

Industry Trends

Elevation of the Neurology Patient's Head: Right or Wrong?

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Mr. V. M. is admitted to your neurology unit at 3:30 am with a hemorrhagic stroke. He is drowsy and responds to verbal stimuli but does not follow commands consistently. As the nurses move him from the cart to the bed you automatically raise the head of the bed to 45°, because you know that raising the head allows for venous drainage and the lowering of intracranial pressure (ICP) (Palazón, Asensi, López, Bautista, & Candel, 2008). In addition, if this patient were intubated, elevating the head would prevent ventilator-associated pneumonia (Fields, 2008). The neurology clinical nurse specialist (CNS) follows you into the room and lowers the head of the bed down to 25°–30°. Why would the CNS do that?

In 1991, Urlesberger, Müller, Ritschl, and Reiterer documented that there is a change in ICP when elevating the head of the bed in newborns with posthemorrhagic hydrocephalus. Barami, Sood, Ham, and Canady (2000) monitored children with chronic hydrocephalus and discovered large shifts in ICP when the children changed positions, such as standing up.

Multiple authors have provided data showing that lowering ICP relieves pressure thus decreasing axonal tension, but what about perfusion? Cerebral perfusion pressure (CPP) is much more important to measure than ICP, because it is a measure of cerebral dynamics and regional oxygenation. In addition, the delivery and use of oxygen at the cellular level can directly affect tissue survival (Bader, Littlejohns, & March, 2004). Fan (2004) further hypothesized that head elevation may put traumatically brain injured (TBI) individuals in danger of secondary injury due to impaired arterial blood pressure and compromised cerebral perfusion pressure (CPP).

So what is a nurse to do? It would seem reasonable to assume that the lower the level of the patient's head, the easier it would be for the heart to perfuse the brain and therefore create a lower central venous pressure (CVP). Kim and Sohng (2006) measured the effects of the backrest position on central venous pressure (CVP) and ICP in brain surgery patients and found there was no alteration in CVP and no elevation of ICP with the head of the bed at 0°–30°.

So, the question remains—what is the ideal angle at which to position the head of the bed to keep ICP down and yet maintain an adequate CPP and MAP? A study by the National Institutes of Health (NIH) # NCT00747682 entitled, “Cerebral Perfusion, Oxygenation, Electrical Activity” is currently recruiting participants and may help answer the question definitively. Another unanswered question is whether or not the type of brain insult is a significant factor (i.e., subdural vs. stroke.) Until a definitive consensus is issued, it appears safe to elevate the head of the bed up to 30° (Ng, Lim, & Wong, 2004; Wojner-Alexander, Garami, Chernyshev, & Alexandrov, 2005). Fan concludes intensive care nurses need to cautiously perform head elevation with a thorough understanding of its physiologic effect and potential hazards.

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New Year, New Joint Commission Requirements for Primary Stroke Centers *Brenda Moss Feinberg, ELS*

The Joint Commission has revised its disease-specific care (DSC) certification requirements regarding intravenous (IV) thrombolytic therapy for primary stroke centers (PSCs). The requirements, which go into effect January 1, 2009, reflect increased focus on organizational infrastructure, according to Jean E. Range, MS RN CPHQ, executive director for the Disease-Specific Care Certification Program at The Joint Commission.

The Joint Commission contends specific IV thrombolytic therapy requirements are necessary to support the safe and effective use of this therapy in certified PSCs. Six new certification requirements focus on program management (PR), delivering and facilitating care (DF), and performance measurement (PM).

Standard PR.8

Revised DSC certification requirements for PSCs will include the following elements of performance for Standard PR.8, taken directly from The Joint Commission:

- The organization's formulary or medication list must include a thrombolytic therapy (IV administered) medication for ischemic stroke.
- Documentation indicates the reason eligible ischemic stroke patients did not receive an IV thrombolytic therapy.

“We had been hearing anecdotal reports from advisory workgroups—many representing Brain Attack Coalition members including the American Stroke Association—that some organizations had not made the front-end infrastructure investment to deliver state-of-the-art treatment to stroke patients,” Range tells *Synapse E-News*. “A workgroup suggested the need for organizations to have the ability to give IV thrombolytic therapy if circumstances were appropriate. We had heard that some organizations didn't have thrombolytic therapy on their formulary, so even if they wanted to give it, they couldn't. We worked for 2 years with the advisory workgroup and the American Stroke Association, and we are happy we could come up with specific additions to the standards and help influence a more robust infrastructure to provide state-of-the-art care.

