



Economic Impact of Ketorolac vs. Corticosteroid Intra-articular Knee Injections for Osteoarthritis ◊

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Introduction: Knee osteoarthritis (OA) is a disabling disease that affects millions and costs billions of dollars to treat. Corticosteroid gives varying pain relief and costs \$12 per injection while Ketorolac costs \$2 per injection at our institution. The aim of this study was to compare Ketorolac to corticosteroid based on pain relief using patient outcome measures and cost data.

Methods: Thirty-five patients were randomized to Ketorolac or corticosteroid intra-articular knee injection in a doubleblind, prospective study. Follow-up was 24 weeks. OA was evaluated using Kellgren-Lawrence (KL) grading. Injections were performed under ultrasound guidance. Visual analog scale (VAS) was the primary outcome measure. Other validated patient outcome measures were compared. A query of the institutional database was performed for ICD-9 codes 715.16 and 719.46, and procedure code 20610 over a 3 year period. Two-way, repeated measures ANOVA and Spearman-Rank Correlation were used for statistical analysis.

Results: Mean VAS for Ketorolac and corticosteroid decreased significantly from baseline at two weeks, 6.3 to 4.6 and 5.2 to 3.6, respectively, and remained decreased for 24 weeks. Mean WOMAC score for Ketorolac and corticosteroid increased from baseline at 2 weeks, 49 to 53 and 53 to 68, respectively. There was no significant difference in KS, SF-36, TL, and UCLA scores among Ketorolac or corticosteroid throughout the 24 weeks. There were 220, 602 and 405 injections performed on patients with the ICD-9 codes 715.16 and 719.46 during 2013, 2014 and 2015, respectively. The cost savings per year using Ketorolac instead of corticosteroid would be \$2,259.40, \$6,182.54 and \$4,159.35 for 2013, 2014 and 2015, respectively, with a total savings of \$12,601.29 over this time period.

Conclusion: Pain relief was similar between Ketorolac and corticosteroid injections. Ketorolac knee injection is safe and effective with a cost savings percentage difference of 143% when compared to corticosteroid.

◊ The FDA has not cleared the pharmaceuticals and/or medical devices listed here. Ketorolac Tromethamine