Results: In 27 men and 12 women. The CCD median was 7.5 [7.0; 8.2] mm. The BASFI median was 2.0 [0.4; 3.5]. All patients underwent clinical, radiological, and MRI scans of HJ. For ultrasound coxitis was considered if articular erosion, synovitis, and contrast enhancement (arrow) were identified in the study population using MRI: synovitis was identified in 36 (92%) patients, bone marrow edema (BME) – in 1 (3%), and combination of synovitis with BME was observed in 2 patients (5%).

Conclusion: Ultrasound allows you to detect changes in H in the early stages of the disease. It is possible to use ultrasound as a screening method to determine the presence of synovitis in the TBS. MRI HJ with AxSpA, allows to determine whether the patient has inflammatory changes, including in the absence of radiological changes in these joints. In 15% of cases, coxitis is asymptomatic at early stages, which requires a thorough examination of patients with AxSpA. In addition to clinical and radiological examination, all patients were subjected to MRI with T1 and STIR modes.

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SA10534 MAGNETIC RESONANCE IMAGING MARKERS IMPROVE THE PREDICTION MODEL FOR TOTAL KNEE REPLACEMENT OVER 13 YEARS IN OLDER ADULTS

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Background: Quantitative and semi-quantitative measurement of structural changes on MRI have been widely adopted in knee osteoarthritis (OA) research. However, few long-term studies describe the independent association of these structural factors and total knee replacement (TKR) in older adults.

Objectives: To describe whether cartilage defects, bone marrow lesions (BMLs), effusion-synovitis, and meniscal pathologies at baseline are associated with TKR over 13 years and to estimate the additive effect of these measures for risk prediction of TKR.

Methods: 1082 participants (mean age 62.8 years, 50% female) were randomly recruited from Tasmania and followed over 13.3 years. A 1.5T MRI scan of the right knee was acquired at baseline (n=930). Cartilage defects (grade 0-4), BMLs (grade 0-3), effusion-synovitis (grade 0-3), meniscal tears (grade 0-3) and meniscal extrusion (grade 0-2) was scored at baseline using T1-weighted and T2-weighted MRI. WOMAC knee pain was recorded from questionnaires and radiographic OA (ROA) was assessed by OARSI scale. The incidence of primary (first-time) TKR was determined by data linkage to the Australian Orthopaedic Association National Joint Replacement Registry (OAANJRR). Log binomial regression models were used to estimate the risk of TKR associated with baseline MRI measures, adjusting for age, sex, BMI, ROA, and pain. Receiver operating characteristic (ROC) analyses were used and area under the curves (AUCs) were compared.

Results: After adjustment for age, sex, BMI, and ROA status, baseline cartilage defects (grade 2, RR=6.71; grade 3, RR=11.17; grade 4, RR=13.2; all p<0.01) were consistently and significantly associated with TKR over 13 years. These associations remained significant after further adjustment for other MRI pathologies. BMLs (grade 1, RR=2.4, p<0.05) and suprapatellar effusion-synovitis area were associated with TKR over 13 years. These associations remained significant after further adjustment for other MRI pathologies. BMLs (grade 1, RR=2.4, p<0.05) and suprapatellar effusion-synovitis area were associated with TKR over 13 years. However, these associations of BMLs and effusion-synovitis with TKR were largely dependent on cartilage defects. Those who had TKR all had a meniscal tear at baseline, with 96% of them having a grade 3 tear.

Compared to the baseline model with age, sex, BMI, and ROA status, baseline cartilage defects (grade 2, RR=6.71; grade 3, RR=11.17; grade 4, RR=13.2; all p<0.01) were consistently and significantly associated with TKR over 13 years. These associations remained significant after further adjustment for other MRI pathologies. BMLs (grade 1, RR=2.4, p<0.05) and suprapatellar effusion-synovitis area were associated with TKR over 13 years. However, these associations of BMLs and effusion-synovitis with TKR were largely dependent on cartilage defects. Those who had TKR all had a meniscal tear at baseline, with 96% of them having a grade 3 tear.

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Conclusion: Baseline knee MRI structural pathology markers can predict TKR over the long-term, suggesting that MRI structural markers are good predictors of rapid knee OA progression in the general population.
Antibodies in Diagnostic Utility of Positron Emission Tomography for the evaluation of patients with inflammation of unknown origin

Results: • Morning stiffness, joint erosions in plain X-rays, inflammatory markers, ACPA and anti-CarP antibodies were significant differentiating points between RA and HCVrA (p<0.001, p<0.001, p=0.008, p<0.001 and p<0.001, respectively), while the differences between RA and HCVrA groups regarding symmetry of joint symptoms and level of RF were not significant (p=0.507, p=0.110, respectively).

