Clinical Pearls

Putting Evidence-Based Care in Your Hands AJCC

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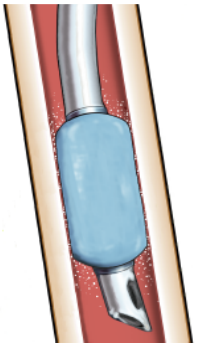
Clinical Pearls is designed to help implement evidence-based care at the bedside by summarizing some of the most clinically useful material from select articles in each issue. Readers are encouraged to photocopy this ready-to-post page and share it with colleagues. Please be advised, however, that any substantive change in patient care protocols should be carefully reviewed and approved by the policy-setting authorities at your institution.

Continuous Monitoring of Endotracheal Tube Cuff Pressures



Maintaining an endotracheal tube (ETT) cuff pressure between 20 and 30 cm H_2O helps prevent ventilator-associated pneumonia. Cuff pressures decrease over time due to many factors. Would an intervention of continuous ETT cuff monitoring with alarms help maintain the recommended pressure? Sole and colleagues studied 32 patients for 2 days (each serving as both control and intervention) and found the following:

- Monitoring with intervention to add or remove air was effective in maintaining optimum cuff pressures twice as often as the control group (88.8% vs 48.3%).
- The proportion of time cuff pressures were in optimum range was significantly higher on the intervention day versus the control day.
- The number of interventions ranged from 2 to 14 per patient during the 12-hour intervention day.
- Only small amounts of additional air (0.1-0.2 mL) were needed to maintain cuff pressure, so consider using a tuberculin syringe to adjust cuff volume.

—*Maureen Seckel, RN, APN, MSN, APRN-BC, CCRN, CCNS*

See Article, pp 109-117

Cognitive Status, Cardiac Surgery, and Patient Outcomes

Atherosclerosis associated with heart disease may also affect cerebral vasculature and cause cognitive dysfunction. Harrington and colleagues sought to determine the association between preoperative cognitive function and hospital discharge outcomes following cardiac surgery. They noted the following:

- Preoperative screening for cognitive dysfunction is recommended for patients undergoing cardiac surgery for atherosclerosis.
- A brief clock-drawing task is a good, easy-to-score screening tool.
- Preoperative cognitive function is not associated with postoperative length of stay.
- Patients with better preoperative cognitive function were more likely to return home than patients with more impairment.
- Knowing a patient's cognitive status prior to cardiac surgery may be useful in planning postoperative care and patient discharge.

—*Karen McQuillan, RN, MS, CNS-BC, CCRN, CNRN*

See Article, pp 129-137

Tissue Oxygenation Saturation and Patient Outcome

Nurses measure oxygenation to make care delivery decisions. A new technology, StO_2, provides continuous assessment of oxygen consumption. Sanders and colleagues investigated its use to predict outcomes of cardiac surgery patients. In 74 first-time open-heart patients requiring cardiopulmonary bypass they found the following:

- StO_2 was lower during induction in patients who required intervention for hemodynamic changes, but did not differ between patients who did and did not require interventions during surgery.
- A mean StO_2 less than 75% during surgery was associated with prolonged ventilation.
- Lower StO_2 during the first 20 minutes of intensive care unit monitoring was associated with morbidity on days 3 and 15.

StO_2 monitoring may aid earlier detection of patient instability with potential to influence care decisions. Clinical evaluations are essential to establish the clinical utility of new tools.

—*Elisabeth George, RN, PhD*

See Article, pp 138-145

Systematic Diagnosis of Pleural Effusion

Fluid analysis of a pleural effusion may provide important diagnostic information. McGrath and colleagues described this condition and the benefits of a systematic diagnostic approach. They noted the following:

- Pleural effusions are most commonly caused by cardiac failure, pneumonia, and malignancy.
- They are classified as either transudative or exudative. Transudative effusions occur from fluids accumulating from cardiac, hepatic, or renal failure, whereas exudative effusions occur from infection, malignancy, or inflammation syndromes.
- Diagnosis involves careful history taking, physical examination, and analysis of fluid samples.
- Symptoms are often quickly improved by drainage of the effusion.

—*Janet Mulroy, RN, MSN, ACNP, CCNS, CCRN*

See Article, pp 119-128

Intrahospital Transport

Transporting a patient from the intensive care unit (ICU) to needed diagnostic or therapeutic interventions is a challenge. Preventing adverse events and ensuring patient safety is key. In this issue, Kue and colleagues evaluated a dedicated intrahospital transport team. The study's results can be used to help ensure patient safety while on "road trips."

- Patients transported by this team had fewer adverse events (1.7%) compared to the rate reported in other studies (8%). Despite the occurrence of adverse events, hypoxia, or hypotension, more than 80% of the transports were successfully completed.
- Patients at higher risk for aborted transports tended to be older, not intubated, and scheduled for magnetic resonance imaging, and they originated from neurological ICUs, stepdown, and telemetry units. These patients, some who do not necessarily require ICU care, may benefit the most from a dedicated transport team.

—*Karen Johnson, RN, PhD*

See Article, pp 153-162