



# Controlled Diabetes Mellitus in Patients undergoing Degenerative Lumbar Spine Surgery

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## Introduction

DM is a highly prevalent systemic disease that has been shown to increase morbidity and mortality after spine surgery. A few studies have demonstrated negative effects on DM patients who undergo lumbar spine procedures, but whether controlled DM influences surgical outcome is still unknown.

## Methods

The Nationwide Inpatient Sample was queried from 2002 to 2011. Patients who underwent lumbar spine surgery for degenerative conditions were identified using the ICD-9-CM codes. DM population was determined by diagnosis codes indicating controlled diabetes regardless of secondary manifestations. Patient demographics, surgical procedures, length of stay (LOS), total hospital costs, acute complications and postoperative outcomes were assessed. Chi-squared test was used for analysis of categorical data and Student t test was used for continuous variables.

## Results

A total of 403,629 patients with controlled DM underwent degenerative lumbar spine surgery from 2002-2011. DM patients were older (64.5 years vs. 57.9 years for no DM,  $p < .0001$ ) and more likely to be male (49% vs. 46.8% in for no DM,  $p < .0001$ ). Most patients had private insurance (55.4%), while Medicare (30.7%) was the second most used form of payment. There was a significant increase in the prevalence of postoperative cardiac (0.96% vs. 0.71% for no DM,  $p < .0001$ ), respiratory (0.98% vs. 0.84% for no DM,  $p < .0001$ ), and genitourinary (1.34% vs. 1.01% for no DM,  $p < .0001$ ) complications in controlled DM patients. Also, significantly higher prevalence of deep venous thromboembolism (1.42-fold), postoperative infection (1.5-fold) and acute postoperative hemorrhagic anemia (1.2-fold) were observed. There was an increase mean LOS (4.1 days vs. 3.6 days,  $p < .0001$ ) and mortality rate was higher as well (0.2% vs. 0.11% for no DM,  $p = 0.001$ ).

## Conclusions

Patients undergoing degenerative lumbar spine procedures with controlled DM had significantly increased rates of major acute perioperative complications. DM was found to significantly increase mortality and LOS.

## Learning Objectives

Identify DM as a risk factor in lumbar spine surgery

## References

The Nationwide Inpatient Sample 2002-2011