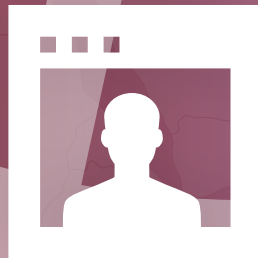WORLD CONGRESS
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INFLUENCE OF AGE-RELATED LOSS OF MUSCLE AND BONE MASS ON THE SEVERITY OF KNEE OSTEOARTHRITIS IN AN IRANIAN POPULATION

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Objective: Osteoarthritis (OA) is one of the common causes of disability in the world that makes degenerative changes in the joint. Knee is the most common joint affected by osteoarthritis. The aim of this study was to evaluate the relationship between the severity of knee OA and muscle mass, muscle strength, muscle function and bone mass.

Methods: In this cross-sectional study, we included 119 subjects (aged ≥50) with clinical & radiologic knee OA (according to American College of Rheumatology (ACR) classification criteria & radiologic Kellgren-Lawrence criteria). WOMAC and visual analogue scale were used to measure pain and physical disability. Body composition was measured using DXA. Appendicular skeletal muscle mass (ASM) for each participant was derived as the sum of upper and lower limb muscle mass and the skeletal muscle mass index (SMI) as $ASM/height^2$ (kg/m^2). Handgrip strength was measured using a digital dynamometer 3 times for each hand. Usual walking speed (m/s) on a 4.57-m course was used as an objective measure of physical performance.

Results: Of 119 patients included in this study, 69.7% (n=1144) were women with an average age of 62.08±7.69 y. We found a significant inverse association between WOMAC scores and ASM, SMI, Handgrip strength, walking speed and femoral neck T-score and also direct correlation with total fat percent (all p≤0.05). After adjusting for clinical variables, decreased SMI and handgrip strength associated with moderate WOMAC scores but not with severe OA. Also, fat mass percent was a risk factor for moderate WOMAC score in the full model (OR=1.23, 95%CI 1.08-1.41).

Conclusion: Lower muscle mass, lower muscle strength, and high-fat mass were associated with severity disability of knee OA.

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COST-EFFECTIVENESS ANALYSIS OF SARCOPENIA SCREENING STRATEGIES IN IRAN

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Objective: Sarcopenia is an important age-related disease which can lead to an increased risk of mortality, falls, fractures, and poor quality of life. So timely detection can be effective in reducing the burden of disease. The aim of this study was to identify the most cost-effective strategy for Sarcopenia screening in Iran.

Methods: We constructed a Markov transition model over a life-time horizon based on natural history. Compared Strategies included Sarcopenia Scoring Assessment Models Iran (SarSA-Mod), EWGSOP, Mini Sarcopenia Risk Assessment (MSRA) and SARC-F. Parameters values were extracted from primary data and the literature, and the costs and quality-adjusted life-years (QALYs) were calculated for each strategy. Sensitivity analysis of uncertain parameters was also performed to determine the robustness of the model. Analysis was performed using the 2011 version of TreeAge Pro software.

Results: All four screening strategies increased lifetime QALYs. After removing the dominated strategy, the incremental cost per QALY gained for Sarcopenia screening varied from $2719 for EWGSOP to $6725 for SARC-F, compared with the next best Strategy. Our base-case analysis showed that the most cost-effective strategy was EWGSOP and 2nd best was SarSA-Mod with $26752 and $26509 net monetary benefits given one GDP per capita ($5400) as Willingness to pay, respectively. Sensitivity analysis of model parameters also showed robustness of results.

Conclusion: The results of the study, as the first economic evaluation of sarcopenia screening, showed that the EWGSOP strategy is more cost-effective than other strategies, despite the higher cost.

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DEVELOPMENT OF THE RUSSIAN NATIONAL REGISTRY FOR THE PATIENTS ENROLLED TO FRACTURE LIAISON SERVICES

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Objective: Fracture Liaison Services (FLS) aimed to prevent secondary fracture in fragile fracture patients, are established in many countries of the world. Since 2018, 15 new FLS have been established in health care settings in different parts of the Russian Federation. A common national FLS patients' database can provide the unified data for further analysis of FLS effectiveness, as well as to help a particular FLS to follow-up patients in a proper way according to national guidelines and to address the specific clinical situations. We aimed to create a common Russian national database of low energy fracture patients recruited to FLS.

Methods: In June 2019, the Russian Association on Osteoporosis started a project for developing a registry of low energy fractures patients recruited to FLS (Prometheus Registry). The Registry aims to include not only the patients' background demographic and clinical information but also their clinical data during the follow-up. This will help to resolve management issues and to make clinical decisions where necessary. An informational system was created for storing, searching, processing information on the Quinta platform in the remote online access mode. The RAOP working group developed a Clinical Registration Form and Informed Consent Form which were discussed with the FLS leaders at the special workshop. Only authorized FLS staff has access to the database. In October, 2019, four FLS started to enter the patients' personal data.

