while DCI group was normal. **Conclusion:** Cervical disc arthroplasty and dynamic cervical implant in treatment of cervical spondylopathy can retain the range of motion, recover, and maintain the height of disc and cervical lordosis.

P009: Cervical Disc Replacement: Trends, Costs, and Complications

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Introduction: Artificial cervical disc replacement (ADR) is a newer treatment option that obtained US FDA approval in 2007 that allows for effective discectomy and neural element decompression while preserving range of motion and potentially decreasing complications of pseudoarthrosis and adjacent segment disease associated with anterior cervical discectomy and fusion (ACDF). A growing body of evidence has demonstrated that ADR is both safe and efficacious with good mid- to long-term outcomes that are noninferior and potentially superior to ACDF. **Methods:** A retrospective database study was performed within the Humana portion of the PearlDiver Record Database (PearlDiver Inc, Warsaw, IN). Patients undergoing cervical ADR between January 1, 2007, and September 30, 2015, were identified using Current Procedural Terminology (CPT) codes. We collected annual trends, reimbursement costs, and patient demographic information, including sex, age, and inpatient or outpatient status. Patients data were collected from the time of operation to 1 year postoperative. Complications were grouped into 7 categories: pain, mechanical and bone-related complications including adjacent disc degeneration, nerve injury, dysphagia and dysphonia, infections, adverse reactions (hemorrhage, embolism, fibrosis, stenosis, thrombosis), and revision and reoperation procedures (removal of ADR, conversion to ACDF, revision ADR, and/or cervical osteotomies). **Results:** A total of 293 patients were identified in the Humana database receiving either single or multilevel ADR between 2009 and 2015. ADRs was most commonly performed in patients aged 40 to -54 years. With regard to complications, fewer than 3.7% of patients (<11) had new onset pain within 1 year after CDR. A total of 12.3% of patients (36) reported a mechanical and/or bone-related complication within 1 year. No patients indicated a new nerve injury within 6 months of follow-up. Fewer than 11 patients (<3.7%) presented with dysphagia or dysphonia within 6 months, infection within 3 months, or a revision or reoperation within 1 year. Due to PearlDiver limitations on privacy, exact numbers could not be obtained for incidence less than 11 patients. Average reimbursement for single-level inpatient ADR was $33 696.28 versus outpatient as $34 675.12 with no statistically significant difference ($P = .29$). **Conclusion:** Previously reported rates of complications within 1 year of ADR have been reported between 0% and10% in other large studies. Our study reported bone and mechanical related complications within 1 year of procedure to be consistent as previously reported. Additionally, rates of dysphagia or dysphonia and revision or reoperation were also similar to previously reported studies. Cost data for our study reveal no significant difference between inpatient and outpatient ADR, which has implications for health care payers. We feel that this study provides valuable data regarding inpatient versus outpatient costs and reveals a slightly higher rate of complications within the 1-year period, specifically in the mechanical and bone-related category, than may have been previously reported in the cervical ADR IDE (investigational device exemption) trials.

P010: Segmental Osteolysis Following Cervical Total Disc Replacement

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Introduction: Segmental osteolysis of the vertebral body can be considered as one of the potential complications after cervical total disc replacement (C-TDR). However, its clinical relevance is still unclear. The purpose of this study is to evaluate the rate of segmental vertebral body bone loss and its clinical outcome after single level C-TDR using ProDisc-C (Synthes Inc, West Chester, PA) with a minimum of 2 years follow-up. **Material and Methods:** The patients who underwent single-level C-TDR using ProDisc-C at single institute from September 2006 to January 2016 were retrospectively included. Demographic data (age, sex, operative level), radiographic parameters (true lateral neutral and dynamic X-rays), and clinical parameters (visual analogue scale [VAS] score for neck, VAS score for arm, and Neck Disability Index [NDI]) were collected. Patients that had hybrid procedure and malposition of implant insertion were excluded. We categorized patients into 3 groups according to the radiographic grading of bone loss—Group N: no bone loss; Group 1: diminish of the anterior osteophyte or minimal bone loss not extending beyond the anterior keel line; Group 2: significant bone loss that extending pass the anterior keel line. **Results:** Of the 57 patients (mean age = 56.89 $\pm$ 9.4, male-to-female ratio = 33:24) enrolled in our study, 13 patients (22.8%) developed heterotrophic ossification at the last follow-up visit, none of whom demonstrated any motion nor bone loss on the radiographic studies, and 9 patients (17.4%) were classified as Group N (no bone loss and preserved segmental motion). Radiographic bone loss was observed in 35 patients (61.4%), 33 patients in Group 1, and 2 patients in Group 2. Among the 2 patients in Group 2, the earliest evidence of bone loss was detected as early as 3 months postoperatively. Segmental bone loss only occurred in the motion-preserving unit, unlike ones that developed heterotrophic ossification ($P < .05$). Patients in Group 2 experienced more postoperative VAS for neck and less NDI reduction as compared with other groups ($P < .05$), but