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FRI0381

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

M. Gløersen^{1,2}, P. Steen Pettersen^{1,2}, T. Neogi³, T. K. Kvien^{1,2}, K. Magnusson^{1,4}, H. B. Hammer^{1,2}, I. K. Haugen¹. ¹Diakonhjemmet Hospital, Department of Rheumatology, Oslo, Norway; ²University of Oslo, Faculty of Medicine, Institute of Clinical Medicine, Oslo, Norway; ³Boston University School of Medicine, Section of Rheumatology, Boston, United States of America; ⁴Lund University, Faculty of Medicine, Dept. of Clinical Sciences Lund, Orthopaedics, Clinical Epidemiology Unit, Lund, Sweden

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 overweight 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 knees. We evaluated the relation 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 values 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.

	NRS hand pain (0-10)	NRS feet pain (0-10)	WOMAC knee/hip pain (0-20)	PPT tibialis anterior (kg/cm ²)	Presence of TS
BMI per SD increase*	0.5 (0.2, 0.7)	0.7 (0.4, 1.0)	1.3 (0.8, 1.8)	-0.4 (-0.7, -0.1)	1.4 (1.1, 1.8)
Waist circumference per SD increase**	0.5 (0.3, 0.8)	0.6 (0.3, 0.9)	1.3 (0.8, 1.8)	-0.4 (-0.7, -0.1)	1.4 (1.1, 1.8)

*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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FRI0382

EFFECTS OF GENICULAR NERVE BLOCK IN PATIENTS WITH KNEE OSTEOARTHRITIS WHO HAVE NEUROPATHIC OR NOCICEPTIVE PAIN

B. Tas¹, P. Akpınar², I. Aktas^{*2}, F. Unlu Ozkan², I. B. Kurucu². ¹Luleburgaz State Hospital, Kırklareli, Turkey; ²University of Health Sciences Istanbul Fatih Sultan Mehmet Training and Research Hospital, Istanbul, Turkey

Background: Genicular nerve block (GNB) is a safe and effective therapeutic procedure for intractable pain associated with chronic knee osteoarthritis (OA) (1). There is increasing support for the neuropathic component to the knee OA pain. Investigators proposed that targeting treatment to the underlying pain mechanism can improve pain management in knee OA (2). There is a debate on injectable solutions used in nerve blocks (3).

Objectives: To investigate the analgesic and functional effects of USG-guided GNB in patients with chronic knee OA (with/without neuropathic pain) and to evaluate the efficacy of the anesthetic and non-anesthetic solutions used.

Methods: Ninety patients with chronic knee OA between the ages of 50-80 were divided into two groups with and without neuropathic pain according to painDETECT questionnaire (4). The groups were randomized into three subgroups to either the lidocaine group (n=30) or dextrose group (n=29) or saline solutions (n=31). After the ultrasound-guided GNB, quadriceps isometric strengthening exercises and cryotherapy were recommended to the patients. Visual analog scale (VAS), Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and Lequesne-algofunctional Index were assessed at baseline and at 1 week, 1 and 3 months later after the procedure.

Results: Statistically significant improvement was observed in all groups with or without neuropathic pain according to VAS values at the 1st week, 1st month and 3rd month compared to baseline (p<0.05). Statistically significant improvement was observed in all groups with neuropathic pain according to painDETECT values at the 1st week, 1st month and 3rd month compared to baseline (p<0.05). There was a statistically significant improvement in the groups without neuropathic pain which received dextrose and saline solutions, according to painDETECT values, but not in the group which received lidocaine at the 1st week, 1st month and 3rd month compared to baseline (p>0.05). There was a statistically significant improvement in all groups with or without neuropathic pain according to WOMAC and Lequesne total scores at the 1st week, 1st month and 3rd month compared to baseline (p<0.05).

Conclusion: We conclude that in patients with chronic knee OA (with/without neuropathic pain), the use of GNB with USG is an analgesic method which provides short to medium term analgesia and functional recovery and has no serious side effects. The lack of significant difference between the anesthetic and non-anesthetic solutions used in the GNB suggests that this may be a central effect rather than a symptom of peripheral nerve dysfunction. It suggests that injection may have an indirect effect through nociceptive processing and changes in neuroplastic mechanisms in the brain. In addition, we can say that regular exercise program contributes to improved physical function with the decrease in pain.

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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. Inferior medial genicular artery. C. Superior lateral genicular artery.

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FRI0383

A RANDOMISED PLACEBO-CONTROLLED CLINICAL TRIAL OF CURCUMA LONGA EXTRACT FOR TREATING SYMPTOMS AND EFFUSION-SYNOVITIS OF KNEE OSTEOARTHRITIS (CURKOA TRIAL)

B. Antony¹, Z. Wang¹, T. Winzenberg¹, G. Cai¹, L. Laslett¹, D. Aitken¹, I. Hopper², A. Singh¹, R. Jones³, J. Frupp⁴, C. Ding¹, G. Jones¹. ¹University of Tasmania, Menzies Institute for Medical Research, Hobart, Australia; ²Monash University, Department of Epidemiology and Preventive Medicine, School of Public Health and Preventive Medicine, Melbourne, Australia; ³Royal Hobart Hospital, Department of Radiology, Hobart, Australia; ⁴University of Queensland, Biomedical Informatics & Imaging Group, CSIRO Health and Biosecurity, The Australian e-Health Research Centre, Brisbane, Australia

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 (≥ 40 mm 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 (-9.11 mm, 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 (3.24 mL $[-0.33$, $6.82]$). There were significantly greater reductions in WOMAC knee pain (-47.22 mm $[-81.22$, $-13.22]$), WOMAC function (-112.26 mm $[-222.79$ 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 ms $[-1.10$ to $0.34]$) assessed from compositional MRI. The incidence of 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.

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)

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FRI0384

BODY COMPOSITION AS A MEDIATOR IN THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND PHYSICAL FUNCTION IN LOWER-LIMB OSTEOARTHRITIS: RESULTS FROM THE KHOALA COHORT

M. Wiecek^{1,2}, C. Rotonda^{1,3}, J. Sellam⁴, F. Guillemin^{1,5}, A. C. Rat^{1,6}. ¹Université de Lorraine, EA 4360 APEMAC, Nancy, France; ²University Hospital Zurich, Waid City Hospital, Centre on Aging and Mobility, and University of Zurich, Zurich, Switzerland; ³Université de Lorraine, Centre Pierre Janet,