



The Impact of Diabetes on In-Hospital Morbidity and Mortality following Anterior Cervical Discectomy and Fusion: A Population-Based Study

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Introduction

The purpose of our study is to examine in-hospital morbidity and mortality for patients with and without diabetes mellitus (DM) following anterior cervical discectomy and fusion (ACDF).

Methods

The Nationwide Inpatient Sample (NIS) administrative database was queried for the years 2002 – 2011. All adult patients undergoing an elective ACDF for degenerative spine disease were included. Patients were divided into three cohorts: non-diabetics, patients with DM and patients with diabetes with a chronic complication (DMCX). All cohorts were analyzed to compare in-hospital morbidity and mortality, length of stay and total hospital charges.

Results

A total of 189,981 admissions were examined, with 23,302 (12.26%) patients with DM and 1,548 (0.81%) patients with DMCX. Patients with DM and DMCX were on average older ($P < 0.001$) and with a higher median number of comorbidities (2 and 3, respectively) when compared to patients without diabetes (median of 0 comorbidities; $P < 0.001$). Patients with DM and DMCX had significantly increased rates of in-hospital complications (3.52% and 7.24%, respectively) when compared to non-diabetic patients (1.79%; $P < 0.001$). Patients with DM had a 0.14% mortality rate, patients with DMCX had a 0.26% rate and non-diabetics had a 0.05% mortality rate ($P < 0.001$). Both average length of stay and total hospital charges were also significantly higher in both DM and DMCX cohorts. After extensive adjustment for patient characteristics, however, DM and DMCX were not found to be independent risk factors for in-hospital morbidity or mortality.

Conclusions

In this study of an administrative database, patients with DM and DMCX had significantly higher rates of complications and in-hospital mortality following ACDF. After extensive adjustment analysis,

Learning Objectives

- Patients with DM and chronic complications of DM were found to be at increased risks of in-hospital morbidity and mortality following ACDF.
- After extensive adjustment for patient characteristics, regression analyses revealed that diabetes itself was not an independent risk factor for complications or mortality.
- The increased age and overall comorbidity burden in patients with diabetes was most likely driving the observed trend.

References