VENTILATOR ACQUIRED DELIRIUM

CREATED BY JOSHUA VRONA

COHP 450
INTRODUCTION:

• Delirium is defined as “An acute change in mental status or a fluctuating course, impaired attention, and disorganized thinking.” (Lin, S., Chien-Ying, L., Wang, C., 2004.)

• Why is increased delirium a problem?

• Slightly modified PICO question: In ICU patients does the Awakening and Breathing Coordination, Delirium monitoring/management, and Early exercise/mobility (ABCDE) bundle, as compared to no intervention decrease the health risks associated with ventilator acquired delirium.
For this paper I used the PubMed and CINAHL databases.

Key words: included, delirium, ventilation, delirium prevention, reducing delirium, and patient safety.

Total of 70 articles showed up out of those 66 were journal articles.
Search Results: 1 - 10 of 70

1. Clinical Nurse Specialist as Change Agent.
   Subjects: ICU Psychosis Prevention and Control; Critical Care; Professional Practice; Evidence-Based; Multidisciplinary Care Team; Quality Improvement; Change Management; Clinical Nurse Specialists; Nursing Role; Program Implementation; Protocols; Practice Guidelines; Guideline Adherence
   Find It!

   Subjects: Intensive Care Units; Delirium Therapy; Pneumonia; Ventilator-Associated Prevention and Control; Spinal Cord Injuries; Immobilization; Middle Aged: 45-64 years; Female
   Find It!

3. Effectiveness and safety of the awakening and breathing coordination, delirium monitoring/management, and early exercise/mobility bundle.
   (includes abstract) Balas, Michele C.; Vasilievska, Eduard E.; Olsen, Keith M.; Schmid, Kendra K.; Shostrom, Valerie; Cohen, Marlene Z.; Feitz, Gregory; Gannon, David E.; Silson, Joseph; Sullivan, James; et al; Critical Care Medicine. 2014 May; 42 (5): 1024-35. (journal article - research) ISSN: 0090-3433 PMID: 24384627
   Subjects: Delirium Therapy; Hypnotics and Sedatives Therapeutic Use; Immobilization Adverse Effects; Critical Care Methods: Respiration, Artificial Adverse Effects; Ventilator Weaning Methods; Adult: 19-44 years; Aged: 65+ years; Middle Aged: 45-64 years; Female
   Find It!

IT’S RELEVENCY MY DEAR WATSON!

The article *The impact of delirium on the survival of mechanically ventilated patients*. Was relevant in several ways.

- Provided statistics on association of ventilation and patient delirium
- Proposed a different risk management strategy for delirium prevention
- It also showed an connection between delirium and patient mortality.

The article *Effectiveness and safety of the awakening and breathing coordination, delirium monitoring/management, and early exercise/mobility bundle*.

- Provided conformation that delirium can be caused by ventilation
- It studied the ABCDE bundle prevention method of prevention
FINDINGS FOR ARTICLE #1

• Theory: Increased incidences of delirium were associated with respiratory failure that required ventilation. They also wanted to establish if the Confusion Assessment Model (CAM – ICU) was able to identify delirium as well as the DSM – IV model.

• Type of Study: Experimental case study

• 131 total admitted to ICU with ventilation 22 were excluded giving a total population of 109
  • 1.) Baseline Assessment: Medical history, age, race, demographic data, clinical diagnosis, etc.
  • 2.) Delirium Assessment using CAM model or DSM model
  • 3.) Statistical Analysis: Comparing the two tests.

• Results?
FINDINGS FOR ARTICLE #2

• Theory: This study was designed to better understand these important aspects of the ABCDE management strategy. “Our goal was to determine if implementing the ABCDE components as a bundle would prove safe and effective if applied to every critically ill patient.” (Balas, M., Vasilevskis, E., Olsen, K., Schmid, et. al, 2014.)

• Type of study: Experimental case study

• 146 total participants were compared to previous data on patients who did not receive the ABCDE bundle.
  • 1.) Daily sedation and delirium evaluation
  • 2.) Awaking and Breathing Coordination
  • 3.) Exercise and Mobility planning
  • 4.) Compare results

Results?
ETHICAL IMPLICATIONS

• Both studies got approval from the review board of the Journal of Critical Care.

• Patient Safety and Social Value
  • Is beneficial to the treatment of patients with acquired delirium

• Scientific Validity
  • No bias amongst patients
  • Easily replicated

• Consent from patients or family members
STRENGTH, QUALITY, AND CREDIBILITY STUDY #1

- Good Sample Size n = 109
- Strong correlation between ventilation and delirium around 25% of the patients.
- Strong correlation between delirium and increased mortality rate 93%.
- CAM-ICU method was just as good as diagnosing delirium as the DSM-IV.
- Other studies have found similar if not higher levels of delirium in patients who are ventilated.
- Credible because of retest ability
  - A outcome like those seen above would demonstrate high credibility

credibility
credible [kred-uh-bil-ee] noun
the quality of being believable or worthy of trust
STRENGTH, QUALITY, AND CREDIBILITY STUDY #2

- Total population n = 146, in general were equally representative of normal society distribution
  - Except for Age
- Delirium was shown to be decreased by almost 63% using the ABCDE bundle by almost 63%
  - Including an average length of stay one day less than those not treated with the bundle.
- The study occurred under credible, and licensed physicians and nurse staff
- Easily replicated results if followed.
- No other articles to back this up as it is a new method for prevention of delirium.
CONTRIBUTION TO EBP

• The studies showed that indeed there are connections between ventilation and delirium within patients.
  
  • So a screening process after ventilation of patient has been largely used in order to determine if the patient is having side-effects of delirium.
  
  • It also used to be thought that patients within the ICU needed lots of rest so they were kept in dark rooms with little to no conversation from the nurses. Now thanks to better understanding of delirium and research it has been determined that the best course of method is to make daytime day and night time night, to mobilize the patient early, and follow the other steps shown in the ABCDE bundle.
  
  • Patients are also now being screened after being sent home for signs of delirium in cases where relatives notice a difference in the patients behavior.
CHANGE TO THE PRACTICE OF NURSING

• I think that as more evidence comes out to whether or not the ABCDE bundle, is effective in decreasing the risk of delirium a change to the nursing practice will take place.

  • Hospitals / other health care facilities should adopt their policies to make sure the ABCDE bundle is being implemented. Although it is important to note that each individual is different, and deserves personalized care.

• Implications of change
  • More monitoring of patients
  • Increased mobilizing and plans for safety
  • New sedation methods
  • Education of staff and family
BARRIERS TO PRACTICE

• More research still needs to be done.
• Nursing Shortages
• Patient compliance or ability to pay for programs.

PICO QUESTIONS
CONCLUSION

• In conclusion, the studies showed a connection between delirium as a result of ventilation.
• Patients who received the ABCDE bundle showed less chance of delirium, decreased hospital stay, and mortality rate.
• More research needs to be done to verify the ABCDE bundle.
• Despite barriers policy should be put into place to best serve the patient.
• Overall, this was a beneficial project in understanding the importance of research in the nursing field.