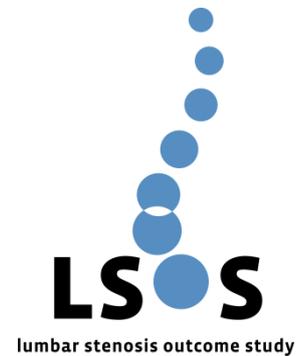


Abstract

Cost Effectiveness of Conservative versus Surgical Treatment Strategies for Lumbar Spinal Stenosis - A Prospective Multicenter Analysis in the Swiss Setting



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Purpose

A detailed understanding of the cost-effectiveness of different treatment approaches for lumbar spinal stenosis (LSS) is warranted to define evidence-based guidelines. Previous studies evaluated the cost per QALY based on data retrieved via a systematic literature review instead of prospective data. While several studies use the ODI or SF-6D, the EQ-5D is considered as the ideal assessment tool to calculate QALY. The aim of the present study was to evaluate the cost effectiveness of conservative versus surgical treatment strategies for LSS, based on a prospective multicenter study in the Swiss setting, calculated via EQ-5D questionnaires.

Methods/Materials

Patients prospectively enrolled in the Lumbar Spinal Stenosis Outcome Study (LSOS) with a minimum follow-up of 12 months were included in the present study. With EQ-5D data of each subject, health-related quality of life (HRQoL) weights (or utilities) were calculated based on published data from the EuroQol Group. Data regarding the costs of each treatment were retrieved retrospectively from hospital records from a single institution, and cost effectiveness was then calculated based on a decision tree analysis.

Results

A total of 442 patients (M:213, F:229, age:73,4±8,3 years) were included, treated either surgically (n=154) or conservatively (n=288) for LSS (Figure 1). The majority of surgically treated patients underwent decompression only (82,5%), compared to 17,5% who underwent decompression with or without instrumentation. There were 12 out of 154 surgically treated patients (7,8%), in whom a reoperation was performed: ten patients in the "decompression only group" required a reoperation, either due to a complication (n=6), or a failure to cure (n=4), and two patients in the "decompression and instrumentation group" required a reoperation, due to a failure to cure. In 18,4% of conservatively treated patients a single infiltration was sufficient, with no further treatment required within the 12 months follow-up period. However, 68 patients (23,6%) required multiple infiltrations, and in 167 cases (58,0%) a subsequent surgical intervention was performed. The HRQoL was increased by 0,252 utility points in the surgical arm (+0,204 and +0,262, decompression ± instrumentation, respectively), compared to 0,188 in the conservative arm (p=0.04). Treatment costs were estimated at 13.436CHF and 10.460CHF in surgically and

conservatively treated patients, respectively.

Conclusion

An increase in quality of life was achieved by both a conservative and a surgical treatment approach, with the highest increase in HRQoL in the surgical subgroup “decompression only”. While this increase was significantly higher in the surgical arm, the associated treatment costs were only slightly higher. An epidural infiltration was only successful – defined by the absence of a subsequent infiltration within 6 months – in 18,4%, and the majority of the conservatively treated patients required multiple infiltrations or a subsequent surgical intervention.