

**Introduction**

Obesity is hypothesized to contribute to poor outcomes following spine surgery. However, no study has specifically examined the impact of obesity on outcomes following arthrodesis for adult patients with idiopathic scoliosis.

**Methods**

We performed a retrospective cohort study of 7,401 adult patients (median age, 58; 73.8% female; mean follow up 806.3 days) in the MarketScan database who underwent arthrodesis for idiopathic scoliosis between 2007-2014. We developed multivariable regression models of readmission, surgical revision, complications, and costs, with obesity as the key explanatory variable. These models were adjusted for sex, geography, age, number of levels fused, instrumentation, use of interbody device, and receipt of bone morphogenetic protein.

**Results**

We found that 13.5% of patients had fusions spanning > 8 vertebral levels, 12.2% received BMP, and that 6.6% patients had obesity as a comorbidity. The mean length of stay was 5.5 days, 13.4% of patients were readmitted within 30 days, and 10.3% of patients underwent a revision procedure within 18 months. Multivariable logistic regression models revealed that patients with co-morbid obesity were more likely to be readmitted within 30 days (HR=1.36, P<0.05) and were more likely to receive a chronic pain diagnosis following surgery (HR=1.58, P<0.05). However, patients with co-morbid obesity did not have significantly different complication or long-term revision rates. With regard to socioeconomic factors, we found no differences with regard to length of stay or cost of index surgery. We did observe a trend towards significance for the impact of obesity on two-year payments ( $\beta$ =\$5836.60, P=0.07)

**Conclusions**

Co-morbid obesity impacts key quality and clinical outcomes. Surgeons should be aware of these possible associations in order to improve pre-operative decision-making and patient counseling.

**Learning Objectives**

1. Co-morbid obesity impacts key quality and clinical outcomes in adult patients with idiopathic scoliosis.
2. Surgeons should be aware of these possible associations in order to improve pre-operative decision-making and patient counseling.