Comparison of lumbar and cervical degenerative spine disease outcomes – A prospective spine surgery outcomes database study with SF-36

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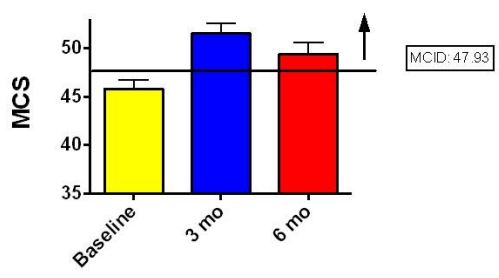
Introduction

Patient filled questionnaires, such as Short Form-36 (SF-36), have become the mainstay in evaluation of treatment outcomes in DSD. Lumbar and cervical patients' outcomes are sometimes reported together with the assumption that they represent comparable dynamics in SF-36 values and have similar minimal clinically important difference (MCID) scores. In this study we compare changes in quality of life between lumbar and cervical DSD patients, evaluating all eight physical and mental outcome scales of SF-36.

Methods

All patients referred to the neurosurgery clinic between 9/8/09 and 11/1/2011 were offered enrollment in a prospective patient-driven spine surgery outcomes database. 337 patients (47% females, mean age 57) were prospectively assessed using the Short Form-36 (SF -36) questionnaire at baseline, and at 3-6 months intervals. From all patients enrolled, 134 (40%) had cervical spine disease, 195 (58%) had lumbar spine disease and 8 patients (2%) had both.

Fig 1

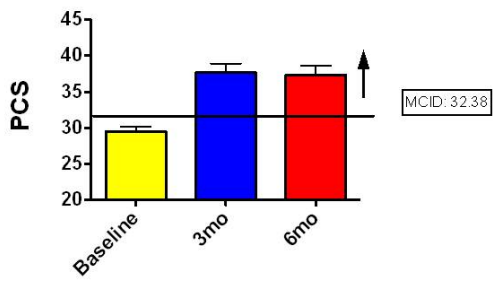


Lumbar patients outcome - mental component summary (MCS) of SF-36

Results

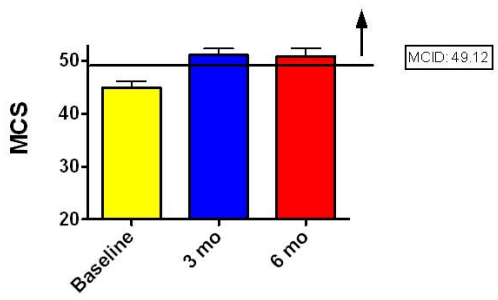
Based on different scales of the SF-36, we observed that at baseline the physical self-assessment score of lumbar patients is 27% lower than that of cervical patients ($p<0.05$). Mental scores are similar between the two groups except for their Social Functioning (SF) measurement, which is 13% lower in lumbar patients ($p<0.05$). At last available follow up at 3 or 6 months, both groups of patients had improvement in their scores. All patients achieved the MCID threshold. Patients' SF-36 PCS(physical component summary) improved by 27.14% at 6 months; neck patients improved by 26,19% (33.02 to 41.67) and low back improved in 28.1% (29.56 to 37.88)). The time course of changes in the measured outcome was different in the two groups, indicating that at various points in time the outcome may appear significantly different.

Fig 2



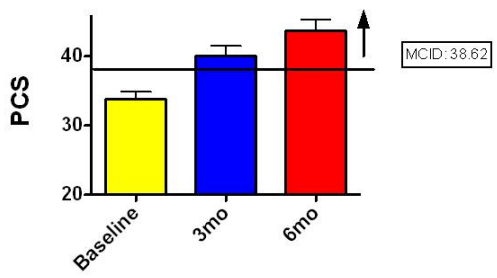
Lumbar patients outcome - physical component summary (PCS) of SF-36

Fig 3



Cervical spine patients outcome - MCS

Fig 4



Cervical spine patients outcome - PCS

Conclusions

Good improvement was observed in all patients, similar in the cervical and lumbar groups. However, the groups differed in starting score, time course and the degreee of improvement on both the physical and mental scale. Rational approaches to subgroup analysis such as lumbar versus cervical populations may yield important insights into MCID and patient outcome in general.

Learning Objectives

(1) Compare changes in quality of life between lumbar and cervical DSD patients through a self-assessment questionnaire (SF-36); (2) Develop a realistic vision of patient physical and mental outcomes, allowing for future better treatment approaches that focus on patient quality of life.