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Introduction

The objective of this study is to determine the minimum clinically important difference (MCID) associated with surgical treatment for lumbar spondylolisthesis

Methods

We queried the Quality Outcomes Database registry from July 2014 through December 2015 for patients undergoing posterior lumbar surgery for grade I degenerative spondylolisthesis. Recorded patient reported outcomes included Oswestry Disability Index (ODI), EQ-5D, numeric rating scale (NRS)-leg pain and -back pain. Anchor-based (using the NASS satisfaction scale) and distribution-based (half a standard deviation, small Cohen's effect size, standard error of measurement and minimum detectable change (MDC)) methods were used.

Results

A total of 441 patients (80 laminectomies alone, 361 fusions) from 11 participating sites were included in the analysis. Change in functional outcomes scores between baseline and 1-year were 23.5 ± 17.4 points for ODI, 0.24 ± 0.23 for EQ-5D, 4.1 ± 3.5 for NRS-LP, and 3.7 ± 3.2 for NRS-BP. The different calculation methods generated a range of MCID values for each PRO: 3.3 to 26.5 points for ODI, 0.04 to 0.3 points for EQ-5D, 0.6 to 5.5 points for NRS-leg pain and 0.5 to 4.1 points for NRS-back pain. The MDC approach appeared to be the most appropriate for calculating MCID because it provided a threshold greater than the measurement error and was closest to the average change difference between the satisfied and not satisfied patients. On subgroup analysis, the MCID thresholds for laminectomy alone patients were comparable to those undergoing arthrodesis as well as the entire cohort.

Conclusions

Based on the MDC method, the MCID values are 14.3 points for ODI, 0.2 points for EQ-5D, 1.7 points for leg pain, and 1.6 points for back pain.

Learning Objectives

By the conclusion of this session, participants should be able to:

1) discuss the different methods for calculating MCID

2) understand the difference between anchor- and distribution- based methods

3) define the MCID for patients with lumbar degenerative grade I spondylolisthesis.

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