Total Hip Arthroplasty: COPD and its Effect on Postoperative Complications
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Introduction

- This study aims to determine differences in short-term postoperative complications after undergoing Total Hip Arthroplasty, comparing patients with COPD to those without.

- The demand for Total Hip Arthroplasty has increased rapidly and continues to due to high success rates of this procedure and the growing aging population.

- Although COPD has been linked to negative postoperative outcomes across several surgeries, little has been investigated regarding postoperative complications in patients with COPD following a Total Hip Arthroplasty.

Methods

- In total, 74,814 patients were included to analyze how COPD contributes to rates of postoperative complications in primary Total Hip Arthroplasty.

- Data was obtained from the National Surgical Quality Improvement Project Database (NSQIP) years 2005-2014, with readmission/reoperation data beginning in 2011. Total Hip Arthroplasty cases were selected out of the database using current procedural terminology (CPT) code 27130.

- Complications were stratified by operative complications, which are directly related to the surgical procedure, and non-operative complications, which are not directly connected to the surgery.

Results

- The amount of overall complications in primary Total Hip Arthroplasty was 14,082. Out of the total 74,814, the complication rate from primary THA was found to be 18.82%.

- On multivariate analysis and after controlling for contributing comorbidities, COPD was found to be an independent predictor of: superficial surgical site infection (SSI), pneumonia, reintubation, failure to wean, urinary tract infection, needing a postoperative transfusion, and sepsis. COPD also independently predicted whether a patient would be discharged home or not.

- Over 15 million people are diagnosed with COPD in the United States, and it is currently the third leading cause of death.

- The purpose of the current study is to bring to a discussion the most common postoperative complications those with COPD face after a Total Hip Arthroplasty. This will help recognize surgery and patient specific risk factors that account for complications, and subsequently help target high-risk patients in efforts to reduce cost and improve patient care.

- COPD is linked to poorer postoperative outcomes in our study, and as a result, higher health service costs.

- Identifying complications that can arise following a Total Hip Arthroplasty COPD patient is a critical first step in targeting precise perioperative modifications to improve surgical outcomes.

- Additional research is needed to determine optimal practices for stratifying and mitigating these risks for patients.

Complications

<table>
<thead>
<tr>
<th>Complications</th>
<th>Odds Ratio (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superficial SSI</td>
<td>1.74 (1.24, 2.43)</td>
<td>0.001</td>
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<tr>
<td>Pneumonia</td>
<td>3.69 (2.67, 5.10)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Re-intubation</td>
<td>2.65 (1.69, 4.16)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Failure to Wean &gt;48 Hours</td>
<td>3.45 (1.89, 6.29)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Urinary Tract Infection</td>
<td>1.46 (1.13, 1.90)</td>
<td>0.004</td>
</tr>
<tr>
<td>Transfusion</td>
<td>1.19 (1.07, 1.31)</td>
<td>0.001</td>
</tr>
<tr>
<td>Sepsis</td>
<td>1.97 (1.29, 3.01)</td>
<td>0.002</td>
</tr>
<tr>
<td>Non-Home Discharge</td>
<td>1.50 (1.37, 1.64)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Discussion

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References: