Clinical Outcomes of Prestige LP Cervical Disc Arthroplasty: A Prospective, Controlled, Single Site Trial with 24-month Follow-up

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Study design: A prospective, controlled, one center study of surgical treatment of cervical disc disease.

Objective: To report safety and efficacy of cervical disc arthroplasty using Prestige LP cervical disc device at 24 months follow-up.

Methods: A total of 78 patients were enrolled at our site as study investigating ACDF versus Prestige LP cervical disc prosthesis. 40 patients received the investigational device and 38 patients underwent a single-level anterior cervical discectomy and decompression and fusion as the control group. Clinical outcomes are now reported at 24 months follow-up for our cohort of participants. Japanese Orthopedics Association score (JOA), neck/arm pain VAS scores, Neck disability index score (NDI) and SF-36 both physical and mental as well as complications are reported.

Results: Demographic and surgical data were generally similar in two groups. Clinical outcome data collected at routine postoperative intervals for 24 months demonstrated that the both group has favorably demonstrated improved functional outcomes for JOA, neck/arm pain VAS scores, NDI and the SF-36 physical/mental health component scores. Compared the groups, the improvement in the JOA score was equivalent at 24 months (P=0.553). Pain relief for both neck and arm was similar between groups (P=0.561, P=0.611). Investigational group had statistically significant (P< 0.05) improvements as assessed by the Neck Disability Index, the SF-36 both Physical and Mental component scores compared with the control group at some follow-up points. During the course of the 2-years follow-up, in control group, 3 patients (7.9%) received surgical intervention and 4 patients (10.5%) complained paraesthesia of bone-harvesting skin, while 3 patients (7.5%) in the investigational group were observed less than 3mm anterior device migrations in the early follow-up.

Conclusions: At 24 months, cervical arthroplasty with the Prestige LP cervical disc prosthesis compares favorably to ACDF at our study. The results indicate that Prestige LP cervical disc arthroplasty is a feasible alternative to the patients with persistently symptomatic cervical disc disease.

Keywords: Prestige LP cervical disc, cervical arthroplasty, prospective, ACDF.