Paper #8

Intra-Articular Injection of an Extended-Release Formulation of Triamcinolone Acetonide Provided Significant Improvement in Pain, Stiffness and Function in Patients with Knee Osteoarthritis◊

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Introduction: FX006, an extended-release formulation of triamcinolone acetonide (TCA), prolongs TCA joint residency and reduces systemic exposure following intra-articular injection in patients with knee osteoarthritis. This multinational phase 3 study (NCT02357459) evaluated effects on pain relief, physical function, stiffness, and quality of life (QoL). Clinical relevance of treatment effects were evaluated post-hoc with application of Minimum Clinically Important Improvement (MCII) criteria from the 2013 AAOS Treatment of Osteoarthritis of the Knee Evidence-Based Guideline.

Methods: Patients with Kellgren-Lawrence grade 2/3 knee osteoarthritis and baseline average daily pain (ADP) score ≥5 to ≤9 on an 11-point numeric rating scale were randomized to FX006 40 mg, placebo, or standard TCA 40 mg. Weekly mean ADP, Western Ontario and McMaster Universities Arthritis Index (WOMAC) A (pain), B (stiffness), and C (function), and Knee Injury and Osteoarthritis Outcome Score (KOOS) QoL were assessed at 4-week intervals over 24 weeks. Safety assessments included adverse event (AE) monitoring and clinical, laboratory, and radiographic evaluations.

Results: 484 patients were treated (FX006, n=161; placebo, n=162; TCA, n=161). Baseline characteristics were similar across groups. FX006 demonstrated statistically significant improvement over placebo in Week-12 mean ADP ($P<0.0001$); improvement over placebo and TCA in WOMAC A, B, and C, at Weeks 4, 8, and 12 ($P<0.05$); and improvement over placebo and TCA in KOOS QoL at Weeks 4, 8, and 12 ($P<0.05$). Improvement produced by FX006 exceeded AAOS thresholds for MCII treatment effect for each WOMAC subscale. Further, FX006, but not TCA, achieved AAOS definition for clinically significant improvement. No serious drug-related AEs occurred. AEs were balanced across arms and generally mild.

Conclusions: In this phase 3 study of patients with knee osteoarthritis, intra-articular injection of FX006 demonstrated clinical significance according to AAOS MCII criteria for improvement in osteoarthritis-specific measures of pain, stiffness, and function with an AE profile similar to placebo.

◊ The FDA has not cleared the pharmaceuticals and/or medical devices listed here: FX006 is an investigational pharmaceutical product

Notes