An Evidence-Based Systematic Review of Efficacious Interventions for the Management of Delirium in Adult Acute Care Patients

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1 Background

Delirium is the most common, often serious, and potentially preventable neuropsychiatric complication seen in patients with cancer (Breitbart & Alici, 2012). It is an illness caused by a significant physiologic disturbance, usually involving multiple medical etiologies among patients with cancer, including infections, organ failure, and adverse effects of medication (Breitbart & Alici, 2012). It is associated with increased risk for complications, morbidity and mortality, increased duration of hospitalization, and higher health care costs, especially for older adults and those with advanced cancer (Kang, Shin & Bruera, 2012; Inouye, 2006). Delirium impairs communication for patients and causes significant distress in patients, family members, and professional caregivers (Breitbart & Alici, 2012). Delirium impacts the safety and quality of care provided by the health care team, as nurses and physicians may be have poorer ability to appropriately and accurately assess physical symptoms such as pain and fatigue (Kang et al., 2012).

The main objective of this Evidence-Based Practice (EBP) project was to compare current evidence about the most efficacious nursing interventions for managing delirium in the adult acute care setting with the current delirium protocol and practice on an adult oncology unit at the Johns Hopkins Hospital (JHH). This unit is the only unit at JHH to develop a systematic protocol for delirium screening and management, emphasizing the importance of targeting delirium in the care provided for their patient population (Johns Hopkins Hospital, 2012). When the initial protocol was developed in 2005, delirium prevention and screening were robustly represented in the scientific literature, while delirium management had a meager evidence base. Since implementation of the protocol, the selected delirium screening methodologies have proven effective in practice, yet uncertainty remains related to the protocol's recommendations for delirium management.

Effective, timely management of delirium using targeted, evidence-based interventions may reduce morbidity, length of hospital stay, and healthcare costs (Inouye, 2006). Improved delirium management will better utilize the time and resources of the health care team, promote higher quality care and lead to better patient outcomes. We initiated this EBP project so that the unit protocol will stay current with the latest evidence and so that unit practice will ensure patient safety and the highest quality of care.

2 Methods

Utilizing the Johns Hopkins Nursing Evidence-Based Practice (EBP) model (Dearholt & Dang, 2012), a guiding practice question was developed: "What are the most efficacious interventions for the management of delirium in adult acute care patients?"

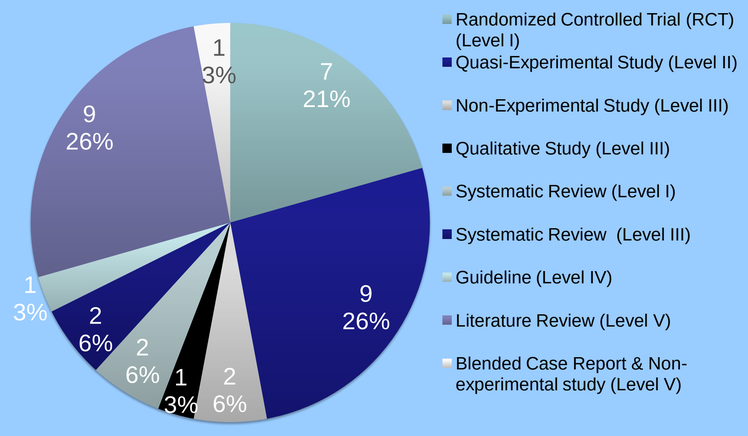
An extensive, multi-faceted literature search was conducted:
- Search of PubMed, CINAHL, Medline and the Cochrane Library using the following delirium-specific search terms: delirium, delirium/therapy (MESH term), acute care, intervention, therapy, and therapeutics. The search was limited to human subjects and excluded letters and editorials. While emphasizing research published in the past 5 years, we searched articles published from 2005—2013.
- Manual search of references lists plus internet search using Google Scholar to find additional relevant articles.
- Laura Hoofring, MSN ARNP-PMH, the psychiatric liaison nurse for the cancer center at JHH, was consulted to gain insight into other current sources of evidence related to our EBP question.

Titles and abstracts were screened and two reviewers independently assessed the methodological quality of each article. Data was extracted to summarize the study population, results, limitations and the level and quality of evidence of each study. Individual evidence summaries were synthesized and analyzed for patterns.

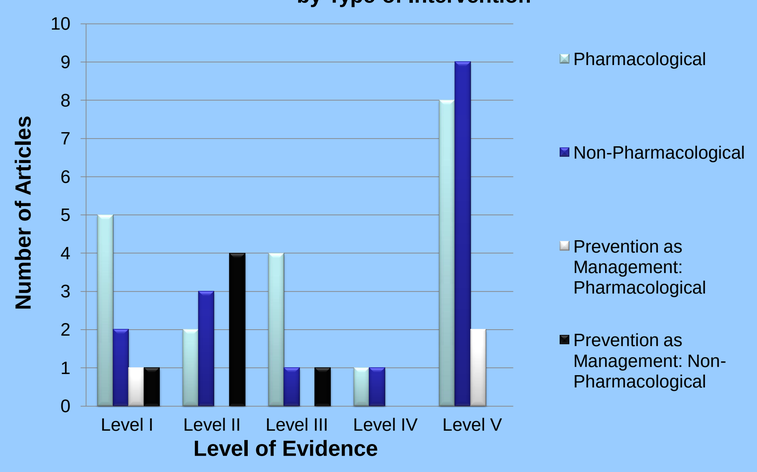
Analyses were compared against delirium interventions currently listed in the unit's delirium protocol to determine similarities and discrepancies. Recommendations for changes to unit delirium protocol were made based on the evidence.