“Standard PR.8 also speaks to the accountability of staff while recognizing that not all patients are going to receive this therapy if they are eligible,” Range continues. “A patient or their family may refuse the therapy, but the documentation must reflect this.”

Penn State Hershey Medical Center in Hershey, PA, is a step ahead when it comes to Standard PR.8. IV thrombolytic therapy already is on the formulary, and it is the admitting neurologist's responsibility to comply with the documentation standard for nonadministration situations, according to Kathy Morrison, MSN RN CNRN, the facility's stroke program manager. “We have created an electronic format that is required for every new stroke admit,” she says. “The format prompts neurologists to document the reason for not administering IV thrombolytic.”

Standard DF.1

The following revisions apply to the elements of performance for Standard DF.1:

Eighty percent of emergency department (ED) practitioners are knowledgeable about the following:

- The pathophysiology, presentation, assessment, diagnostics, and treatment of patients with acute stroke, including the following:
 - Indications for use of IV thrombolytic therapy
 - Contraindications to IV thrombolytic therapy
 - Signs and symptoms of neurological deterioration post IV thrombolytic therapy.

The Joint Commission defines a *practitioner* as any individual who is licensed and qualified to practice a healthcare profession, including physicians, nurses, or respiratory therapists, and is engaged in the provision of care, treatment, or services.

“In our primary stroke center and in the one at which I previously worked, 80% being knowledgeable of these three categories would be a stretch,” Morrison says. “It is likely that 80% know the major indications and a few major contraindications. They are knowledgeable of the signs of neurodeterioration. Training is necessary, and is being conducted here at Hershey Medical Center in the form of staff meeting reviews, department meeting reviews, and newsletter articles. The less common contraindication of seizure at onset, or the timeframes such as stroke within the past 3 months or surgery within 15 days, are the ones that we’ve concentrated on in our education.”

According to Range, The Joint Commission was acutely aware of the far-reaching role of neuroscience nurses working in PSCs as it revised its requirements.

“While Section DF.1 talks about practitioners having knowledge, we recognize it is actually the nurses who gather this information and present it to the ED physician, neurologist, or licensed independent practitioner,” Range says. “The process really begins and ends with nurses, beginning with the nursing assessment, and ending with proper documentation and the eventual transfer of the patient.”

Standard PM.2

The following revisions apply to the elements of performance for Standard PM.2:

There is evidence that specific stroke performance measurement data, focused on use of IV thrombolytic therapy, are evaluated through the quality improvement process and by the stroke team.

Neuroscience nurses already are part of the quality improvement team at Penn State Hershey Medical Center; here the administration of IV thrombolytics is an area of focus because the nurses prepare the drug.

“Our nurses display a greater sense of ownership of the treatment-decision process, possibly because they are more involved in ensuring the safety of the process,” Morrison says. “If they calculated and prepared the treatment wrong, they would have greater responsibility. Nurses at

the hospital I previously worked in did not mix the thrombolytic—they were responsible for checking the pharmacy’s calculation. We had found this didn’t always happen. When they were approached and asked why not, they said that it was the pharmacy’s job, not theirs. They administered the thrombolytic and seemed more detached from the process.”

The Joint Commission is encouraging organizations to develop a process through which every level of practitioner can participate in the performance improvement process and provide feedback regarding performance, including recommendations on potential improvements.

“We expect nurses to be actively involved in performance improvement,” Range says. “They may be involved in collecting and measuring performance data that are evaluated through the quality improvement process and by the stroke team. The best programs we see are programs in which the stroke team itself collects and analyzes data. On an ongoing basis, they can report results in the ED and on units where stroke patients are treated, and even in the intensive care unit (ICU), so all levels of staff are aware of where performance is working and what can be done to improve it.”

Note: This article featured excerpts from the revised standards. To read the full text of the revised DSC certification requirements, see The Joint Commission’s 2009 Disease-Specific Care Certification Manual, or call The Joint Commission’s Standards Interpretation Group at 630/792-5900 with your questions.

