

Early Identification and Development of an Enhanced Care Model for Hip Fracture Patients "At Risk" for Post Surgical Delirium (PSD)

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INTRODUCTION

Post-surgical delirium is common among elderly patients undergoing surgery. It is known to increase the length of stay and is associated with other short- and long-term consequences.^{1,2} In response to a concern from orthopedic surgeons, nurses and hospital administration regarding the high incidence of delirium in post-operative patients admitted with a hip fracture, a multidisciplinary team was formed to evaluate this issue and to design a quality improvement project.

METHODS

Objective: To prevent and/or reduce the negative outcomes of acute confusion in the elderly, post-operative hip fracture patients.

Targeted outcomes:

- Length of stay
- Use of restraints
- Falls
- Use of personal attendants
- Incidence of acute confusion.

Design: Quality improvement project with a historical comparison group.

Setting: Community based, not-for-profit hospital in Suburban California serving a largely elderly population.

Population:

- ED admission for hip fracture requiring surgical repair
- Age ≥ 70
- BUN/Cr ratio ≥ 20 and/or
- Serum albumin ≤ 2.5

Enhanced Care Group:

All patients meeting criteria admitted January through April 2012 (n=25)

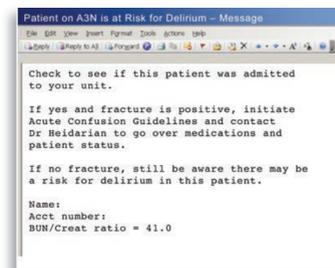
Historical Comparison Group:

All patients meeting criteria admitted January through April 2009 (n=34)

Interventions:

Identifying Patients at Risk for PSD

The project team worked with the information services department to program a "Care Alert" that was triggered when there was a patient in the ED meeting the specified

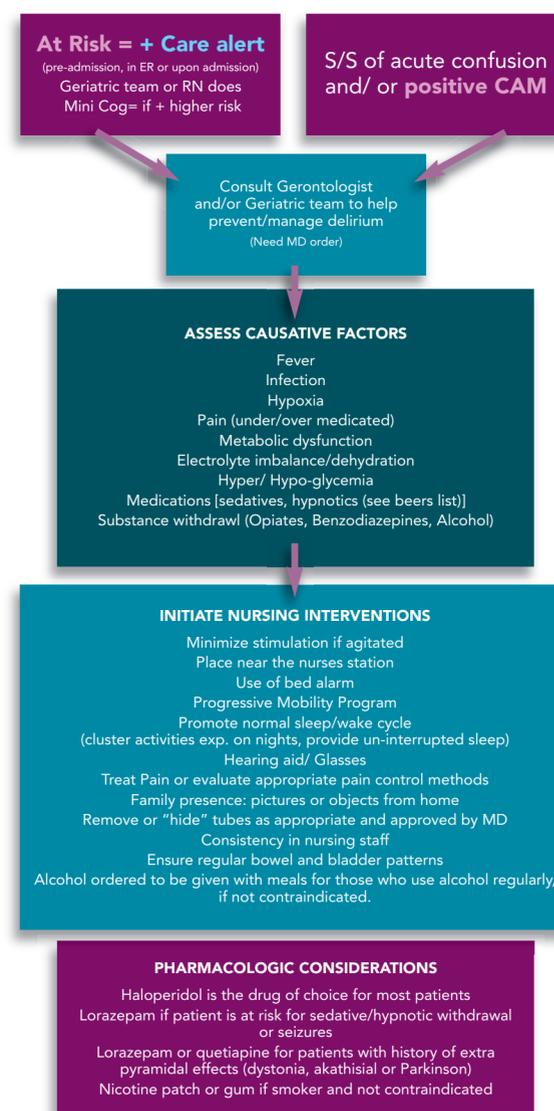


Actual "Care Alert" e-mail notification

criteria. This alert sent an email notification to the program geriatrician, all inpatient nursing directors, charge nurses on the nursing units and house supervisor/bed control staff member.

Geriatrician Review

The team geriatrician contacted the ED to confirm that the patient met criteria, reviewed medications, lab values and consult with the anesthesiologist. The geriatrician also contacted nursing staff to provide guidance on medication choices and care planning.



Nursing Interventions

Nurses followed an Acute Confusion Nursing Protocol which consisted of reviewing medication profiles for high-risk medications, assessing potential underlying causes of delirium, initiating nursing interventions when appropriate, and the evaluating response to interventions. General nursing care emphasized early ambulation, orientation to time and place (clocks, glasses, hearing aids), and sleep hygiene.

RESULTS

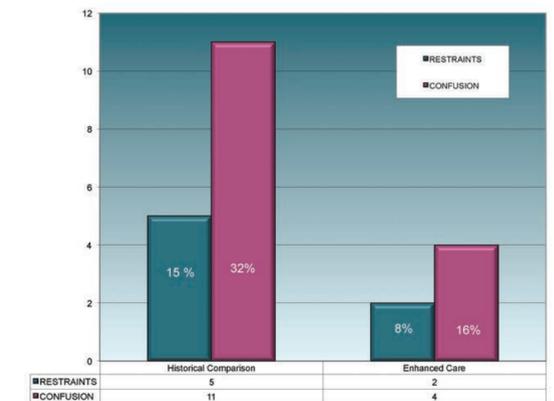
There was an overall reduction in the emergence of acute confusion among the patients in the enhanced care group when compared with the historical comparison group. There was a similar reduction in the use of restraints. While the use of personal assistants was low overall, they were not used in the enhanced care group. Only 1 fall was recorded. Length of stay was similar in both groups.

The differences noted are not statistically significant, probably due to the small numbers. Groups were equivalent for the variables measured.

OUTCOME	ENHANCED CARE GROUP (N=25)	HISTORICAL COMPARISON GROUP (N=34)
Acute confusion	4 (16%)	11 (32%)
Use of restraints	2 (8%)	5 (15%)
Falls	1 (.04%)	0 (0%)
Use of personal assistants	0 (0%)	1 (2.9%)
Length of stay with acute confusion	6.5 days	6.6 days
Length of stay without acute confusion	4.6 days	4.9 days

CONCLUSIONS

Developing a method to identify high-risk patients preoperatively and instituting an enhanced care protocol, in our evaluation, may improve outcomes in patients at risk for post-surgical delirium. While the results are not statistically significant, they are clinically meaningful and provide direction for future study.



CHALLENGES AND LIMITATIONS

- There was no consistent place for nurses to record changes in cognition for the comparison group. CAM assessment was built into the electronic health record during the project.
- Cooperation among nurses for implementing the nursing care protocols varied
- Extensive chart review was required to identify those with acute confusion, particularly in the comparison group
- Data collection processes were time consuming and tedious with limited resources for data collection
- There were varying levels of cooperation among attending physicians
- Other organizational priorities often competed for nurses' attention

NEXT STEPS

- Continue to educate RN's on acute confusion protocols and CAM documentation
- Build CAM assessment into electronic medical record
- Consider other patient populations that may benefit from this care model

1 Saravay SM, Kaplowitz M, Kurek J et al. How do delirium and dementia increase length of stay of elderly general medical patients? *Psychosomatics* 2004;45:235-242.
 2 Bickel H, Grading R, Kochs E et al. High risk of cognitive and functional decline after postoperative delirium: a three-year prospective study. *Demet Geriatr Cogn Disord* 2008;26:26-31.

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