SAT0574 SENSITISATION AND PAIN SEVERITY IN PATIENTS WITH HAND 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 Osteoarthritis Pain (ICOAP) 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 hyperalgesia. 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 TS was defined as TS-Δ: 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-Δ 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-Δ among the participants was 1 (IQR 0, 2) and TS-Δ of 2 or more was found in 41%. Subjects in the lowest PPT tertile of their painful OA joint and tibialis anterior reported more hand pain than subjects in the highest PPT tertile. Unadjusted, the relation of PPT to NRS and ICOAP were statistically significant, and for the tibialis anterior only, it was also significantly associated with AUSCAN. After adjusting for potential confounders, the relationships were only statistically significant for NRS (Table).

We found positive adjusted associations between increasing TS-Δ and NRS (beta 0.18, 95% CI 0.04, 0.32) and ICOAP (beta 0.63, 95% CI –0.16, 0.3), but not for AUSCAN pain (beta 0.12, 95% CI 0.11, 1.16).

Abstract SAT0574 – Table 1. Pain severity across different levels of pressure pain thresholds.

	NRS	AUSCAN Pain	ICOAP
PPT- tertiles	Mean (SD)	Mean (SD)	Median (IQR)
Highest (ref.)			
Painful OA joint	3.48 (2.15)	7.87 (4.00)	9 (4, 17)
Tibialis anterior	3.06 (2.00)	7.31 (3.90)	9 (4, 14)
Middle			
Painful OA joint	3.49 (2.27)	8.08 (4.20)	10 (5, 15)
Tibialis anterior	3.59 (2.13)	8.01 (3.88)	11 (4, 15)
Lowest			
Painful OA joint	4.35 (2.32) *	8.72 (3.98)	14 (7, 22)
Tibialis anterior	4.65 (2.40) *	9.24 (4.21)	15 (8, 23)

Adjusted for age, sex, BMI, use of analgesics, education level, degree of sleep disturbance, PCS and HADS. *Level of significance p<0.05.

Conclusions: In patients with HOA, sensitisation, as reflected by lower PPTs and enhanced TS, was significantly associated with greater pain severity. Future studies are needed to explore whether sensitisation is a result of OA pathology or traits of certain patients, and whether treatments aiming to reduce sensitisation might reduce pain in patients with HOA.

Disclosure of Interest: None declared

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SAT0575 SAFETY AND EFFICACY OF LUTIKIZUMAB (ABT-981), AN ANTI-INTERLEUKIN-1 ALPHA/BETA DUAL VARIABLE DOMAIN (DVD) IMMUNOGLOBULIN, 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-1α/β 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 or US, 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 50 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).

Abstract SAT0575 – Table 1. Changes From Baseline in Efficacy Endpoints (LOCF)

Signs and Symptoms Endpoints (LOCF data)	Week 16				Week 52			
	LUTIKIZUMAB, mg sc				LUTIKIZUMAB, mg sc			
	PBO (n=85)	25 (n=88)	100 (n=84)	200 (n=88)	PBO (n=85)	25 (n=88)	100 (n=84)	200 (n=88)
Endpoint (full scale)								
WOMAC pain (0–50)	–8.9	–9.2	–11.8	–10.1	–10.0	–11.0	–12.1	–12.2
P value vs PBO		0.834	0.050*	0.415		0.500	0.186	0.157
WOMAC function (0–170)	–28.7	–29.8	–36.3	–32.1	–32.9	–36.1	–38.7	–39.7
P value vs PBO		0.818	0.109	0.465		0.558	0.295	0.218
OMERACT/OARSI response, %	60.0	67.0	72.6	65.5	70.6	69.3	71.4	72.7
P value vs PBO		0.311	0.080	0.435		0.824	0.964	0.763
Structural Endpoints (observed data)								
	Week 26				Week 52			
	LUTIKIZUMAB, mg sc				LUTIKIZUMAB, mg sc			
	PBO	25	100	200	PBO	25	100	200
WORMS synovitis/effusion volume	0.07	–0.01	–0.08	–0.07	–0.05	–0.05	–0.06	–0.01
n	70	76	70	75	59	66	62	66
P value vs PBO		0.384	0.095	0.106		0.967	0.923	0.692
Effusion volume, mL	0.03	0.26	–1.04	–1.49	–1.90	1.17	–0.67	–1.83
n	60	69	67	68	53	60	60	58
P value vs PBO		0.897	0.542	0.385		0.154	0.569	0.973
Synovial membrane thickness, mm	–0.05	0.01	–0.08	0.01	–0.07	–0.04	–0.05	–0.02
n	59	65	59	63	50	59	55	53
P value vs PBO		0.145	0.520	0.159		0.474	0.637	0.221
Cartilage volume, mm ³								
n	58	65	53	66	49	57	50	56
Total	–326.0	–325.5	–322.4	–359.0	–557.0	–598.7	–554.3	–583.1
P value vs PBO		0.992	0.948	0.523		0.554	0.970	0.713
Medial	–166.9	–159.5	–163.1	–153.7	–286.8	–317.3	–266.7	–310.9
P value vs PBO		0.804	0.904	0.655		0.503	0.670	0.599
Lateral	–159.6	–166.3	–158.0	–204.1	–270.7	–280.9	–287.9	–271.1
P value vs PBO		0.860	0.969	0.239		0.820	0.711	0.992
JSN, mm								
n	–	–	–	–	58	70	64	68
Medial	–	–	–	–	0.00	–0.18	–0.11	–0.06
P value vs PBO		–	–	–		0.017*	0.148	0.415
Lateral	–	–	–	–	–0.16	0.14	–0.07	0.04
P value vs PBO		–	–	–		0.005*	0.418	0.065

Data are least squares means unless otherwise noted.

LOCF, last observation carried forward; PBO, placebo; sc, subcutaneous.

*P<0.05 vs PBO. Continuous variables compared with analysis of covariance (ANCOVA) with treatment, age, and KL grade as main factors and baseline as covariate. Categorical variables compared with Cochran-Mantel-Haenszel test with age group and KL grade as stratification factors.

†Data missing for 1 subject.

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=0.415). WOMAC pain reduction in all lutikizumab groups was sustained 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 similar with lutikizumab vs PBO. Injection site reactions, grade 2/3 neutropenia, and discontinuations due to neutropenia were more frequent with lutikizumab vs PBO. Lutikizumab exposures reached steady state after wk 6 and were stable