In Related News

Intravenous Thrombolytic Treatment Window Can Exceed 3 Hours

Intravenous thrombolytic treatment with alteplase—initiated within 3 hours after onset of stroke symptoms—has been the preferred intervention for eligible stroke patients who quickly present to stroke centers. Research confirms that patients who receive the therapy within 3 hours are likely to have minimal disability or no disability at 3 months. Breaking through the long-established 3-hour treatment window protocol, however, researchers recently contributing to the *New England Journal of Medicine* reported that a favorable outcome can be observed if treatment is administered within 4.5 hours after symptom onset (Hacke et al., 2008).

The ECASS III randomized, placebo-controlled, phase 3 trial enrolled patients from multiple centers across Europe to test the efficacy and safety of alteplase administered 3 to 4.5 hours after the onset of a stroke. Intravenous alteplase given 3 to 4.5 hours after symptom onset was associated with a modest but significant improvement in clinical outcome, without the higher rate of symptomatic intracranial hemorrhage that has been reported among patients treated within 3 hours.

Symptomatic intracranial hemorrhage is the most common complication of thrombolysis for acute ischemic stroke. The study’s authors caution that despite their findings, the “door-to-needle” time remains essential and patients should be treated with alteplase as soon as possible to increase the chance for a positive outcome.

Reference

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Epilepsy Work Group Looks to Improve Patient Safety

Lincoln Brunner

In a healthcare industry that rivals the military for sheer amount of protocols and regulations, one niche—epilepsy monitoring units (EMUs)—still has no broad standards for patient safety.

The fact that EMU's would lack widely accepted safety standards might strike some as ironic. After all, it is there that patients often present a danger to themselves (and others) when they are taken off antiseizure medication to observe their seizures.

Helping to bridge that gap in care for epilepsy patients is the goal of a work group headed up by AANN member Janice Buelow, PhD RN, of the University of Indiana. Buelow's work, funded by a grant from the American Epilepsy Society (AES), is one of four work groups in a task force looking at different facets of epilepsy patient care: seizure provocation, emergency protocols, observation, and environment and exercise.

The work groups sprang from a discussion at a special interest group meeting at the AANN annual meeting 2 years ago. At about the same time, members of the AES Practice Committee expressed interest in the same topic.

At a later AES meeting, Buelow met with epilepsy specialist Dr. Paul Levisohn of The Children's Hospital in Denver. Together they developed a survey of all physicians and nurses in AES, asking them what their standards of EMU care were.

"What we found from that was that there were no standards," says Buelow, much of whose research focuses on children and parents with epilepsy. "Everybody was doing something different."

For instance, some hospitals use padded side rails to protect patients who are seizing, while other hospitals' regulations forbid them, even if patients request them. The cameras used to record patients' seizures raise privacy issues. Even something as simple as using the restroom can and does present potential for injury during the monitoring process.

Because of all this, nurses in EMUs need policies that are based on evidence in addition to generally accepted rules, says Rebecca Fisher, RN BSN CNRN, a nurse at the Johns Hopkins Hospital EMU.

"Things that are in use for regular hospital patients, other than universal precautions, are not really good guidelines for our patients in the EMU," says Fisher, who has worked in neuroscience for 18 years. "There are practice issues, safety issues, and privacy issues that are unique to the EMU."

"We're trying to establish something in writing that can help people develop EMU's and help them develop their staffs."

The work groups are in the developing stages. In the absence of concrete universal EMU standards, Buelow hopes her work group can establish checklists and recommendations that will help EMUs everywhere improve patient care.

"It really has to do with patient safety," Buelow says. "You really can't think about patients' safety without thinking about systems, because a single person—a nurse or a doctor or an EEG technician—doesn't walk in and say 'I'm going to hurt a patient.' It usually has to do with the breakdown in systems—what things within the system we really need to be thinking about that create a safe environment for our patients."

Buelow, along with Levisohn and two other physicians, will soon publish a paper based on their initial survey findings. She also will be presenting her work at a symposium at the

December AES meeting in Seattle—the next step in what everyone involved acknowledges will be a long process.

“We are just in the beginning stages of what this is all going to look like,” Buelow says.

“We’re going to present what we’ve come up with so far, and what we’re hoping is that we just generate a lot of discussion.

“One of the problems is that there’s never going to be a standard. We’re never going to be able to say, ‘This is the only right way to do this.’ Every monitoring room is different.”