September 2013

Disappointing Results in Delirium

We've done multiple columns on delirium in ICU patients and post-op patients (see the list at the end of today's column) and have focused on identification of patients at risk for delirium and interventions to prevent delirium or mitigate delirium when it does occur. Most interventions have been nonpharmacological. Nevertheless, use of haloperidol in attempt to prevent delirium or modify its course and severity is still common in hospitals despite lack of convincing evidence of its effectiveness.

Now a new randomized controlled trial has demonstrates no impact from early treatment with haloperidol on mechanically ventilated ICU patients (Page 2013). The authors randomized adult ICU patients within 72 hours of ICU admission to either IV haloperidol or placebo. They found no significant difference between the two groups in number of days without delirium or coma, mortality, ICU length of stay, hospital length of stay, or time on ventilator. Though there appeared to be no serious side effects of treatment, there really were no beneficial effects seen.

In an editorial accompanying the article Skrobik raises the issue of whether we should be looking to treat delirium pharmacologically at all, noting that only nonpharmacological measures have been shown to reduce delirium in critically ill patients (Skrobik 2013).

However, in many of our prior columns on delirium we have mentioned multimodality intervention programs that were promising in reducing the incidence or severity of delirium in hospitalized patients (see our Patient Safety Tips of the Week for October 21, 2008 "Preventing Delirium", October 14, 2009 "Managing Delirium", February 10, 2009 "Sedation in the ICU: The Dexmedetomidine Study", March 31, 2009 "Screening Patients for Risk of Delirium" and January 26, 2010 "Preventing Postoperative Delirium"). One of those interventions was HELP, the Hospital Elder Life Program (see our October 21, 2008 Patient Safety Tip of the Week "Preventing Delirium"). Inouye et al (Inouye 1999) had shown in a landmark study of 852 medical patients aged 70 and older that management of 6 risk factors was able to reduce the incidence of delirium from 15% to 9.9%. The number of days with delirium and the number of episodes of delirium was also reduced by the intervention. The intervention targeted cognitive impairment, sleep deprivation, immobility, visual impairment, hearing impairment, and dehydration. This was strong evidence that a multicomponent intervention could be of benefit in reducing delirium.

However, getting physicians to use those interventions has been difficult. So recently researchers in Indiana looked at whether a clinical decision support system could reduce the occurrence of delirium by avoiding unnecessary urinary catheters and physical

restraints, consulting geriatricians, and avoiding anticholinergic drugs (Khan 2013). In 60 adults with cognitive impairment who were part of a larger study on patients transferred to an ICU they found that there was no significant difference between the intervention group and the control group in the discontinuation of urinary catheters or physical restraints, orders for geriatric consultation, discontinuation of anticholinergic drugs, or the incidence of delirium. They conclude that use of a computer-based clinical decision support system may not be effective in changing prescribing patterns or in decreasing the incidence of delirium.

Though the results of the clinical decision support system on preventing delirium were disappointing, we hope this does not deter you from implementing multimodality intervention programs in patients at risk for delirium. Nursing care plans, standardized order sets, HELP programs, comprehensive geriatric care programs, clinical pharmacist programs, and other interventions may be better ways to address the issue rather than using computerized decision support systems. We know that many of our most well intended clinical decision support tools fail because of alert fatigue. Maybe the alerts generated by such systems need to go to someone other than the physician. For example, if patients can be flagged as being at risk for delirium from data within the electronic medical record an alert could go to nursing personnel or a clinical pharmacist and they may be successful at getting our physicians to do the interventions.

Some of our prior columns on delirium assessment and management:

- October 21, 2008 "Preventing Delirium"
- October 14, 2009 "Managing Delirium"
- February 10, 2009 "Sedation in the ICU: The Dexmedetomidine Study"
- March 31, 2009 "Screening Patients for Risk of Delirium"
- June 23, 2009 "More on Delirium in the ICU"
- January 26, 2010 "Preventing Postoperative Delirium"
- August 31, 2010 "Postoperative Delirium"
- September 2011 "Modified HELP Helps Outcomes in Elderly Undergoing Abdominal Surgery")
- December 2010 "The ABCDE Bundle"
- February 28, 2012 "AACN Practice Alert on Delirium in Critical Care"
- April 3, 2012 "New Risk for Postoperative Delirium: Obstructive Sleep Apnea"
- August 7, 2012 "Cognition, Post-Op Delirium, and Post-Op Outcomes"

References:

Page VJ, Ely EW, Gates S, et al. Effect of intravenous haloperidol on the duration of delirium and coma in critically ill patients (Hope-ICU): a randomised, double-blind,

placebo-controlled trial. The Lancet Respiratory Medicine 2013; Early Online Publication 21 August 2013 doi:10.1016/S2213-2600(13)70166-8
http://www.thelancet.com/journals/lanres/article/PIIS2213-2600%2813%2970166-8/fulltext

Skrobik Y. Can critical-care delirium be treated pharmacologically? Lancet Respir Med 2013; Early Online Publication, 21 August 2013 doi:10.1016/S2213-2600(13)70178-4
http://www.thelancet.com/journals/lanres/article/PIIS2213-2600%2813%2970178-4/fulltext

Inouye SK, Bogardus ST, Charpentier PA, Leo-Summers L, Acampora D, Holford TR, Cooney LM. A Multicomponent Intervention to Prevent Delirium in Hospitalized Older Patients. NEJM 1999; 340: 669-676
http://content.nejm.org/cgi/reprint/340/9/669.pdf

Khan BA, Calvo-Ayala E, Campbell N, et al. Clinical Decision Support System and Incidence of Delirium in Cognitively Impaired Older Adults Transferred to Intensive Care. Am J Crit Care 2013; 22(3): 257-262
http://ajcc.aacnjournals.org/content/22/3/257.abstract