Table: Comparison between groups II and III according to serological markers

- Anti-CarP antibodies were detected in the sera of 12.5% of HCV patients (10% with and 15% without articular symptoms) in comparison to 75% of RA patients. The difference between the two groups was statistically significant (p<0.001).

- ACPA were detected at low titers in 15% of HCV patients (with and without articular involvement).

- There was a significant positive correlation between RF and anti–CarP antibodies (r=0.386) and between ACPA and anti–CarP antibodies in the total sample studied (r =0.399).

Conclusion: The presence of anti-CarP antibodies together with clinical features could discriminate RA patients from HCVrA patients. The detection of ACPA and anti-CarP antibodies in few HCV patients should be interpreted with caution. Simultaneous detection of both anti-CCP and anti-CarP antibodies could be of great value in differentiating RA from other mimicking conditions like HCVrA.

REFERENCES


Anticarbohydrated Antibodies in Discrimination between Rheumatoid Arthritis and Chronic Hepatitis C Induced Arthropathy Patients

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Background: Rheumatoid arthritis (RA) is an autoimmune disease presenting by chronic joint inflammation. Early diagnosis and therapy of RA are crucial for avoiding joint damage and functional disability. HCV related arthropathy (HCVrA) is one of the RA mimics that is detected in around 52.2% of HCV patients. The discrimination between HCVrA and RA is a challenge especially in early onset RA because of their similar manifestations. Detection of certain serologic markers in sera of arthritis patients could be helpful to differentiate between both types of arthritis. Besides RF and ACPA, anti-Carbamylated Protein (anti-CarP) antibodies were described for their role in early identification of RA, as they can be found in up to 45% of early RA patients. Moreover, they can be detected in ACPA-negative RA patients.

Objectives: To determine the role of anti-CarP antibodies in the differentiation between RA and HCVrA.

Methods: This study was carried out on 4 groups: Group I:20 patients with chronic HCV infection, group II:20 Patients with HCVrA, group III:20 Patients with RA fulfilling the 2010 (ACR/EULAR) classification criteria and group IV:20 Patients with both chronic HCV infection and RA.

All patients were subjected to detailed history taking and musculoskeletal examination. Routine laboratory investigations were done for all patients in addition to ESR,CRP, RF, ACPA and anti-CarP antibodies. Plain X ray hands and feet were performed to all patients with arthritis.

Results: • Anti-CarP antibodies were detected in the sera of 12.5% of HCV patients (10% with and 15% without articular symptoms) in comparison to 75% of RA patients. The difference between the two groups was statistically significant (p<0.001).

Figure 1: ROC (receiver operating characteristic) curves of prediction models using combinations of semi-quantitative MRI measures.
The REMS technique is not affected by the level of agreement between clinical examination and ultrasonography in early arthritis.

Objectives: To evaluate the agreement between clinical examination and ultrasonography in early arthritis and to determine if these techniques can be used to identify early arthritis and institute appropriate treatment.

Methods: This study comprised 68 (36 male, mean age 58.7±14.8, range 19-87 years) adult IJO patients who had not received any previous diagnostic and/or treatment for an inflammatory or malignant disease. Subjects were screened with REMS CT after 8 hours fasting, if a specific diagnosis could not be established with comprehensive evaluation including: meticulous history and physical examination, pertinent microbiologic cultures, brucella agglutination, Mantoux test, serum protein electrophoresis, echocardiography, plain x-rays, computed tomography of thorax and abdomen/pelvis.

Results: Final diagnosis was established in follow up were inflammatory diseases in 37 (54.4%), malignant disorders in 16 (23.5%) and infections in 9 (7.4%), whereas a final diagnosis cannot be made in 10 (14.7%). PET CT aided diagnosis in 40 (58.8%) patients but was ineffective in 28 (41.2%). All three PET CT positive subjects with a final diagnosis of infection had tuberculosis (1). On of two PET negative subjects had EBV and one other also had tb. PET CT was positive in 24 of 37 (64.9%) patients with a final diagnosis of inflammatory rheumatic disease. Because of small number of miscellaneous rheumatic diseases, diagnostic value of PET CT cannot be evaluated in these.

Conclusion: Investigation of underlying etiology of IJO is time and effort consuming. PET CT may help to identify final diagnosis more quickly by directing an obscure inflammatory site. PET CT may also have advantages like reducing number of unnecessary biopsies, diagnostic time, anxiety, work loss, morbidity and mortality.

