activC®

activC® (Aesculap AG) is a cervical disc prosthesis for a motion preserving treatment of degenerativ cervical disc disease.

It is indicated for light to moderate degeneration of cervical disc with light to moderate changes of the disc, vertebral endplates, osteophytes and/or with fresh herniated disc. The specific motion pattern, physiological center of rotation and the shape of prosthesis-plates ensure the best possible adaption to natural anatomy and biomechanics of the patient for a fast reduction/elimination of pain/neurological deficits and a longterm preservation of motion patterns and the protection of adjacent level.

<html><iframe width="560" height="315" src="https://www.youtube.com/embed/00VkQ-yOUbo" frameborder="0" allowfullscreen></iframe></html>

Case series

2016

A total of 200 subjects underwent single-level activC® (Aesculap AG) implantation between C-3 and C-7 for the treatment of symptomatic cervical degenerative disc disease. Clinical and radiographic assessments were performed preoperatively, intraoperatively, at discharge, and again at 6 weeks, 6 months, 1 year, 2 years, and 4 years. Radiographic evaluations were done by an independent core laboratory using a specific software for quantitative motion analysis.

Neck Disability Index (NDI) and visual analog scale (VAS) score for neck and arm pain decreased significantly from baseline to the 4-year follow-up. The mean improvement for NDI was 20, for VAS severity and frequency of neck pain 26.4 and 28, and for VAS severity and frequency of arm pain 30.7 and 35.1, respectively. The neurological situation improved for the majority of patients (86.4%); 76.1% of cases were asymptomatic. Subsequent surgical interventions were reported in 7% of the cases, including device removals in 3%. In 2.5% a subsidence greater than 3 mm was recorded; 1 of these cases also had a migration greater than 3 mm. No device displacement, expulsion, disassembly, loose or fractured device, osteolysis, or facet joint degeneration at the index level was observed. Segmental lordotic alignment changed from -2.4° preoperatively to -6.2° at 4 years, and postoperative height was maintained during the follow-up. Advanced HO (Grade III and IV) was present in 27.1% of the cases; 82.4% showed segmental mobility. A progression of radiographic adjacent-segment degeneration occurred in 28.2%, but only 4.5% required surgical treatment.

The activ C is a safe and effective device for cervical total disc replacement confirming the encouraging results after cTDR. Clinical trial registration no.: NCT02492724 (clinicaltrials.gov) [1)]

1)
Meisel HJ, Jurák L, Antinheimo J, Arregui R, Bruchmann B, Čabraja M, Caroli F, Kroppenstedt S, Kryl J, Pohjola J, Shackleford I, Sola S, Stosberg P, Stulik J, Woiciechowsky C, Suchomel P. Four-year results of a prospective single-arm study on 200 semi-constrained total cervical disc prostheses: clinical and radiographic outcome. J Neurosurg Spine. 2016 Nov;25(5):556-565. PubMed PMID: 27258476.