Factors Predicting Opioid Dependence in Patients Undergoing Surgery for Degenerative Spondylolisthesis: Analysis from Market Scan Database

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Introduction

The aim of our study was to identify risk factors associated with opioid dependency in patients undergoing surgery for Degenerative Spondylolisthesis (DS).

Methods

We queried the Market Scan database to investigate factors affecting post-surgery opioid use from 2000-2012. The outcome of interest was opioid dependency and defined as continued opioid use or >10 opioid prescriptions, diagnosis of or prescription for opioid dependency disorder in the period of one year prior to or in the period of 3-15 months following the procedure. Comparisons of outcomes were performed using non-parametric 2group tests and generalized regression models.



Flowchart showing the inclusion and exclusion criteria used for extracting data from Market scan database.

Results A cohort of 10708 was identified from the database. A majority of patients were females (n=6975, 65.1%) and median age was 61 years (range 54-69 years). A majority of patients had decompression with fusion (n=10068, 94%) and had multilevel procedures (n=8123, 75.9%). 14.85% (n=1591) of patients were identified to have opioid dependency within 12 months prior to the index surgical procedure and 9.90% (n=1060) were identified to have opioid dependency within 3-15 months after the procedure. Of all the variables, prior opioid dependency (OR: 16.29; 95% CI: 14.10, 18.81; p<0.001) and young age (1-year increase in age, OR: 0.972; 95% CI: 0.963-0.980; p<0.001) were independent predictors of opioid dependency following surgery for DS. The use of fusion was not associated with opioid dependency following the procedure (p=0.8396). Following surgery for DS, patients were likely to become opioid independent than they are to become dependent (8.54% vs. 3.58%, p <0.001).

Conclusions

The majority of patients underwent fusion for DS. Surgical decompression with fusion was not associated with increased risk of post-surgery opioid dependency in patients with DS. Overall, opioid dependence was reduced by 4.96% after surgery for DS. Prior opioid dependency in a young patient is associated with increased risk of opioid dependency following surgery for DS.



Bar graph showing the temporal trends (2001-2011) in the incidence of post surgery opioid dependency among patients who were prior opioid dependent vs. prior non-opioid dependent.



Flowchart showing changes in Opioid dependency following surgery for DS.



Bar graph showing the percentage of patients who were opioid dependent postsurgery in the combined cohort, patients who underwent decompression without fusion and patients who underwent decompression with fusion for DS.

Learning Objectives

By the conclusion of this session, participants should be able to 1) Identify the risk factors associated with opioid dependency following surgery for degenerative spondylolisthesis. 2) Describe the impact of surgery on opioid dependency in patients with DS.3) Discuss the national trends and health care burden associated with opioid dependency in this patient cohort.

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