

Introduction

Lumbar spine fusion surgery has blood transfusion rates as high as 30% post-operatively. It is hypothesized that transfusions lead to an immunomodulatory effect, resulting in a relatively immunocompromised state, which can then result in developing surgical site infections (SSI), urinary tract infections (UTI), and overall post-operative infections. Our objective was to explore to what extent transfusions are associated with postoperative infections while adjusting for existing comorbidities.

Methods

Retrospective review of prospectively collected data in the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) from 2006 to 2014. Patients with primary single level lumbar posterior decompression for an elective degenerative lumbar condition were identified. Patients with cancer, emergency surgery, dialysis or renal failure, paralysis, or pre-existing spine infection were excluded. Data was analyzed using a multivariate logistic regression

Results

A total of
29,598
patients were
identified:
1,480 (5%)
underwent a
transfusion.
Older age,
female
gender, lower
preoperative

Future Directions

Several steps that should be taken moving forward include identifying confounding variables that should be analyzed and grouping infection outcomes. Also, these analyses should be compared to machine based learning models. Strategies must be implemented to decrease transfusions overall in the perioperative period. Furthermore, improvement of pre-op optimization for elective spine surgery.

Conclusions

Transfusions in patients undergoing single level lumbar posterior decompression surgery were independently associated with SSIs and total infections. Identification of risk factors for transfusion may be helpful in the perioperative optimization strategies for decreasing transfusions, which may in turn lower the risk of SSI and total infection overall.