

SAT0433 CONSENSUS STATEMENT ON THE MANAGEMENT OF PREOPERATIVE PAIN IN PATIENTS WITH TOTAL KNEE AND/OR HIP REPLACEMENT

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Background: Total knee replacement (TKR) and total hip replacement (THR) are performed to provide pain relief and restore physical functioning. Several preoperative factors have been associated with poor postoperative pain including a high preoperative pain.

Objectives: To develop recommendations for preoperative pharmacological pain management in patients undertaking TKR and/or THR due to osteoarthritis based on the best evidence and experience.

Methods: Recommendations were generated following nominal group methodology and Delphi technique. A panel of experts as established (5 orthopedics, 1 anesthesiologist) that defined in the first panel meeting the scope and purpose of the consensus document, chapters and preliminary recommendations. Three systematic literature reviews were performed and sent to the panel in order to help define recommendations: 1) efficacy (on postoperative pain) and safety of preoperative analgesia in TKR and THR; 2) efficacy (on postoperative pain) and safety of pre-emptive analgesia in TKR and THR; preoperative predictors of postoperative pain in TKR and THR. A first draft of recommendations was generated and circulated for comments and wording refinements. Then, an electronic Delphi process (2 rounds) was carried out. A total of 38 orthopedics and anesthesiologists took part in the Delphi. Recommendations were voted from 1 (total disagreement) to 10 (total agreement). We defined agreement (GA) if at least 70% voted ≥ 7 . The level of evidence (LE) and grade or recommendation (GR) was assessed using the Oxford Centre for Evidence-based Medicine Levels of Evidence.

Results: A total of 21 recommendations were developed. The recommendations cover the preoperative pharmacological pain management, evaluation and monitoring of treatment and pre-emptive treatment. Some recommendations are: Once the surgery is indicated, a proper treatment to relief disease symptoms and signs should be followed (LE 5; GR D; GA 100%); The panel recommends to carefully evaluate previous pharmacological treatments in patients who will undertake a TKR or THR in order to define the treatment until surgery (LE 5; GR D; GA 95%); It is recommended to encourage patients to lose weight and maintain their weight at a lower level (especially those with obesity) and maintain physical activity as much as possible (LE 2a; GR B; GA 100%); The use of NSAID (oral and topical) to control preoperative pain (unless is contraindicated) is recommended in patients undergoing TKR or THP (LE 1a; GR A; GA 86%); The panel could not recommend or not recommend the use of acetaminophen or tramadol (LE 1a; GR A; GA 67%); The use of glucosamine, chondroitin sulphate, hyaluronic acid or antiepileptic drugs are not recommended (LE 1b; GR A; GA 86%); Intraarticular injections with corticosteroids can be used (LE 1a; GR A; GA 81%).

Conclusions: In patients who will undertake a TKR or THP, a proper evaluation of the surgery indication, pharmacological pain management, and patient and treatment monitoring, could improve postoperative pain.

Disclosure of Interest: None declared

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SAT0434 VALIDATION OF A PROPOSED ULTRASONOGRAPHIC GRADING SCALE FOR SEVERITY OF PRIMARY KNEE OSTEOARTHRITIS

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Background: Conventional radiography (CR) is the standard imaging modality in the assessment of knee osteoarthritis (KOA), but Ultrasonography (US) is recognised as a useful imaging modality for the detection of synovitis and osteophytes [1].

Objectives: to validate a proposed ultrasonographic grading scale for severity of primary knee osteoarthritis.

Methods: The study included 160 knee primary osteoarthritis (KOA) patients with diagnosed according to the clinical or the radiological criteria for of the American College of Rheumatology (ACR) and 20 patients with knee pain but not fulfill ACR criteria for KOA.