3 Results

Results of Literature Search, by Article Type & Level of Evidence



Level of Evidence of Literature Search Articles, by Type of Intervention



Intervention Category	Intervention	Listed in Current Delirium Protocol	Listed in Literature Search (# of articles listing intervention)
Behavioral/interpersonal Strategies	Use a calm voice when talking to patient	X	1
	Avoid arguing with the patient	X	1
	Reorientation (frequent, to person, place and time, situation)	X	8
	Use simple concrete directions: one-step directions	X	
	Communication of delirium status to all team members; interdisciplinary collaboration	X	4
	Education and support of family and caregivers	X	4
	Brochure for patient/caregivers		1
	Poster on delirium at ward entrance		1
	Validation therapy balanced with reorientation of patient (tolerate, anticipate, don't agitate)		2
Patient Safety	Frequent interactions with nurse--hourly checks	X	
	Bed alarm	X	
	Ensure bed in low position	X	
	Ensure 2 side rails are in up position	X	
	Assess need for toileting--bowel and bladder function	X	2
	Nutrition/hydration: assess need for oral fluids if indicated	X	5
	Consider use of patient observer/sitter	X	1
	24 hour nursing observation		2
	Free of physical restraints		3
	Support adequate oxygenation		1
	Pain Management		3
	Minimal use of immobilizing equipment (bladder catheters, physical restraints)		6
Environment Optimization	Place delirium identifier on front of patient door to indicate patient is delirious	X	
	Patient and family delirium education fact sheet should be posted, unobstructed, in all patient rooms to facilitate patient and family involvement in the early identification of delirium	X	
	All staff must introduce themselves and their purpose for visiting the patient each time they enter the room	X	
	Work with patient to correctly interpret the environment	X	
	Eliminate unnecessary noise and distractions (auditory and visual)	X	5
	Minimize abrupt relocations	X	
	Minimize # of procedures and tests	X	
	Correct vision impairment	X	5
	Correct hearing impairment	X	5
	Utilize calendar, clock and identifier for time, date, patient name, location of hospital- a dry erase board should be mounted in each patient room. This orientation device should be within patient's view at all times	X	5
	Ensure adequate lighting in patient room both day and night	X	4
	Ensure consistent limited number of caregivers when possible	X	
	Avoid waking patient during the night; maintain sleep wake cycle	X	6
	Encourage family visits	X	
	Encourage family members to bring in familiar objects (pictures, blankets)	X	2
	Maintain a regular, daily routine	X	2
	Cognitive Stimulation/Rehabilitation		4
	Utilize interpreters		1
	Decrease staff to patient ratio (on a Close Observation Unit (COU))		1
	Diversion and relaxation strategies (music, hand massage)		4
	Encourage independence		1
	Dentures		1
	Non-pharmacological sleep protocol: warm drink, relaxation, back massage		2
	Reduce immobility, encourage Early Mobilization (ambulation or active ROM 3x daily), maintain mobility and self-care ability		6
Staff Education	Training specifically focusing on assessment, prevention, and treatment of delirium		4
	Education on caregiver-patient interaction, focusing on patients with delirium		1
	Guidance/mentorship for nursing staff 1x/month		3
	Staff Training on de-escalation of agitation		1

4 Conclusions

Several non-pharmacological interventions appeared frequently in literature but were not included in the Delirium Management protocol. These included:

- Cognitive stimulation and rehabilitation
- Validation of patient experiences while performing reorientation activities
- Minimal use of immobilizing equipment (e.g., restraints, bladder catheters)
- Early mobility
- Diversion and relaxation strategies (e.g., music, hand massage)
- Staff training specifically focusing on management of delirium
- Monthly guidance/mentorship for nursing staff re: delirium management

Overall, there is a lack of evidence-based research that tests the pharmacological and non-pharmacological management of delirium. No randomized controlled trials for delirium treatment have been conducted in the advanced cancer patient population. The wide variety of patient populations (elderly, oncology, anesthesiology, hip surgery) and study settings (acute care, critical care, medical inpatient, post-acute and residential settings) in the literature makes generalizations regarding the efficacy of delirium management interventions quite difficult. Further research is essential.

Evidence remains weak to support routine use of antipsychotic therapy for treatment of delirium in patients with cancer. The evidence is most clearly supportive of short-term, low dose use of antipsychotics (typical or atypical) for controlling symptoms of delirium, with close monitoring of possible adverse effects, esp. in older patients with multiple medical comorbidities. Evidence is also weak regarding the efficacy of delirium prevention interventions for the management of delirium itself.

There is little evidence from experimental studies on the effectiveness of non-pharmacological interventions on the management of delirium. However, non-pharmacological interventions described here appear to be safe and easily integrated into routine care. They should be important components of comprehensive delirium management strategies.

5 Future Directions

- Design and implement plan for integrating new interventions into current practice. Tailor recommendations to the unit culture.
- Design and conduct educational trainings for nursing staff.
- Design and implement a compliance audit with the new interventions
- Data collection and analysis of compliance audit
- Utilize Quality Improvement (QI) framework and implement tests of change cycles to determine most effective new interventions.
- Update new nurse orientation related to EBP delirium interventions
- Make recommendations to Johns Hopkins Hospital for changes to electronic documentation of delirium in acute care settings
- Disseminate EBP delirium interventions to other hospital units

6 References

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