

Background/

Introduction:

Patients with spinal stenosis and degenerative spondylolisthesis are treated surgically with decompression and in selected cases with additional fusion. The role of subgroups that can benefit from fusion surgery in these patients are controversial. Purpose of the study: To investigate prognostic factors and possible treatment effect modifiers in surgically treated patients with spinal stenosis and degenerative spondylolisthesis. Materials and

Methods:

This is secondary analysis of data from 267 patients from a randomized multicenter trial, the Norwegian Degenerative Spondylolisthesis and Spinal Stenosis (NORDSTEN—DS) trial. Patients were randomized to decompression alone or decompression with instrumented fusion. Patients with degenerative scoliosis, severe foraminal stenosis or previous performed surgery were excluded. The primary outcome was a reduction of 30% or more from baseline to 2-years follow-up on the Oswestry Disability Index (ODI). Predefined potential prognostic factors consisting of radiological and clinical baseline variables were selected in accordance with former literature and are published in a protocol article. Analyses of potential prognostic factor were performed within the whole cohort, and treatment effect modifiers within each treatment group. Data were analyzed using univariate and multiple logistic regression analyses.

Results:

For the whole cohort more leg pain and less comorbidity (American Society of Anesthesiologists Classification (ASA)) at baseline were associated with the primary outcome (OR =1.23 95% confidence interval (CI) [1.02-1.50] and OR =0.23, 95% CI [ 0.06-0.86], respectively). Back pain had a negative confounding effect in the presence of leg pain in the final model, indicating worse outcome in the presence of more back pain. We did not identify any clinical or radiological variables at baseline modifying the treatment effect. Conclusions: In this study on patients with spinal stenosis and degenerative spondylolisthesis, patients with less comorbidity and more leg pain had better outcome after surgical treatment when the whole cohort of patients was analyzed. Back pain was a negative confounder of outcome. None of the commonly used variables defined as instability or any other preselected baseline characteristics modified the treatment effect. Hence, we could not identify patients most appropriate for fusion.