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FRI0553

THE ROLE OF AGE-RELATED SARCOPENIA IN OSTEOARTHRITIS OF LOWER EXTREMITY

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Background: Sarcopenia, defined as the age-related loss of muscle mass and low muscle function.¹ The prevalence of sarcopenia worldwide by meta-analysis of 35 articles was 10% (95% CI: 8%–12%) in men and 10% (95% CI: 8%–13%) in women, respectively.² A review of the literature on osteoarthritis (OA) and sarcopenia has shown that the age factor that contributes to the development of OA includes a decrease in muscle strength. In people with OD of the lower extremity, the frequency of falls was increased by a factor of 2–5.³ OA contributed to the development of sarcopenia in elderly women.⁴

Objectives: Perform body composition and muscle analysis in patients with osteoarthritis and identify risk factors for sarcopenia that affect patients with osteoarthritis.

Methods: Prospective study of 159 women, mean age 74±13.3. The walking speed, handgrip strength were evaluated to apply the European Working Group on Sarcopenia. Assessment of appendicular skeletal muscle mass (ALM/h²) and total body fat were assessed using DXA, on Hologic Explorer machines. Covariates were determined by questionnaires and interviews.

Results: 31.45% of people with OA older than 65 years had sarcopenia. Patients with OA had a decrease in muscle strength and function, regardless of sarcopenia. Statistically significantly more frequent in patients with OA were lower indexes of lean mass index (ALM/h²) and body mass index (BMI) (p<0.01). The incidence of sarcopenia increased with age (p<0.01). 61.5% of patients with sarcopenia significantly more often had high values of c-reactive protein – CRP (x²=31.18, p<0.0001). Patients with sarcopenia were statistically significantly more likely to have vitamin D deficiency than patients without sarcopenia (x²=8.11, p<0.01). Cases of falls were observed in 90% of patients with sarcopenia (x²=79.29, p<0.001). Low physical activity 86% of patients with sarcopenia are statistically significantly higher than in patients without sarcopenia (95% CI: 73.3–94.2, p<0.01).

Conclusions: With age, patients with sarcopenia and OA had a significant decrease in muscle mass and physical activity, an increase in the incidence of falls. Patients with sarcopenia had high CRP levels and vitamin D deficiency than patients without sarcopenia.

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Diagnostics and imaging procedures

FRI0554

WHICH AXIAL MAGNETIC RESONANCE IMAGING COMBINATION IS OPTIMAL FOR ASSESSING ACTIVITY IN SPONDYLOARTHRITIS?

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Background: None

Objectives: To determine the optimal axial Magnetic Resonance Imaging (MRI) combination for assessing disease activity in spondyloarthritis

Methods: In this single centre cross-sectional study, patients with a known diagnosis of axial spondyloarthritis were selected. Clinical activity was defined by an Ankylosing Spondylitis Disease Activity Score-CRP (ASDAS-CRP) ≥1.3. Bone marrow oedema was quantified by the Berlin spine score and the global score for sacroiliac joints (SIJ). The ASDAS-CRP and MRI activity evaluation of the full spine and SIJ were available in the entire cohort. Receiver operating characteristic curves were done to test the performance of different MRI combinations in identifying patients with ASDAS-CRP ≥1.3. Performance was interpreted as follows: 0.61–0.70=fair, 0.71–0.80=moderate. A pairwise comparison of the area under the curves (AUC) was made to rank these MRI scores according to their diagnostic performance.

Results: 44 patients were assessed (30 were men; mean age was 37 years; mean disease duration was 5.0 years; median serum CRP level was 4.0 mg/L; mean ASDAS-CRP was 2.6; n=36 with ASDAS≥1.3, and n=8 for ASDAS<1.3). MRI activity score (MRIAS) performance was moderate for thoracic spine alone and SIJ in combination with thoracic spine or thoraco-lumbar spine or cervico-thoracic spine or total spine. Performance was fair for SIJ alone and total spine alone. MRIAS yielded the highest specificity for SIJ alone (Se=44%, Sp=100%), and the highest sensitivity for thoracic spine alone (Se=89%, Sp=50%). MRIAS for SIJ in combination with the thoracic spine yielded the highest AUC (0.78, p=0.0002). However, no significant difference was observed between MRIAS with a moderate performance (p>0.05, whatever AUCs comparisons).

Conclusions: For assessing disease activity in axial spondyloarthritis MRI of the SIJ in combination with the thoracic spine performed as good as MRI based on a more extended imaging of the spine.

Disclosure of Interest: None declared

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FRI0555

MUSCLE ELASTOGRAPHY AS A POTENTIAL NOVEL IMAGING BIOMARKER IN MYOSITIS

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Background: Idiopathic inflammatory myopathies are a group of autoimmune muscle disorders characterised by muscle pain, stiffness and weakness. Diagnosis can be challenging; it relies on subjective clinical assessments, expensive MRI scans and invasive muscle biopsies. Novel quantitative ultrasound technologies like shear wave elastography could provide a new valuable non-invasive bedside imaging biomarker for diagnosis and management.

Objectives: 1-to determine if there are muscle elasticity differences between myositis patients and healthy controls. 2-to test the correlation between elasticity and measures of strength, function and muscle enzymes (disease activity).

Methods: Muscle elasticity, evaluated using shear wave velocity (SWV), was measured in 16 active myositis patients (5 males/11 females; 5 dermatomyositis, 5 polymyositis, 2 inclusion body, 4 undifferentiated) with a mean age of 51.3 years and 26 healthy controls (8 males/20 females) with a mean age of 42.0 years. Active myositis was defined as a decreased muscle strength and an elevated muscle enzyme. The investigated muscles included the four quadriceps [vastus lateralis (VL), rectus femoris (RF), vastus medialis (VM) and vastus intermedius (VI)], the three hamstrings [biceps femoris (BF), semitendinosus (ST) and semimembranosus (SM)] and the biceps brachii (BB). The myositis patients performed the expanded timed-get-up-and-go (ETGUG) test to assess walking function in addition to the handgrip strength and isokinetic knee extension/flexion tests to assess muscle strength. Mann-Whitney test and Spearman's correlation coefficients were utilised to test for difference and correlation respectively.

Results: Myositis patients had a significantly lower SWV (p<0.001) in all muscles except the BB (table 1 and figure 1). The mean elasticity difference ranged from 12% for VM to 21.1% for SM (table 1). Muscle enzyme (creatine kinase) correlated with SWV for the VM (r=0.50; p=0.04) and BB (r=0.55; p=0.03). A strong correlation was detected between ETGUG walking time and VL (r=-0.73) as well as VI (r=-0.64). Handgrip strength correlated with VL, RF and BF (r=0.64, 0.56 and 0.62 respectively). There was, however, no significant correlation between SWV and isokinetic knee strength.