Results: Currently, the Prometheus database includes the data on the first 61 patients newly enrolled to FLS. Their average age was 71 y. The most common fracture was hip (39%) followed by humerus (25%), vertebral (15%) and distal forearm (20%) fractures. 48 (78.7%) patients had a previous history of fracture. In all patients the FRAX tool was used to assess the risk of subsequent fractures, and DXA was performed in 26 (42.6%). In patients with hip and vertebral fractures osteoporosis was diagnosed without DXA scan. The risk of falls was assessed in all 61 patients, and it was high in 52 (85.3%). Laboratory tests to determine the causes of secondary osteoporosis were performed in 59 (96.7%). Mild hypocalcemia was detected in 18 (31.5%) patients. Calcium and/or vitamin D supplements were prescribed in 57 (93.44%) cases, and antiosteoporotic therapy (mainly with antiresorptive drugs) was started in 33 (54.1%) patients.

Conclusion: The FLS Registry is a very important tool to improve care for patients with osteoporotic fractures. It can provide a help not only in clinical decision making but also in a quality control. With more patients included into the database it will be possible to analyze the clinical and economic effectiveness of FLS in Russia.

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EFFICACY OF PHYSICAL EXERCISE PROGRAM COMBINED WITH ANALGESIC MEDICATION IN PATIENTS WITH KNEE OSTEOARTHRITIS

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Objective: To assess the efficacy of physical exercise program combined with analgesic medication on functional status and quality of life in patients with knee osteoarthritis (OA).

Methods: The prospective study included 144 participants with knee osteoarthritis based on American College of Rheumatology diagnostic criteria that were randomly assigned in two lots: lot A- with exercise program (72 patients) and lot B- with medication and exercise program. The medication was a combination of 37.5 mg of tramadol hydrochloride with 325 mg of paracetamol. They followed a 12-d ambulatory exercise program based on increasing knee flexion, muscular strength and endurance, improving balance, coordination, respiratory exercises. The evaluation was at the beginning of the study (T0), after 2 weeks (T1) and 8 weeks (T2) using: knee mobility, pain on a visual analogue scale (VAS), functional status (WOMAC), quality of life using SF-36 Questionnaire (36-Item Short Form Survey).

Results: In lot B, knee flexion increased from 15% at T0 to 59% at T2; for the control lot joint mobility increased from 11% to 45%. Concerning pain assessment on a VAS, 66% of the patients in lot B had a score higher than 5 at the initial assessment; at T1 their number decreased at 50% and at T2 the proportion was of only 8%. At T0, 62.3% of the patients from lot A and 60.3% of the patients from lot B presented a WOMAC score higher than 2. After 8 weeks, most of the patients (90% from the lot A and all patients from lot B) presented a score of 1 (considered as low). The results after 8 weeks of treatment were statistically significant (p<0.05) for all of the SF-36 Questionnaire domains. Testing the linear correlations between SF-36, VAS (r=0.71, p<0.05) and WOMAC (r=0.83, p<0.05) demonstrates a high positive relation between indicators.

Conclusion: The physical exercise program in combination with analgesic medication improves both functional status and quality of life in patients with knee OA. Analgesic medication reduces pain and increases patient's adherence to kinetic programs.

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INTERPRETING CHINESE GUIDELINES FOR THE MANAGEMENT OF OSTEOARTHRITIS (2018)

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Osteoarthritis (osteoarthritis, OA) is a joint degenerative disease that seriously affects the quality of life of patients. It is expected to become the fourth disabling disease by 2020, causing a huge economic burden on patients, families and society. In 2007 The Osteoarthritis Diagnosis and Treatment Guideline issued by the Chinese Orthopaedic Association has played a huge role in guiding and standardizing the diagnosis and treatment of OA in China.

In order to timely reflect the new proceedings of evidence-based OA pharmacological and surgical treatment, and to optimize the diagnosis and treatment strategy of OA, since June 2017, the Joint Surgery Study Group of Chinese Orthopaedic Association and the Chinese Orthopedic Journal's editorial department organized domestic experts in the field of joint surgery to update the original guidelines based on the latest developments in OA pharmacological and surgical treatment in recent years, following scientific, practical, and rigorous principles of guideline development. The guideline was written and submitted by the Joint Surgery Group of the Chinese Orthopaedics Association, and the corresponding author is Professor Wang Kunzheng.