ASSOCIATIONS BETWEEN MEASURES OF OVERWEIGHT/OBESITY AND JOINT PAIN IN PERSONS WITH HAND OSTEOARTHRITIS: RESULTS FROM THE NOR-HAND STUDY

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Background: Overweight and obesity are well-known risk factors for osteoarthritis (OA) in weight-bearing joints. However, the role of increased body mass index (BMI) and waist circumference in OA of the non-weight-bearing joints is more controversial. Few hand OA studies have explored the associations between increased BMI/waist circumference and pain.

Objectives: The aim of this study was to explore whether BMI and waist circumference were associated with self-reported pain in the hands, feet, knees and hips as well as pain sensitization in persons with hand OA. Further, we examined whether synovitis could partly explain the association between BMI/waist circumference and pain, due to a low-grade inflammatory state in over-weighted persons.

Methods: The Nor-Hand study is an observational study of 300 participants with hand OA. We measured their height and weight in addition to their waist circumference. Participants completed Numeric Rating Scales (NRS) (0-10) about pain during the last 24 hours in their hands and feet, in addition to the Western Ontario and McMaster Universities OA Index (WOMAC) knee/hip pain subscale (0-20). Pressure pain thresholds (PPTs) (kg/cm²) were measured at both a painful and a non-painful interphalangeal joint of the hand, the left distal radioulnar joint and at the tibialis anterior and trapezius muscles. Temporal summation (TS) was measured with a weighted probe that was tapped 10 times at the left distal radioulnar joint. We considered TS to be present if the pain rating increased by ≥2 (i.e., >smallest detectable change) points on the NRS during the test. Ultrasound was used to score grey-scale synovitis on 0-3 scales in a total of 30 joints in the hands, 26 joints in the feet and the bilateral knee. We defined synovitis as an increase of BMI and waist circumference to the pain scales and synovitis sum scores using linear regression, and to presence of pain sensitization assessed by PPT and TS using linear and logistic regression, respectively. All analyses were adjusted for age, sex and education.

Results: The majority of participants were female (n=266, 89%), and the median (IQR) age was 61 (57-66) years. Persons with higher BMI and waist circumference reported higher pain intensity in their hands, feet, knees and hips (Table). Higher BMI and waist circumference were associated with lower PPTs at the tibialis anterior muscle (Table). No associations were found between BMI/waist circumference and PPTs at the other test sites (data not shown). Persons with higher BMI and waist circumference were more likely to have TS (Table). Increased BMI and waist circumference were not associated with more synovitis in the hands, feet or knees (data not shown).

Table. Data presented as B (95% CI) for the pain measures/PPT value and OR (95% CI) for presence of TS. All analyses were adjusted for age, sex and education.

<table>
<thead>
<tr>
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<th>BMI per SD increase*</th>
<th>Waist circumference per SD increase**</th>
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<tr>
<td></td>
<td>BM1 per SD increase*</td>
<td>BM1 per SD increase*</td>
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<td>(0-10)</td>
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<td></td>
<td>(0-10)</td>
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<tr>
<td></td>
<td>0.5 (0.2, 0.7)</td>
<td>0.3 (0.2, 0.4)</td>
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<td>0.0 (0.0, 0.0)</td>
<td>0.0 (0.0, 0.0)</td>
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<tr>
<td></td>
<td>-0.4</td>
<td>-0.7 (-0.7, -0.7)</td>
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<tr>
<td></td>
<td>1.4</td>
<td>1.1 (1.1, 1.1)</td>
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*Standard deviation (SD)=5.0 kg/m². **SD=12.9 cm.

Conclusion: In the Nor-Hand cohort, persons with higher BMI and waist circumference reported higher pain intensity in their hands, feet, knees and hips. This relation was not explained by higher levels of synovitis in the joints. However, the association may at least partly be driven by a higher prevalence of central pain sensitization in persons with higher BMI. Due to the cross-sectional study design we cannot conclude about causality.

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Fig. 1. Ultrasound-guided identification of GNB target sites. Doppler mode. White arrows indicate genicular arteries. A. Superior medial genicular artery. B. Superior lateral genicular artery. C. Inferior medial genicular artery.

Disclosure of Interests: None declared
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A RANDOMISED PLACEBO-CONTROLLED CLINICAL TRIAL OF CURCUMA LONGA EXTRACT FOR TREATING SYMPTOMS AND EFFUSION-SYNOVITIS OF KNEE OSTEOARTHRITIS (CURKOA TRIAL)

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Background: Pharmacological therapies are limited, associated with off-target effects, are frequently contraindicated, and only modestly effective for pain in osteoarthritis (OA). Effusion and synovitis are common in OA and are associated with symptomatic and structural progression of OA. Curcuma longa (Turmeric) extract has anti-inflammatory effects and is gaining popularity in the treatment of OA despite the lack of high-quality evidence.

Objectives: The CurKOA trial aimed to determine the efficacy of Curcuma longa extract for reducing knee symptoms and effusion-synovitis in patients with symptomatic knee OA and knee effusion-synovitis.

Methods: In this randomised, double-blind, placebo-controlled trial, participants with significant knee pain (≥ 40mm on a 100-mm visual analog scale [VAS]), symptomatic knee OA (by ACR criteria) and ultrasound defined effusion-synovitis were randomised to receive Curcuma longa extract (80% aqueous based extract standardized to turmerosaccharides + 20% curcuminoids, 2 x 500 mg capsules/day) or identical placebo for 12 weeks. Knee MRI scans were obtained at baseline and 12 weeks. Coprimary outcomes were changes in knee pain assessed by VAS and change in knee effusion-synovitis volume assessed by MRI over 12 weeks.

Results: Among 70 participants (36 received Curcuma longa, 34 received placebo, age 61.8±8.6 years, 56% female), Curcuma longa significantly improved VAS knee pain compared to placebo (-9.11mm, 95% confidence interval [CI] [-17.79 to -0.44]) over 12 weeks, equivalent to a standardised effect size of 0.50. There was no significant between-group difference in change in effusion-synovitis volume (3.24mL [-0.33, 6.82]). There were significantly greater reductions in WOMAC knee pain (-472.22mm [-81.22, -13.22]), WOMAC function (-112.26mm [-222.79 to -1.74]) and significantly more OARSI-OMERACT treatment responders (63% treatment vs. 38% placebo [Risk Ratio=1.64 (1.00 to 2.70)]) in the Curcuma longa group compared to the placebo group. There was no significant between-group difference in lateral femoral cartilage T2 relaxation time (-0.38 [-222.79 to -1.74]) and significantly more OARSI-OMERACT treatment responders (63% treatment vs. 38% placebo [Risk Ratio=1.64 (1.00 to 2.70)]) in the Curcuma longa group compared to the placebo group. There was no significant difference in adverse events was similar in the Curcuma longa (n=14 (39%)) and placebo (n=18 (53%)) groups over 12 weeks (P=0.24).

Conclusion: An extract of Curcuma longa significantly improved knee pain in an inflammatory phenotype of knee OA patients over 12 weeks compared to placebo but had no effect on knee effusion-synovitis and cartilage composition assessed using MRI. The moderate effect size of the treatment supports the use of Curcuma longa extract for the symptomatic management of knee OA.

Disclosure of Interests: None declared
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BODY COMPOSITION AS A MEDIATOR IN THE RELATIONSHIP BETWEEN physical activity and PHYSICAL FUNCTION IN LOWER-LIMB OSTEOARTHRITIS: RESULTS FROM THE KOHALA COHORT

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Figure 1. Change in VAS and WOMAC subscale scores in treatment and control groups over the course of the study. (VAS = Visual analog scale, WOMAC = Western Ontario and McMaster University Index, CL = Curcuma longa extract)