

Patient Safety Tip of the Week

May 6, 2014

Monitoring for Opioid-induced Sedation and Respiratory Depression

Long at the top of our list of hospital-based patient safety issues is opioid-induced respiratory depression. Opioid use in the hospital setting is substantial and it's not just surgical patients who are receiving opioids. Over half (51%) of medical inpatients receive opioids, often in high doses ([Herzig 2014](#)).

We recently came across an article in the nursing literature describing one hospital's efforts to implement change in policy, practice and culture regarding monitoring of sedation in patients receiving opioids for pain ([Smith 2014](#)). Smith and colleagues assembled a multidisciplinary team in an academic medical center and did an extensive review of the literature on opioid-induced sedation and respiratory depression. They very appropriately concluded that **all patients on opioids are at risk** for these complications. Because sedation often precedes respiratory depression in patients on opioids they focused their attention on how they monitored sedation.

After reviewing the various sedation assessment tools available, they chose the **Pasero Opioid-induced Sedation Scale (POSS)**. While many organizations utilize other assessment tools, most notably the Richmond Agitation and Sedation Scale (RASS), we've always liked the Pasero scale for its simplicity and actionability (see our Patient Safety Tips of the Week for "[Monitoring the Postoperative COPD Patient](#)" and February 19, 2013 "[Practical Postoperative Pain Management](#)").

They included in their policy a good description of the appropriate assessment of respiration, conducted at the same intervals as the sedation assessment. As we've indicated on numerous occasions, it is critical that the patient not be aroused before doing that assessment of respiration. The patient is then aroused before the sedation assessment is done.

Built into their policy is the requirement that the nurses consider opioid pharmacokinetic and pharmacodynamics factors. That includes factors such as peak effect time of the

opioid and frequency/route of administration. One important point is the need to **reassess respiratory status and the POSS at the time of expected peak opioid effect.**

They created a documentation flowsheet and added it to the electronic medical record. We recommend you take that even a step further. With today's sophisticated systems for barcoding, pharmacy management and electronic medical records we can use **forcing functions** to ensure the appropriate assessment of sedation is done prior to administration of the next dose of opioids and embed actions to be taken right into the system based upon results of the sedation assessment.

Their rollout included educational programs using PowerPoint slides, computer-based learning sessions, unit-based reference binders, a one-page flier, and pocket-sized reference cards.

They assessed the impact of their initiative in two ways. One was administering a questionnaire to nurses before the implementation began and about 6 months after implementation. This showed that nurses were better able to recognize patients at risk and understood use of the assessment tool. They also did regular audits for compliance with the policy (a copy of the audit tool is available in the supplemental materials accompanying the journal article). Audits showed an initial need to improve compliance but then showed improvement in most, but not all, measures. They note the need for a continued focus is needed to fully integrate the changes into daily practice.

This is a well-done article and provides insights into useful tools and issues you'll encounter as you attempt to change the culture and practice regarding this significant patient safety issue.

We also refer you back to our February 19, 2013 Patient Safety Tip of the Week "[Practical Postoperative Pain Management](#)" that highlighted a great overview and recommendations by Chris Pasero ([Pasero 2013](#)). That article and the many columns we've done on opioid-induced respiratory depression (see list below) emphasizes such issues as recognition of snoring as a red flag, pitfalls of pulse oximetry, benefits of capnography for monitoring, ability of nurses to administer naloxone when necessary, and recognition of the renarcotization phenomenon after narcotic reversal.

The Smith article and the Pasero article are very valuable reads to help you get your practices regarding patient safety and opioids up to standard.

Other Patient Safety Tips of the Week pertaining to opioid-induced respiratory depression and PCA safety:

- January 4, 2011 ["Safer Use of PCA"](#)
- July 13, 2010 ["Postoperative Opioid-Induced Respiratory Depression"](#)
- May 12, 2009 ["Errors With PCA Pumps"](#)

- September 21, 2010 “[Dilaudid Dangers](#)”
- November 2010 “[More on Preoperative Screening for Obstructive Sleep Apnea](#)”
- February 22, 2011 “[Rethinking Alarms](#)”
- May 17, 2011 “[Opioid-Induced Respiratory Depression – Again!](#)”
- September 6, 2011 “[More Tips on PCA Safety](#)”
- December 6, 2011 “[Why You Need to Beware of Oxygen Therapy](#)”
- February 21, 2012 “[Improving PCA Safety with Capnography](#)”
- September 2012 “[Joint Commission Sentinel Event Alert on Opioids](#)”
- September 2012 “[FDA Warning on Codeine Use in Children Following Tonsillectomy](#)”
- July 3, 2012 “[Recycling an Old Column: Dilaudid Dangers](#)”
- February 12, 2013 “[CDPH: Lessons Learned from PCA Incident](#)”
- February 19, 2013 “[Practical Postoperative Pain Management](#)”
- Tools: [PCA Pump Audit Tool](#) and the [PCA Pump Criteria](#)

And we think you’ll learn a lot from our prior articles pertaining to long-acting and/or extended release preparations of opioids:

- June 28, 2011 “[Long-Acting and Extended-Release Opioid Dangers](#)”
- September 13, 2011 “[Do You Use Fentanyl Transdermal Patches Safely?](#)”
- May 2012 “[Another Fentanyl Patch Warning from FDA](#)”
- July 24, 2012 “[FDA and Extended-Release/Long-Acting Opioids](#)”

References:

Herzig SJ, Rothberg MB, Chekung M, et al. Opioid utilization and opioid-related adverse events in nonsurgical patients in US hospitals. *Journal of Hospital Medicine* 2014; 9(2): 73-81
<http://onlinelibrary.wiley.com/doi/10.1002/jhm.2102/abstract>

Smith A, Farrington M, Matthews G. Monitoring Sedation in Patients Receiving Opioids for Pain Management. *J Nurs Care Qual* 2014; published ahead of print 28 March 2014
http://journals.lww.com/jncqjournal/Abstract/publishahead/Monitoring_Sedation_in_Patients_Receiving_Opioids.99757.aspx

Pasero C. The Perianesthesia Nurse's Role in the Prevention of Opioid-Related Sentinel Events. Journal of PeriAnesthesia Nursing 2013; 28(1): 31-37

<http://download.journals.elsevierhealth.com/pdfs/journals/1089-9472/PIIS1089947212005217.pdf>



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