baseline. There were improvements in gray-scale synovitis total score and intensity of PDS in patients with non-erosive disease while patients with erosive disease worsened after the isoe third year of follow up. On the other hand, the progression of US-determined osteophyte formation was observed in both groups but were significantly higher in patients with erosive compared with non-erosive disease after the third year of follow up.

Conclusion: The findings of this study show that pain and number of painful and clinically swollen joints associated with US-detected synovial changes and osteophyte formation is more severe in patients with erosive HOA than in patients with non-erosive disease. In addition, osteophyte formation is more likely to progress independent of synovial inflammation.

REFERENCE:


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THU0454

CONDITIONED PAIN MODULATION AND TEMPORAL SUMMATION IN PERSONS WITH HAND OSTEOARTHRITIS AND ASSOCIATIONS WITH PAIN SEVERITY

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Background: Conditioned pain modulation (CPM) assesses adequacy of descending modulatory pathways. Temporal summation (TS) reflects ascending facilitation of nociceptive signals in the central nervous system (central sensitization). Inadequate CPM and enhanced TS of pain are both known to contribute to pain in chronic pain conditions. Different pain phenotypes may respond to different treatments strategies and may therefore be important to assess in clinical practice. CPM has not previously been explored in persons with hand OA and its relation to pain severity is unknown.

Objectives: To examine the prevalence of CPM and central sensitization alone or in combination in persons with hand OA, and to explore their associations with pain severity.

Methods: These cross-sectional analyses included 248 participants with hand OA from the Nor-Hand study. Participants reported hand pain severity during the last 24 hours on a numeric rating scale (NRS, 0-10). CPM was assessed using transcutaneous electrical nerve stimulation and a hand-held pain stimulating device. TS was assessed using a punctate stimulus. To assess central sensitization, we used mechanoelectric sensitivity (MEMS) with a 100-s interval between stimuli.

Results: Of the 248 participants included, 90% were women, median age was 61 (IQR 57, 66) years and mean BMI was 26.3 (SD 4.7) kg/m2. CPM-ratio ranged from 0.4 to 1.6 (mean 0.9, SD 0.2), and 32% showed inadequate CPM. Presence of TS was found in 46% of the study population. Overall, 38% had no TS and adequate CPM, 29% had inadequate CPM only, 16% TS only and 16% had both (Table). We found that persons with inadequate CPM only and TS only reported higher pain severity than persons with adequate CPM and no TS (Table). Those with both inadequate CPM and TS reported similar levels of pain as persons with inadequate CPM only and TS only.

Abstract THU0454 – Table 1. Associations of conditioned pain modulation (CPM) and temporal summation (TS) with pain severity in persons with hand OA. (n=248)

<table>
<thead>
<tr>
<th>Mean (SD) NRS hand pain</th>
<th>Adjusted beta (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No TS and adequate CPM (n=56)</td>
<td>3.2 (1.8)</td>
</tr>
<tr>
<td>Inadequate CPM-only (n=39)</td>
<td>3.9 (2.3)</td>
</tr>
<tr>
<td>TS-only (n=40)</td>
<td>4.2 (2.5)</td>
</tr>
<tr>
<td>TS and inadequate CPM (n=60)</td>
<td>4.6 (2.3)</td>
</tr>
</tbody>
</table>

Adjusted for age, sex, BMI, analgesics, education, sleep disturbance, Pain Catastrophizing Scale, the Hospital Anxiety and Depression Scale and Kellgren Lawrence sum score.

Conclusion: One third of persons with hand OA had inadequate CPM. Those with inadequate CPM, central sensitization or both reported higher pain severity than persons without any signs of altered central pain processing. Having both inadequate CPM and central sensitization was not associated with higher pain severity than having only one of the features. Our results are the first to demonstrate such a heterogenous variety of clinically relevant pain phenotypes in persons with hand OA.

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THU0455

PHARMACOKINETICS (PK) OF A SINGLE INTRA-ARTICULAR (IA) INJECTION OF CNTX-4975 (TRANS-CAPSICAIN) VS TOPICAL 8% CAPSICAIN PATCH

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Background: CNTX-4975 is in phase 3 trials for treatment of moderate to severe pain associated with knee osteoarthritis (OA). PK data from prior studies of CNTX-4975 in subjects with moderate to severe knee OA suggest low systemic and short-term exposure, similar to the FDA-approved topical capsicain 8% patch.

Objectives: We compared single-dose systemic exposure to trans- and cис-capsicain following IA injection of CNTX-4975 (>95% trans-capsicain, <0.5% total impurities) with 8% capsicain patch in subjects with moderate to severe knee OA pain.

Methods: This open-label, crossover study enrolled adults aged 50–75 y with moderate to severe knee OA pain in ≥1 knee (most painful knee, index knee; nonindex knee, no to mild pain [0–1; NPRS 0–4 scale]). Subjects were randomized 1:1 to 2 sequences: A (CNTX-4975 1 mg IA, index knee) followed by B (topical capsicain 8% patch, posterior rib cage for 60 min) or BA sequence, with >7-day washout between treatments. Plasma samples for trans- and cis-capsicain concentration assays were taken before and at specified times after study treatment. PK parameters, including maximum observed plasma concentration (Cmax), area under the plasma concentration-time curve from time 0 to last quantifiable plasma concentration (AUC0–t) and to infinity (AUC0–∞), time to Cmax (tmax), and half-life (t1/2) were determined. PK parameters were reported using descriptive statistics. Geometric means ratios of In-transformed AUC0–t, AUC0–∞, and Cmax were evaluated using ANOVA.

Results: Sixteen subjects (median age, 62 y; female, 62.5%) were randomized to treatment (PK analysis population). Tmax showed more rapid absorption of trans-capsicain from IA CNTX-4975 vs the topical patch (Table). AUC0–t, and Cmax indicated greater trans-capsicain exposure.

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