



Risk Factors for Readmission Following Anterior Lumbar Fusion

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Introduction

Several studies have reported good long-term outcomes following anterior lumbar interbody fusion (ALIF). Though hospital readmissions are associated with increased morbidity and mortality, consistent risk factors have not been identified in patients following ALIF. The American College of Surgeons National Surgical Quality Improvement Program (NSQIP) provides a large multicenter database and allows for the analysis of potential risk factors.

Methods

This was a retrospective analysis of prospectively collected data from the NSQIP database. Patients > 18 years old undergoing elective ALIF between 2011 and 2012 were included. Patient baseline factors, perioperative data, preoperative labs, American Society of Anesthesiologists (ASA) scores and post-operative events were recorded. Patients were either 1) readmitted, or 2) not readmitted and the two cohorts were compared using multivariate logistic regression analysis with significance defined as $p < 0.05$. Odds ratio (OR) was calculated with a 95% confidence interval.

Results

During the study period 336 patients met inclusion criteria and readmission rate was 3.3% (11/336). Higher rates of readmission were associated with obesity class III (BMI > 40) (16.7%, $p=0.008$), insulin dependent diabetes (25%, $p=0.001$) and alcohol use (>2 drinks/day) (20%, $p=0.002$). Other comorbidities, ASA score, prior functional status and operative variables were not significant for readmission ($p>0.05$). Readmission was associated with any complication ($p=0.0008$), wound complications ($p<0.0001$), reoperation ($p<0.0001$) and sepsis ($p<0.0001$). Independent predictors of readmission were obesity class III (OR 15.6, 2.6-95), alcohol use (OR 17, 2.4-118) and female gender (OR 4.3, 0.9-21.5).

Learning Objectives

Our objective was to analyze risk factors for readmissions following ALIF and associated complications and reoperation rates within 30 days post-operatively

Conclusions

This study demonstrated that patient comorbidities, BMI, and alcohol use were associated with readmission in patients undergoing ALIF. Obesity, alcohol use and female gender were independent predictors of readmission. As expected, readmission was associated with higher rates of all complications and reoperations.