of the CACCN Saskatchewan Chapter, I am currently placing a call for nominations for a variety of our vacant board positions. You must be nominated by one active member of the chapter and accept the nomination in writing or verbally at the annual meeting. Nominations are to be made in writing to myself up until the AGM on March 24th, 2009. You can email them to Saskatchewan@caccn.ca.

The Positions available for nomination are as follows:

- Secretary – Facilitates open communication with the executive committee, members and the national office. Keeps records of all general, special and annual meetings. Ensures notices of meetings are provided. Retains and maintains copies of all correspondence, meeting minutes, reports and financial statements of the chapter. Coordinates and ensures publication of the chapter newsletter. Coordinates and ensures publicity for chapter educational events. Maintains a roster of all executive and committee members.
- Chairperson Education (1) – Plans, organizes implements and evaluates regular educational activities of the chapter. Selects resources, budgets, presents plans to the executive for approval and coordinates educational activities. Selects suitable committee members to assist with the educational activities. Assesses membership needs, plans, budgets, organizes, implements, and evaluates the annual conference for the membership. All conference plans are subject to approval by resolution or motion at the executive committee.
- Fundraising Chairperson (2) – Develop and maintain sponsorship with funding groups. Coordinate, plan and organize fundraising activities.

Vice President's Message- Sarah Sidebottom

Once again, it is my pleasure to be “speaking” to you on behalf of the chapter’s executive. I do wish I could speak to each one of you personally and hear the stories of your day to day work in critical care - the funny and the stressful. These stories are what makes us unique and shapes our practise for the future. The more involved I am in the CACCN, the more I realize that we have a great support system with each other – our situations may be different, but the experiences are the same. And not only are we offered support through the CACCN, we are given the opportunity to learn and grow as critical care providers with the education and literature that are the bonuses for being part of CACCN.

I guess why this is so at the front of my mind is because some of us were sharing why we became members. It was interesting to hear some of the reasons – education, discounted conference fees, to be certified, because they had to be to be sponsored. Whatever the case, I feel strongly that we need to let others on our units know that we are part of the CACCN and some of the reasons why we joined and the benefit it has made to our practice. I was shocked the other day, when one of my co-workers asked what the CACCN was. She had never heard of it and she had been on our unit for four months.....can we say that my face was red!!!! And what great recruitment!!!! I honestly feel that recruitment happens when you are personally excited and promoting what you believe in.

This of course, brings me back to recruitment and retention. I encourage you to talk about it with those on your unit. We have the “Twin and Win” contest still running. This recruitment campaign allows current members who sign up a friend or colleague a discount on their membership dues. This campaign works well for the great education days that we have coming up in March. We are looking forward to a great conference and AGM.

If you have any questions, comments, concerns, or ideas, email me or anyone on executive.
Till next time, Sarah Sidebottom ---- sarahleebettycrocker@hotmail.com

Synopsis of CACCN Dynamics 2008 Sessions

Evidence Based Practise: Focus on Enteral Feeding

On September 30, 2008 I had the privilege of attending a concurrent session by Annette Bourgault at Dynamics 2008, held in beautiful Montreal. This session focused on evidence based practise in regards to tube-feeding our patients. As a result of the convincing evidence brought forth by Annette, I will change MY practise when caring for my patient with enteral feeds. The following summary highlights the important points that Annette revealed as “Old Practise” vs Evidence-Based Practise.

- In a study conducted in 59 Canadian Hospitals in 2003, an average of only 43% of patients had adequate enteral nutrition requirements met
- patients need to be assessed within 24-48 hours of admission, with feeds initiated within 24 hours of mechanical ventilation

The following points are barriers to meeting the patient’s nutrition needs:

TYPE of FEEDING TUBE:

- a small bowel feeding tube (SBFT) is recommended for patients with impaired gastric mobility, high risk for aspiration (GCS < 9, HOB <30, vomiting and GERD), duodenum or proximal jejunum injury)

- a large bore OG or NG can be inserted if there would be a delay in starting feeds due to lack of qualified person to insert SBFT or lack of fluoroscopy to verify placement
- blindly inserted small and large bore tubes result in malposition 2% -27% of the time most commonly into tracheobronchial tree (where it can occur silently) and even up into the cranium!
- the “Gold Standard” for tube position verification is a CXR—then tube is marked at the entrance to nares to provide evidence of no migration downwards or upwards (check this marker at start of shift and prn)
- the old practise methods of listening for an “air pop” over the epigastrium, withdrawing stomach contents, and administering blue food dye are notoriously unreliable
- fairly reliable checks are pH measurements and capnometry (but these will be false if tube is curled up in the esophagus, pt is on H2 blockers, presence of food in stomach already)
- BOWEL SOUNDS:
 - there is NO evidence to correlate bowel sounds and peristalsis
 - most reliable indicator of GI motility is flatus or bowel movement
 - so expert opinion is to initiate feeds even in absence of bowel sounds
- PATIENT POSITIONING:
 - For continuous feeding- elevate HOB 30-45 degrees
 - For intermittent feeds- elevate HOB for one hour post feed
- HOLDING FEEDS:
 - AVOID holding feeds during bath and linen change (the patient already has the amount of contents in the stomach so stopping the feed will not help) (can forget to resume the feed and daily calorie content is reduced)
 - Reverse Trendelenburg position can be used instead of HOB flat if reflux is a problem
 - do not hold prior to diagnostic tests/procedures (restart within one hour of test)
 - hold 2-4 hours prior to surgery
 - adjust rate of feed to make up for “held time” (not to exceed 150 mls/hr)
- GASTRIC RESIDUAL VOLUMES (GRV):
 - saliva and gastric fluids can be 188ml/hr!
 - only necessary to check GRV on large bore tubes
 - for critically ill patients with artificial airways: a GRV of 200ml is safe
 - re-instill up to 200ml of aspirated gastric contents (depletion of electrolytes if full aspirate is discarded)
 - discard remainder of aspirate, hold feed and recheck in one hour
 - consider GI motility agent eg: Maxeran (Erythromycin is no more effective and can cause a super-imposed infection)
 - consider that patient is constipated and Tx appropriately
 - consider need for drugs that decrease motility eg. Propofol, Dopamine, Opioids
- TUBE OCCLUSIONS:
 - coagulation of protein based formulas when in contact with acidic environment or medications
 - routine water flushes with at least 30 mls q4h (and prn) are absolutely necessary
 - always flush tube before and after intermittent feeding and individual medications, following gastric aspiration and prn if tube is sluggish
 - if tube becomes occluded: attempt to flush with WARM tap water, can use pancreatic enzyme solutions mixed with Bicarb (instil and clamp for 5 minutes)

In conclusion, evidence based guidelines enhance nutritional delivery and improve patient outcome. Patients have a reduced Length of Stay in ICU's and there is a trend towards reduced mortality. Nursing can influence tube-feeding protocols and practises to reflect these evidence based goals.

So will you continue to stop your tube feed during baths and linen changes?
(References available on www.caccn.ca under Dynamics 2008 Program)

Joy Mintenko

Adrenal Insufficiency in the ICU Patient

Review of a presentation by Michael Rivet & Shelley Munro @ Dynamics 2008

There are two adrenal glands which are located above the kidneys and consist of the adrenal medulla and the adrenal cortex. The adrenal medulla works with the central nervous system to secrete hormones – epinephrine and norepinephrine, in response to sympathetic stimulation. The adrenal cortex secretes aldosterone and cortisol.

Adrenocorticotrophic hormone (ACTH) stimulates the adrenal cortex to secrete cortisol and aldosterone. Cortisol regulates carbohydrate, protein and lipid metabolism, and also has anti-inflammatory and immunosuppressive effects. Aldosterone regulates fluid and electrolyte balance through sodium and potassium homeostasis. Cortisol levels respond within minutes to stressful stimuli.

There are two types of adrenal insufficiency – primary and secondary. Primary (Addison's disease) is caused by the inability of the adrenal gland to produce cortisol, aldosterone or both. Secondary is caused by the dysfunction of the hypothalamus, pituitary gland or both, with a normal adrenal gland. Cortisol levels are not adequate to respond to the level of stress and increases the risk of death during severe illness.

Adrenal insufficiency is most commonly seen critically ill patients with sepsis and systemic inflammatory response syndrome, and may be associated with a decreased release of ACTH and cortisol during sepsis.

The ACTH stimulation test is a standard ICU test for diagnosing adrenal insufficiency. Corticotropin is a synthetic agent and stimulates the adrenal cortex to secrete cortisol. Blood is drawn for a baseline cortisol level, then at 30, 60 and 90 minute levels. Normal response is seen when the cortisol level doubles in response to ACTH stimulation. In adrenal insufficiency, serum cortisol levels fail to rise after ACTH administration. Both low and high cortisol levels are associated with a poor prognosis.

Treatment with IV hydrocortisone, methylprednisolone and dexamethasone are the most common glucocorticoids used. Hemodynamic improvement should be noticed in about 24 hours in septic shock patients. The treatment can be tapered and discontinued as the patient condition improves, or re-started if shock recurs. Blood glucose should be monitored as hyperglycemia is common.

Marian Hutchinson

Nursing in Afghanistan

One of the sessions I attended at Dynamics 2008 was nursing in Afghanistan. There were two RN's there that had recently served with the Canadian Forces. They talked about the types of patients they had to care for and the conditions in which they worked in.

Their tour of duty is usually six months long, with a three week vacation in the middle of the tour. However in these six months you are always on call in a case of a disaster or emergency. The hours are long and strenuous. It isn't uncommon to work twenty four straight hours with no sleep. There, like anywhere, are short nurses. They run an Intensive Care Unit with usually eight patients. The nurse to patient ratio is usually 2:1. These two patients are very busy usually both would be on a ventilator and have extensive dressings.

The nurses there would and are very accommodating and adaptable. They talked about how they have a lack of equipment. However, if the danger of planes landing is too great, they supplies are delayed, and there are forced to make due. They have even used helmets for traction weights.

