Frailty, Cognitive Decline and Delirium. Is there a Connection?

A Process Improvement Project to Improve Care of the Geriatric Trauma Patient

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Introduction

TRAUMA is the fifth leading cause of death in patients over the age of 65 and the physiologic changes that occur with aging impact morbidity and mortality. Delays in recognizing the unique needs of the older trauma patients may result in suboptimal care. Frailty screening is shown to be superior to age in predicting short term outcomes and cognitive impairment is a risk factor for the development of postoperative delirium. Delirium is a significant independent determinant of hospital length of stay, nursing home placement, functional and cognitive decline. Delirium affects 14% to 56% of all elderly patients. The number of geriatric trauma patients admitted to Christiana Hospital continues to increase and requires geriatric focused trauma care.

Rational

- Providing evidenced based best practice care to geriatric trauma patients includes screening for frailty, cognitive decline and delirium during hospitalization.
- Prevention and/or early identification of delirium will improve patient outcomes, decreasing length of stay, morbidity and mortality.

Purpose/Specific Aims

- Determine if an association exists between a positive frailty and/or cognitive screen and the incidence of delirium.
- Frailty and cognitive screens are performed using the validated FRAIL screen and AD8 screen on all patients age 70 and older admitted to the trauma service.
- The Confusion Assessment Method Screen (CAM) is used to assist with the diagnoses of delirium as well as a clinical examination by a provider.
- Provide best practice geriatric focused care to the elderly trauma patients.

Context

- Screening for frailty, cognitive decline and delirium with the CAM screen in the standard of care for trauma patients age 70 and older.
- The FRAIL screen is a 5 questions screen addressing fatigue, resistance, ambulation, illness, and unintentional weight loss. A score of 3 or more indicates a positive screen.
- The Ascertain Dementia 8 item Informant Questionnaire (AD8 TM) has 8 questions pertaining to memory and cognitive function. A score of more than 2 yes responses is positive.
- The Confusion Assessment Method (CAM) is a screen which address changes in mental status and is used to diagnose delirium.
- The CAM includes the onset of change, inattention, disorganized thinking and altered level of consciousness. The screen is reported as positive or negative.
- Ethical Considerations - IRB obtained, retrospective review, secure data collection.

Analysis

- Quantitative analysis/ Descriptive Statistics / Significance Level of p = < 0.05 was used for this study.
- Red CAP was used to organize data from the chart review.
- Associations were described by 2x2 tables, giving the odds ratio with 95% confidence interval and Fisher’s 2-sided test.
- A t-test compared the length of stay between patients with and without a diagnoses of delirium.
- A kappa-based measure was used for CAM and diagnoses of delirium.

Project Results

- 54 – patients had a positive FRAIL Screen.
- There was NO statistically significant association between frailty and a diagnoses of delirium (OR = 1.7 (0.3, 10.9), p=0.73).
- 54 – patients had a positive AD8 Screen. There was NO statistically significant association between a positive or negative frailty and cognitive decline and a diagnoses of delirium (OR = 3.0 (0.5, 31.4), p=0.29).
- 44 – patients had both a positive AD8 Screen. FRAIL. There was NO statistically significant association between having both a positive frailty and cognitive diagnosis and a diagnoses of delirium (OR = 4.5 (0.5, 208.9), p=0.16).
- 9 of 97 patients had a diagnoses of DELIRIUM.
- 3 of the 9 patients had a documented negative CAM screen on the 6th had a documented positive CAM screen.
- The association between a positive CAM screen and a diagnoses of delirium was statistically significant kappa 0.49 (0.307, 0.69) p=0.001
- The mean LOS for patients diagnosed with delirium was 15 days, versus 8 days for patients without delirium with a (p<0.02).

Theoretical Framework

<table>
<thead>
<tr>
<th>Stage</th>
<th>Definition</th>
<th>Examples</th>
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<tbody>
<tr>
<td>1.</td>
<td>Discovery</td>
<td>e.g., new knowledge is produced</td>
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<tr>
<td>2.</td>
<td>Research</td>
<td>e.g., new knowledge is validated</td>
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<td>3.</td>
<td>Evidence</td>
<td>e.g., new knowledge is disseminated</td>
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<td>4.</td>
<td>Translation</td>
<td>e.g., new knowledge is implemented</td>
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<td>5.</td>
<td>Practice</td>
<td>e.g., new knowledge is integrated</td>
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<tr>
<td>6.</td>
<td>Outcome Evaluation</td>
<td>e.g., outcomes are evaluated</td>
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Interpretation/Discussion

- Only 9 patients of 97 had a diagnoses of delirium.
- Although not statistically significant 8 of the 9 patients diagnosed with delirium had a positive frailty and/or cognitive screen.
- The length of stay for patients with delirium was 15 days, whereas 8 days for patients without delirium with a (p<0.02).

Limitations/Implications

- Small sample size, not a random sample, dependent on a documented FRAIL and AD8 screen in the chart.
- Education of healthcare professionals on delirium.
- Continued monitoring of patients for signs of delirium using CAM.
- Continued studies on patients outcomes with positive frailty and cognitive decline and referral to outpatient services.

Conclusion

- The number of geriatric trauma patients will continue to increase over the next decade.
- Evidenced based Geriatric focused trauma care is needed for the best patient outcomes for this population.
- Palliative Care Consultation may assist with management of delirium.

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