Effect of Postoperative Delirium on Outcomes After Cardiac Surgery

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BACKGROUND

• Postoperative delirium is a common condition that leads to poor outcomes after surgery.

• Studies have been conducted on the effect of postoperative delirium on outcomes after non cardiac surgery but there are very few studies examining its effect on outcomes after cardiac surgery.

• It is very important to study postoperative delirium after cardiac surgery because of its impact on the postoperative course of patients.
PURPOSE

• This study was conducted to determine the effect of postoperative delirium on outcomes after cardiac surgery.

• Specifically, it also sought to determine the relationship of certain risk factors and the occurrence of postoperative delirium after cardiac surgery
RESEARCH QUESTION

• Is there a relationship between the development of postoperative delirium after cardiac surgery and the following outcomes:
  
a. occurrence of falls?
b. length of stay after surgery?
c. discharge to a skilled nursing facility/ rehabilitation center/ long term acute care?
d. discharge to home with home health?
e. utilization of inpatient physical therapy?
METHODS

• **Research Design:** Descriptive correlational design

• **Sample:** 656 patients who had cardiac surgery from January 10, 2011 to October 30, 2011 at Mission Hospital.

• Patients had the following procedures performed with the cardiopulmonary bypass machine: CABG, valve repair/replacement, and CABG with valve repair/replacement.
METHODS

• The sample consisted of 436 males and 220 females between the ages of 29 and 91. 161 patients (24.54%) developed postoperative delirium.

• Charts were reviewed retrospectively and data were analyzed using t-test and Fisher’s exact test.
RESULTS

The following demographic variables were found to be related to postoperative delirium after cardiac surgery:

a. Age
b. Cardiopulmonary bypass time
c. Number of pre-existing medical conditions
d. Past medical history of: arrhythmias, CHF, and renal disease
e. Type of surgery: CABG and CABG with valve surgery
f. Medications given after surgery: PO Benzodiazepines, IV Toradol, Ambien
## RESULTS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Postoperative Delirium</th>
<th>No Postoperative Delirium</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Age</td>
<td>71.4</td>
<td>9.0</td>
<td>64.9</td>
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<tr>
<td>No. of Comorbidities</td>
<td>3.51</td>
<td>1.74</td>
<td>3.02</td>
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<tr>
<td>CP Bypass Time</td>
<td>117.3</td>
<td>52.5</td>
<td>106.5</td>
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</tbody>
</table>
## RESULTS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Postoperative Delirium</th>
<th>No Postoperative Delirium</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hx of Arrhythmias</td>
<td>28.57</td>
<td>17.58</td>
<td>.003</td>
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<tr>
<td>Hx of CHF</td>
<td>14.91</td>
<td>8.89</td>
<td>.037</td>
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<tr>
<td>Hx of Renal Disease</td>
<td>19.25</td>
<td>11.11</td>
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<td>PO Benzodiazepine</td>
<td>42.24</td>
<td>33.13</td>
<td>.010</td>
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<tr>
<td>IV Ketorolac</td>
<td>50.31</td>
<td>41.62</td>
<td>.017</td>
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<tr>
<td>Ambien</td>
<td>6.21</td>
<td>5.25</td>
<td>.026</td>
</tr>
</tbody>
</table>
RESULTS

There is a Relationship Between Postoperative Delirium After Cardiac Surgery and Occurrence of Falls (p= .001)
RESULTS

There is a Relationship Between Postoperative Delirium After Cardiac Surgery and Length of Stay ($p = .000$)

- Postoperative Delirium: 8.30 days
- No Postoperative Delirium: 5.54 days
RESULTS

There is a Relationship Between Postoperative Delirium After Cardiac Surgery and Discharge to a Nursing Facility (p=.000)

- Postoperative Delirium: 44.72%
- No Postoperative Delirium: 11.31%
RESULTS
There is a Relationship Between Postoperative Delirium After Cardiac Surgery and Discharge to Home with Home Health (p=.013)

- Postoperative Delirium: 22.36%
- No Postoperative Delirium: 13.74%
RESULTS

There is a Relationship Between Postoperative Delirium After Cardiac Surgery and Utilization of Physical Therapy

($p = .000$)

![Bar chart showing percentages of Postoperative Delirium and No Postoperative Delirium with 64.60% and 22.22% respectively.]
CONCLUSIONS

• Patients who develop postoperative delirium are more likely to experience poorer outcomes.

• They are more likely to fall, be discharged to a nursing facility, be discharged to home with home health, and require inpatient physical therapy. They are also most likely to have a longer postoperative hospital stay.
NURSING IMPLICATIONS

• There is a need for the development of an extensive care plan that involves prevention and treatment of postoperative delirium after cardiac surgery.

• This will help improve the postoperative course and outcomes of cardiac surgery patients.