Psychosocial Factors: Do They Influence Clinical Outcomes Following Cervical Disc Replacement?
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Introduction: Over the past decade, cervical arthroplasty has become an additional treatment option for cervical myelopathy and radiculopathy. The theoretical advantage of cervical arthroplasty in maintaining motion at the operated segment and thus reducing the incidence of adjacent segment degeneration is still in question. However, the superiority of disc replacement over fusion in obtaining optimum clinical and radiological results has been reported by several authors. To our knowledge, the effect of associated psychological co-morbidities (Depression/Anxiety), smoking history, gender, work benefits and employment status on the clinical outcome measures have not been reported.

Materials & methods: We included 85 patients who underwent Cervical Disc Replacement (CDR) in our Spinal Unit (time period May 2006 - July 2010). The pain intensity was evaluated using the Visual Analogue Score for neck pain (VAS-NP) and arm pain (VAS-AP); functional outcomes were measured with Neck disability Index (NDI). The overall general health benefits were recorded using the Bodily Pain (SF36-BP) component of the Short Form 36 questionnaire. Statistics were obtained using SPSS 16.0 for Windows (SPSS Inc, Chicago, IL). Independent sample t-test for normally distributed data and Man-Whitney U test for non-parametric data were used. Statistical significance was designated at p < 0.05.

Results: There were 42 males and 43 females. Average age at operation was 52.66 years (Range 38-80) for males and 48.93 years (Range 31-71) for females. Average duration of follow up was 14.4 months (Range 6-35). Out of 85 patients, 25 patients had a history of anxiety/depression, 15 patients gave history of smoking, 33 were actively working at the time of operation and 18 were receiving social benefits. We have found that gender, smoking status, associated co-morbidities, working and benefit status had no statistically significant contribution to clinical outcome measures in the follow up period. For example, in the sub-group of smokers versus non-smokers, difference in median between pre-operative score and post-operative score for NDI was 17.73 and 17.96 (95%CI (confidence interval) -11.80, 11.35 and p-value =0.97) respectively. In the same sub-group, similar results were obtained for SF36-BP (4.23 ,5.07 and IQR (interquartile range) - 8.46, 16.49 and p= 0.95), VAS-NP ( 5 and 3, IQR (3 , 5 ), p=0.09) and VAS-AP (4.07 , 2.54 , SD (3.45, 3.50), 95%CI (-0.45, 3.50), p=0.13).

Conclusion: In our study, we conclude that there was no statistically significant contribution of these associated factors on the clinical outcomes following CDR. Although smoking is known to affect the results of cervical fusion, this does not seem to be the case in Cervical Disc Replacement. Gender, associated co-morbidities (Depression/Anxiety), work benefits and working status do not significantly influence the clinical outcome of Cervical Arthroplasty.