All patients were subjected to clinical assessment (Western Ontario and McMaster Universities (WOMAC) Index of Osteoarthritis and global visual analogue scale (VAS) and radiological assessment in the form of x ray grading according to Kellgren and Lawrence (KL) grading scale (0-4), 2 and ultrasonographic assessment of medial femoral osteophytes according to a scale (0-4) that was proposed by the first author as follow: grade 0: No osteophytes; regular ends of both femoral condyle without any projections, grade 1: minor osteophyte; just a small projection

from the femoral condyle, grade 2A: Small osteophytes; a projection from the femoral condyle that appears to have a downward part in joint space zone, grade 2B: Large osteophyte appears to be separated from femoral condyle and descending downwards in joint space zone, grade 3: Large osteophyte appears to be separated from femoral condyle and descending downwards in joint space zone with small horizontal extension parallel to femoral bone, grade 4: Mainly horizontal osteophyte parallel to femoral bone.

Results: The proposed Ultrasound grading scale had high sensitivity and specificity in detecting the different grades of KOA compared with KL grading scale (a total sensitivity is 94.6% and a total specificity is 93.3%). Intra and inter-reader reliability of ultrasound was excellent (kappa >0.93 and >0.85 respectively). The proposed US grading scale was highly significantly correlated with age, disease duration and body mass index. While there was non-significant correlation between the proposed US grading scale and VAS and WOMAC subscales and total scale.

Conclusions: Ultrasound can reliably detect the severity of knee osteoarthritis. Good agreement was found between the proposed US grading scale and KL grading scale. The proposed US grading scale is simple and reliable.

References:

[1] Abraham AM, et al. BMC Musculoskelet Disord. 2011;14:70.

[2] Kellgren JH, Lawrence JS. Oxford: Blackwell Scientific; 1963.

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SAT0435 KNEE OSTEOARTHRITIS AND PERIARTICULAR STRUCTURE QUANTIFIED BY ULTRASOUND. A CASE-CONTROL STUDY

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Background: Assessment of pain and physical function is complex in patients with knee osteoarthritis (OA), as standard criteria are lacking. A previous study examining correlations between functional capacity and pain (WOMAC) and anthropometric characteristics and periaricular knee structure (quantified by ultrasound imaging) in females with knee OA found increased quadriceps muscle density was associated with higher functional disability and pain scores, suggesting that not only joint wear and symptom severity are involved and more objective measures are necessary.

Objectives: To determine and compare the periaricular knee structure in obese patients with knee OA and a healthy control group.

Methods: Analytical case-control study. **Study group.** Patients diagnosed with knee OA. **Control group.** Adults with no history of knee involvement, able to walk normally, with no pain or functional difficulties on examination and no history of surgery in other lower limb joints. Controls were matched for age, sex and body mass index (BMI). Sociodemographic, clinical, functional (Timed Up and Go test [TUG]) and anthropometric (weight, height, BMI, waist circumference, and lower limb [suprapatellar and infrapatellar indices]) data were collected. Periaricular knee structure was assessed by ultrasound (thickness of subcutaneous fat [distance from skin to fascia, in mm] and quadriceps/rectus femoris [distance between fascia and femur, in mm]) and appearance [density on digital image analysis according to Maurits et al]. **Statistical Analysis.** Groups were compared using the t test for continuous variables and χ^2 test for categorical variables.

Results: 66 lower limbs from 14 patients (mean age 62.7 [SD 8.6]) years, BMI 30.4 (SD 5.9) and 19 matched controls (mean age 62.6 [SD 8.1] years, BMI 30.1 [SD 4.7]) were evaluated. Comparison between groups: no significant differences in anthropometric measures were found. TUG took a mean 13.7s (6.7) and 9.9s (2.4) in patients and controls, respectively, $p=0.002$. Mean subcutaneous fat was 18.7 (SD 9.8) mm and 15.2 (4.4) in patients and controls, respectively, $p=0.028$. Mean quadriceps muscle density was 61.1 (25.9) and 41.7 (13.7), respectively, $p=0.001$.

Conclusions: Between-group differences were found in the periaricular knee structure. Patients with knee OA had increased subcutaneous fat thickness and quadriceps muscle density was observed compared with controls. These findings suggest that the assessment of periaricular structures in these patients analyzed by digital image derived from ultrasound could add a variable to determine more objectively uniform methods in the classification of patients and evaluation of results.

References:

[1] Maurits NM et al. Muscle ultrasound analysis: normal values and differentiation between myopathies and neuropathies. Ultrasound Med Biol 2003;29:215-25.

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