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## **An Analysis of the Burden of Illness and Treatment in Knee Osteoarthritis in a U.S. Administrative Claims Database**

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**Background:** Knee osteoarthritis (OA), the most common type of OA, is a disabling joint disease with rising prevalence and is commonly associated with aging. Pain is the predominant symptom and pharmacological therapies are often initially utilized for patient treatment.

**Objective:** To describe knee OA prevalence, treatment trends, and associated all-cause- and knee-OA-related healthcare utilization and costs from a U.S. administrative claims database.

**Methods:** U.S. administrative claims data from 2013-2018 (IBM MarketScan<sup>®</sup>) were used to perform a retrospective cohort study. Inclusion criteria included  $\geq 18$  years old and (1)  $\geq 1$  claim with an ICD9 diagnosis of lower leg OA prior to 10/2015 followed by a confirmatory ICD10 diagnosis of knee OA or (2)  $\geq 1$  claim with an ICD10 diagnosis of knee OA. The index date was the earliest claim date. Patients had to have  $\geq 12$  months of continuous enrollment prior to and 24 months following the index date. Healthcare utilization and costs were measured during the post-index period. Cost was estimated as per-patient-per-year (PPPY) to account for variable-length follow-up. Prevalence was calculated as the number of patients with a knee OA diagnosis divided by the total number of patients with continuous enrollment in 2017.

**Results:** 273,079 knee OA patients met inclusion criteria. The estimated 2017 prevalence in the eligibility-matched cohort was 5.0% among patients  $\geq 18$  years old and 14.3% among patients  $\geq 60$  years old. The mean age was 60.6 years (SD 11.9; range 18-103), and 61.6% were female. The mean total all-cause annual healthcare cost per patient was \$20,275 (SD \$33,730), whereas knee-OA-related cost was \$6,414 (SD \$8,294). All-cause and knee-OA-related healthcare utilization, respectively, were 39.1% (mean \$15,918; SD \$23,269) and 19.2% (mean \$11,922; SD \$10,069) for inpatient admissions, 99.7% (mean \$10,327; SD \$21,944) and 99.7% (mean \$1,160; SD \$2,354) for outpatient services, and 98.3% (mean \$3,704; SD \$10,210) and 89.6% (mean \$367; SD \$1,538) for medication claims. Of patients prescribed a medication, 84.1% received corticosteroids, 33.1% hyaluronic acid, 69.1% prescription NSAIDs, and 36.5% opioids ( $> 30$ -day supply). The mean PPPY cost associated with each drug above was \$209 (SD \$1,353), \$498 (SD \$548), \$242 (SD \$1,302), and \$537 (SD \$3,056), respectively.

**Conclusions:** This descriptive claims analysis provides updated healthcare resource utilization and costs for patients with knee OA. Further research will explore the significance of these findings on the total cost of care for knee OA patients in the U.S.