REFERENCES

Disclosure of Interests: None declared


THE REMS TECHNIQUE IS NOT AFFECTED BY ARTHROLOGY ARTIFACT, WHICH CAN HINDER THE DENSITOMETRIC RECOGNITION OF OSTEOPOROSIS

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Background: The measurement of bone mineral density (BMD) with dual-energy X-ray absorptiometry (DXA) is the current “gold standard” for diagnosing and monitoring osteoporosis, any errors in demographic information, improper patient positioning, incorrect scan analysis or interpretation can lead to erroneous results and decisions [1]. Moreover, a common condition represented by osteoarthritis, by modifying the joint soft tissue composition, can alter the values of BMD [2]. In patients affected by discarthrosis, in fact, osteoprotic T-score values at femoral neck (FN) and/or osteoporotic T-score values at lumbar spine (LS) can be associated with normal or osteoprotic T-score values of the lumbar spine (LS), the latter influenced by the presence of osteophytes and/or subchondral bone sclerosis.

Objectives: To evaluate the predictive value of an innovative densitometric technique, the Radiofrequency Echographic Multi Spectrometry (REMS) [3], in detecting bone fragility in patients affected by osteoarthritis.

Methods: The T-score values of 35 postmenopausal women with clinical and/or radiologic signs of osteoarthritis (mean age 71 years, average BMI 24.2) obtained by DXA at lumbar spine and femoral neck were compared with those obtained by REMS technique performed in the same anatomical sites.

Results: In all the subjects, LS T-score resulted significantly higher than the FN one according to DXA measurement. However, REMS outcomes in both the sites were significantly lower than the corresponding DXA measurement (significant difference between DXA and REMS T-score for both LS (p = 0.006) and FN (p = 0.010), and spinal REMS T-scores resulted more similar to femoral REMS (average REMS T-score LS: -2.6 ± 1.6 vs T-score FN: -2.4 ± 0.6) and to femoral DXA values.

Conclusion: These preliminary data suggest that REMS technique, which has been shown to have high sensitivity, specificity and accuracy when compared with DXA in diagnosing and monitoring osteoporosis [3], is not affected by the presence of altered soft tissues composition. It would therefore be particularly useful for the evaluation of bone fragility in subjects at risk of osteoarthritis.

REFERENCES

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The Level of Agreement Between Clinical Examination and Ultrasonography in Early Arthritis

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Background: Over the past decades, Early Arthritis Clinics (EAC) have been created to identify early arthritis and institute appropriate treatment as soon as possible. In Rheumatoid Arthritis (RA) many studies show that ultrasonography (US) is superior to clinical exam for the detection of synovitis and has good correlation with clinical findings and markers of inflammation and can be used to improve the certainty of a diagnosis of RA [1]. However, few studies address the agreement between the US and the clinical examination in patients with early arthritis.

Objectives: To evaluate the agreement between clinical examination and US findings of metacarpophalangeal and proximal interphalangeal joints of patients with early arthritis.

Methods: Patients from the EAC of our department with suspect arthralgia were included. Patients were submitted to clinical evaluation by a rheumatologist to identify tender and swollen joints. They were then submitted to an US examination of metacarpophalangeal (MCP) and proximal interphalangeal (PIP) joints, by an experienced sonographer oblivious of the previous examination. Each joint was scored for the presence of synovial hypertrophy (SH) and Power Doppler (PD) signal. Based on OMERACT guidance, we defined synovitis as: ≥ grade 1 grey scale synovitis (hypoechoic SH regardless of the presence of effusion) and ≤ grade 1 power-Doppler (PD) signal. The diagnostic value of clinical evaluation was assessed through sensitivity, specificity, Negative predictive value (NPV) and Positive predictive value (PPV), assuming the US synovitis as gold standard. Clinical arthritis was defined by joint swelling. Cohen’s kappa coefficient was used to analyze concordance between joint swelling appreciated by clinical exam and HS, PD and the presence of US synovitis. Kappa values < 0 were considered poor, 0-0.20 slight, 0.21-0.40 fair, 0.41-0.60 moderate, 0.61-0.80 good and 0.81-1.00 excellent. Statistical significance was defined as p<0.05. Statistical analysis was performed using IBM SPSS Statistics, version 21.0.

Results: 77 consecutive patients were included (53.2% female) with a mean age of 53.8±19.1 years. We evaluated 770 MCP and 770 PIP joints. The sensitivity and specificity of clinical examination in relation to US synovitis was respectively 71% and 60% for MCP and 54.5% and 43.9% for PIP. The NPV and PPV for MCP were 87.8% and 33.3% respectively, and for PIP were 85.3% and 13.9%. The level of agreement between joint swelling and HS, PD and the presence of synovitis is shown on Table 1.