Sensitisation and Pain Severity in Patients with Knee Osteoarthritis

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Background: Sensitisation, a hyperexcitability of nociceptive pathways, contributes to pain severity in patients with knee osteoarthritis, but this association has not yet been examined in patients with hand osteoarthritis (HOA).

Objectives: This study explored the occurrence of central and peripheral sensitisation in patients with HOA and the relationship between sensitisation and hand pain severity.

Methods: Three hundred subjects (89% women) with clinical and/or ultrasound-verified HOA were included in this cross-sectional study. Hand pain severity was assessed with the numeric rating scale (0–10 NRS) of hand pain during the last 24 hours, the pain subscale (0–20) of the Australian/Canadian (AUSCAN) hand index and a modified version (0–42 scale) of the Intermittent and Constant Osteo-Arthritis Pain (ICOP) questionnaire.

Pressure pain thresholds (PPT) were measured with an algometer at two sites: dorsum of the OA finger joint reported to be most painful to test peripheral sensitisation, and at a remote site (mid-portion of tibialis anterior) to test widespread hyperalgasia. Temporal summation (TS), the increase in perceived pain to repetitive noxious stimuli reflecting central sensitisation, was assessed with a mechanical probe at the right wrist. First, probes with increasing weight (32, 64, 128, 256 or 512 mN) were applied at the wrist until the patients reported pain of at least 4/10. The selected probe was applied to the wrist ten times at 1 Hz. Subjects reported NRS pain on the first, fifth and tenth touch. The magnitude of enhanced pain value (D): highest pain value of fifth or tenth touch minus the first pain value.

Subjects were categorised into sex-specific PPT tertiles. We then used linear regression to analyse whether PPT tertiles and TS were associated with pain severity with and without adjustments for age, sex, BMI, use of analgesics (NSAIDS, acetaminophen and opioid-like drugs) and several psychosocial factors (highest degree of completed education (1–7 scale), sleep disturbance (0–4 scale), the Pain Catastrophizing Scale (PCS) and the Hospital Anxiety and Depression Scale (HADS)).

Results: Median age was 61 (IQR 57, 67) years, symptom duration 6 (IQR 3, 13) years, and mean body mass index (BMI) was 26.5 (SD 4.9) kg/m². Median TS-10 was defined as TS-10: highest pain value of fifth or tenth touch minus the first pain value. Subjects with increased TS-10 were more likely to be female (p=0.032), have higher BMI (p=0.003), and report greater pain severity (p<0.001).

Conclusions: In patients with HOA, sensitisation, as reflected by lower PPTs might reduce pain in patients with HOA.

Disclosure of Interest: None declared


Safety and Efficacy of Lutikizumab (ABT-981), an Anti–Interleukin-1 Alpha-Beta Dual Variance Domain (DVD) Biologic, in Subjects with Knee Osteoarthritis: Results from the Randomised, Double-Blind, Placebo-Controlled, Parallel-Group Phase 2 trial

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Background: Animal studies suggested that inhibiting IL-1cβ with lutikizumab (formerly, ABT-981) may reduce pain and slow structural progression in OA.

Objectives: This study (NCT02087904; ILLUSTRATE-K) assessed the safety and efficacy of lutikizumab in subjects with knee OA.

Methods: Subjects (n=350; 347 analysed) with Kellgren-Lawrence (KL) grade 2–3 knee OA, synovitis on MRI DS, and visual analogue scale knee pain score 4–8 (range, 0–10) were randomised to receive placebo (PBO) or lutikizumab 25, 100, or 200 mg subcutaneously (SC) every 2 wk (E2W) for 52 wk. The primary endpoints were change from baseline (BL) in WOMAC pain at wk 16 and change from BL in MRI synovitis at wk 26. Other endpoints included WOMAC function and OMERACT/OARSI response (wk 16, 26, and 52) MRI cartilage volume (wk 26 and 52), and x-ray joint space narrowing (JSN) (wk 52).

Results: BL demographics and disease characteristics were balanced (KL grade 3, 36.0%–38.8%; mean WOMAC pain (scale 0–50), 26.2–28.4). The primary endpoint of WOMAC pain at wk 16 improved significantly, compared with PBO, with lutikizumab 100 mg (p=0.050), but not 25 mg (p=0.834) or 200 mg (p=0.414). WOMAC pain reduction on all lutanoid osteoarthropathies from wk 16 to 52, but differences between lutikizumab and PBO for WOMAC pain and other key signs and symptoms were not significant (table 1). Synovitis-related imaging, cartilage volume endpoints, and JSN were similar between lutikizumab and PBO groups at wk 26 and 52. Lutikizumab was well tolerated; serious adverse events (SAEs), treatment-related SAEs, and infections and serious infections were ≥1× greater with lutikizumab vs PBO. Other key signs and symptoms were more frequent with lutikizumab vs PBO. Lutikizumab exposures reached steady state after wk 6 and were stable.