

Health-Care Utilization and Bundled Payment Reimbursement for Patients Undergoing Anterior and Posterior Procedures for Degenerative Cervical Radiculopathy

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Introduction

Anterior cervical discectomy with fusion (ACDF) or Posterior Cervical Foraminotomy (PCF) are the surgical procedures performed to treat patients with degenerative cervical radiculopathy (DCR)

Methods

Data were extracted from MarketScan database (2000-2012), using ICD-9 and CPT-4 codes. Bundled payment was calculated as the cumulated payments from the index hospitalization admission to 90 days post surgery discharge. We also analyzed the index hospitalization (physician, hospital as and total) and the post-discharge payments (hospital readmission, outpatient services, medications and total). Groups were matched on the propensity score and number of levels operated on (single or multiple).

Results

A cohort of 3852 patients was identified from the database. A matched cohort of 2714 patients underwent multilevel surgery while 1138 patients underwent single level surgery. Median 90-day bundle payment was significantly higher for ACDF compared to that for PCF for single level surgery (median \$25,699 vs. \$ 15,263) and multilevel surgery (median \$29,377 vs. \$ 16,295) $p < 0.0001$. The total index hospitalization payments (single level: median \$22,870 vs. \$12,466, multilevel: median \$26,730 vs. \$13,391), physician payment single level: median \$4,306 vs. \$1,647, multilevel: median \$5,142 vs. \$2,043), and hospital payments single level: median \$12,438 vs. \$6,764, multilevel: median \$14,976 vs. \$7,157), were higher for ACDF compared to PCF, $P < 0.0001$. There was no significant difference between the two procedures in overall 90-day post-discharge payments for both single and multilevel surgery (single level: median \$1,611 vs. \$1,387, multilevel: median \$1,805 vs. \$1,749, $p\text{-value} > 0.25$).

Conclusions

Surgical treatment of DCR using ACDF generates higher health care resource utilization at the index hospitalization compared to PCF without any difference noted in 90-day post-discharge costs. PCF are an economically preferred option for bundled payment strategies.

Learning Objectives

Surgical treatment strategies for DCR and their economical impact on health care utilization.

Comparison of bundle payments for the treatment of Degenerative Cervical Radiculopathy (DCR) using Anterior Cervical Discectomy with Fusion (ACDF; blue) and Posterior Cervical Foraminotomy (PCF, red) using a propensity matched cohort. The box plot re

