BMI as Predictor for 30-day and 90-day Readmission for all Causes After Posterior Cervical Decompression and Fusion Surgery

Poster #1687

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Disclosures

- Nothing to disclose
Introduction

• Obesity has previously been identified as a risk factor for postoperative complications in spine surgery.

• Our institution cares for a medically underserved community with among the worst health outcomes in New York State.

• We sought to study the association between BMI and 30-day and 90-day postoperative complications in patients undergoing posterior cervical decompression and fusion (PCDF) at our institution.
Methods

• Neurosurgical records from Montefiore reviewed for patients undergoing PCDF from 2013 to 2019

• Inclusion criteria:
  – Age ≥18 years of age
  – PCDF for degenerative spine disease

• Patient demographic data, comorbidities, pre-operative labs, operative data, and readmission data were collected.

• Readmission data was collected for the 30-day and 90-day discharge period with readmissions causes classified as wound infection/dehiscence, non-wound related infections, and non-infection related causes.
Results

- 93 patients met inclusion criteria
- Mean age was 64.9 years and 57% of patients were male
- Nine patients (9.7%) were readmitted within 30 days and fifteen patients (16.1%) experienced a 90-day readmission
- Readmission was most commonly due to non-infectious causes (6.5% 30-day and 7.5% 90-day incidence), followed by wound infection/dehiscence (3.2% 30-day and 5.4% 90-day incidence), and non-wound related infections (2.2% 30-day and 5.4% 90-day incidence).
Results – Univariate analysis

• BMI ≥35 was associated with 30-day and 90-day readmissions (p=0.002 and p=0.007, respectively) on univariate analysis
Results – Multivariate Logistic Regression Model

Table 1: Multiple logistic regression to analyze 30-day readmissions controlled for age, BMI, and statistically significant differences between the groups. Non readmitted patients are used the reference group.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>OR</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.96</td>
<td>0.89 - 1.05</td>
<td>0.372</td>
</tr>
<tr>
<td>Male</td>
<td>3.12</td>
<td>0.47 - 30.44</td>
<td>0.268</td>
</tr>
<tr>
<td>BMI ≥35</td>
<td>20.66</td>
<td>3.33 - 192.93</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Table 2: Multiple logistic regression to analyze 90 day readmissions controlled for age, gender, and statistically significant differences between the groups. Non readmitted patients are used as a base of comparison.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>OR</th>
<th>95% CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.99</td>
<td>0.94 - 1.06</td>
<td>0.869</td>
</tr>
<tr>
<td>Male</td>
<td>4.29</td>
<td>0.92 - 31.98</td>
<td>0.093</td>
</tr>
<tr>
<td>BMI ≥35</td>
<td>13.50</td>
<td>2.74 - 99.93</td>
<td>0.003</td>
</tr>
</tbody>
</table>
Conclusions

- Patients with BMI \(\geq 35\) face an elevated risk of 30-day and 90-day readmission after PCDF.
- Surgeons should consider a patient’s BMI when determining if a patient is an appropriate candidate for PCDF.