Their patient base includes soldiers, civilians, and the local police. Many of their injuries are explosive type injuries, usually from road side bombs. When these patients come to the hospital, they are stabilized and usually then air lifted to another hospital, in usually Germany. However if urgent life saving surgery is required then they must perform what is needed to stabilize the patient. Their Operating room is kept as clean as possible however, it isn't sterile and they then will treat the infection or possibility of, post operatively. Due to the climate in Afghanistan, on some of the hot days, their equipment will over heat or breakdown.

The biggest thing about nursing in Afghanistan is the war that surrounds you. As a nurse, you must carry gun at all times for protection. They mentioned how safe they felt on the base; however the constant paranoia of what could happen would be overwhelming.

Originally, the speaker was to be male nurse who had just returned from Afghanistan a few weeks earlier. However he wasn't ready to speak about his experience, which makes one think about the emotional trauma that could follow working in these conditions. It would be hard to leave work at work. Watching your friends and family leave the base with the realization that could be the last time you see them or speak to them would be overwhelming. However the

pride the two nurses showed in their work was inspiring. Both saying they would go back. They never complained. It was always viewed as a job to be done, and they were the ones to do it.

They were proud of the work they do, and proud to serve their country.

Tanis Cole

New Technology in the Care of Traumatic Brain Injury: Nero-Microdialysis and Brain Tissue Oxygen Monitoring

The presentation started out by presenting a case study on a 22 year old MVC head-on collision in which she sustained a traumatic brain injury (TBI). They reminded us that a primary injury occurs as a result of the initial impact to the head which directly damages the neuronal tissues. A secondary injury occurs as a result of tissue hypoxia, poor cerebral blood flow, or ischemia brain tissue – cell death. These injuries may also be related to systemic changes in temperature, hemodynamics and pulmonary status. But the phase of secondary injury is where we as nurses have a chance to make the most difference.

Our current treatments of TBI include: ICP monitoring, CPP monitoring, Mannitol or hypertonic saline, blood sugar control, PCO₂ monitoring, seizure prophylaxis, positioning, temperature regulation, sedation, and decompression craniotomy. Advance treatments include brain tissue monitoring system and cerebral micro-dialysis – both of which were presented. Brain tissue monitoring system is done by inserting an inter-cranial bolt through the skull into the sub-arachnoid space either near the injury or away from the injury in the healthy tissue that is at risk for injury. The purpose is aimed at early detection and prevention of secondary brain injury resulting from inadequate delivery of nutrients and oxygen. But please note that these findings are localized but will give a picture of what is happening in the whole brain.

There are three different areas that can be monitored through the bolt. The first is inter-cranial pressure. This is not to drain CSF but only compare the ICP of the injured tissue and the healthy tissue.

Brain tissue temperature is the second thing that can be monitored through the inter-cranial bolt. Direct monitoring of the brain tissue temperature is a surrogate measure of the change in the cerebral metabolism. Remember that for every 1 degree of change in the temperature, there can be a 5 – 10% change in metabolism. There needs to be a separate machine, an endovascular cooling device that acts as the thermostat for core body temperature control. This makes it possible to maintain a more steady temperature and achieve that goal more rapidly.

The third monitoring capability of the bolt is the measurement of partial pressure of brain tissue oxygenation (PbtO₂). This is monitored by a separate stand alone system at the bedside. Being able to monitor PbtO₂ allows us to see how much oxygen is being absorbed in the brain tissue. It is interesting to note that despite a constant PaO₂, PbtO₂ levels may decrease. This alarms you to consider if cerebral oxygenation is compromised. If the PbtO₂ is decreasing, we can respond by either increasing the delivery of oxygen or decrease the demand.

Cerebral micro-dialysis detects markers of tissue damage and cerebral ischemia. Again this is a separate stand alone machine which monitors this. A catheter is used to recover extra-cellular soluble molecules utilizing diffusion. The most commonly used biochemical markers are glucose, lactate, pyruvate, and the lactate-pyruvate ratio.

To finish this presentation, the presenters compared case studies showing the outcome of this patient with other MVA patients. Though every patient is different, it was neat to see that the outcome of this patient was affect in a good way by early detection of change.

Through all of this conference there was time to view new technologies, network and view the poster presentations.

I would encourage anyone to attend this conference and learn more from those that have the knowledge so that you too can spread the knowledge around to others.

This was definitely a conference about past, present and future endeavours in nursing.

My hope is that you all take time to look through the syllabuses and learn a little.

Sarah Sidebottom

Get Involved with the Saskatchewan Chapter

Your local chapter is interested in providing services that meet your needs. Are there educational topics that you would like us to include at our next conference? Email us or better yet join us at one of our monthly executive meetings. Monthly meeting date, location and time will be sent to chapter members.

President

Angela Kubiak

[Email Angela Kubiak](#)

Vice President

Sarah Sidebottom

[Email Sarah Sidebottom](#)

Treasurer

Marian Hutchinson

[Email Marian Hutchinson](#)

Secretary

Maureen Sapara

[Email Maureen Sapara](#)

Education

Celine Whiting

[Email Celine Whiting](#)

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*The executive members of the Saskatchewan
CACCN Chapter wish you all safe and enjoyable
summer!!*