method for fat suppression. Three studies investigated the role of gadolinium in the SIJs, and overall found minimal added value. Bone marrow oedema of the sacroiliac joint (SIJ) was found to be the most sensitive and specific lesion in the diagnosis of axSpA in seven studies. Sensitivity and specificity were increased by including other structural lesions, particularly bone marrow fat or erosions. Four studies addressed the utility of SIJ fat infiltration, demonstrating good sensitivity but relatively poor specificity. A number of studies addressing erosions, high T1 signal in the SIJ, fluid signal in the SIJ, ankylosis, sclerosis, capsulitis, backfill and vacuum phenomenon reported low to moderate diagnostic performance for these features. In the spine, four studies reported moderate sensitivity and specificity for corner inflammatory lesions, and four reported poor sensitivity and specificity for spinal fatty lesions. Three studies evaluated agreement between observers for inflammatory and structural features. Agreement was best for the presence of oedema in the SIJs, but was poor for structural features. Agreement was weak to moderate for global diagnosis.

Conclusions: These results have informed the recommendations of a consensus group aiming to standardise practice around the use of MRI scans in the UK.

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SAT0674 THE USE OF QUANTITATIVE MUSCLE ULTRASOUND AS A FOLLOW-UP TOOL IN INFLAMMATORY MYOSITIS AND DUCHENNE MUSCULAR DYSTROPHY IN CHILDREN

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Background: Ultrasound (US) can provide a painless and noninvasive tool for evaluation and follow up of muscle diseases especially in young children who may have restrictions in execution of muscle strength tests and functional scales.

Objectives: This study aimed to assess skeletal muscle structural status in children with Juvenile dermatomyositis (JDM) and Duchenne muscular dystrophy (DMD) using quantitative muscle US and to perform a longitudinal follow up of these changes over time and correlate these findings with clinical parameters, functional scales, biochemical and electromyographic tests.

Methods: This is a longitudinal study conducted on 35 subjects: 20 JDM patients and 15 DMD patients at baseline and after 12 months of follow-up. In all patients, Quantitative MSUS measurements was performed to the biceps brachii muscle (BB), the forearm flexors (FF), the rectus femoris muscle (RF), the tibialis anterior muscle (TA) according to a standard protocol.¹ The captured images were analysed offline for muscle thickness and echo intensity (EI) by means of computer-assisted grayscale histogram analysis. Manual muscle testing (MMT) was assessed and serum creatine kinase (CK) levels were measured. Also, Quantitative electromyography (QEMG) assessment was performed as BB and RF were studied on the most affected side with emphasis on motor unit potential (MUP) duration, area to amplitude ratio (AAR).

Results: In JDM patients, EI of the proximal muscles (BB and RF) at 12 months follow up (75.32±29.84 and 74.73±25.58 respectively) were highly significantly decreased compared to their baseline EI (127.18±50.62 and 100.68±33.65 respectively) (p<0.05). Also, EI of BB and RF at 12 months follow up showed statistically significant correlation with their MMT (r=-0.51, p<0.05), CK levels (r=0.42, p<0.05) and MUP duration (p<0.05). In DMD patients, EI of BB, RF and TA muscles at 12 months follow up (122.3±41.29, 132.55±41.38 and 136.75±38.02 respectively) were significantly increased compared to their baseline EI (116.7±42.65, 124±43.33 and 133.3±39.57 respectively, p<0.05). Also, EI of BB, RF and TA at 12 months follow up showed statistically significant correlation with their MMT (r=-0.67, -0.68 and -0.68 respectively, p<0.05), CK levels (r=0.77, 0.76 and 0.7 respectively, p<0.05), MUP duration (r=-0.73, -0.58 and -0.53 respectively, p<0.05) and AAR ratio (r=-0.79, -0.81 and -0.62 respectively, p<0.05). Logistic regression analysis showed that baseline EI were predictive of follow up MMT score in both JDM and DMD patients (p=0.03 and 0.01 respectively).

Conclusions: Quantitative muscle US is a sensitive, objective technique for measuring the presence and severity of muscle pathology in both JDM and DMD patients. EI is remarkably correlated with MMT, muscle enzymes and quantitative EMG suggesting that it could be a useful follow up tool to reflect disease severity and residual muscle damage.

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SAT0675 SOLUBLE VASCULAR ADHESION MOLECULE-1 IS OVEREXPRESSED IN PATIENTS WITH VASCULITIS, RHEUMATOID ARTHRITIS AND ANKYLOSING SPONDYLITIS

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Background: Markers in rheumatology are in great demand in order to objectively diagnose the presence and activity of disease. CRP or ESR frequently are normal in many conditions. Vascular cell adhesion molecules mediate transendothelial migration. Several soluble isoforms can be measured in serum as marker for endothelial activation, for example in synovitis or vasculitis. We have recently shown that soluble vascular cell adhesion molecule-1 (sVCAM-1) is elevated in patients with positive antinuclear antibodies.¹

Objectives: The objective of this study was to analyse sVCAM-1 in a set of several rheumatic diseases and compare them to age- and gender-matched healthy controls.

Methods: Cross sectional study with 223 patients with rheumatoid arthritis (RA), ankylosing spondylitis (AS), psoriatic arthritis (PsA) and different vasculitides. Patients were treated with routine immunosuppressive agents, where indicated. CRP (mean mg/l±SD, normal <5), ESR (mean mm/h±SD), standard clinical disease activity scores (mean ±SD) and sVCAM-1 (ng/ml±SEM) in serum, determined by ELISA, was analysed.

Results: Patients with RA (n=136) had a DAS28 of 2.54±0.83, a close to normal CRP of 6.43±10.52, ESR of 16.9±12.6 and sVCAM-1 levels of 225.40±20.35 vs. 158.90±7.32 (p=0.0025). Patients with vasculitis (n=20) had a mean BVAS of 24.85±10.68, CRP was 5.86±7.77 mg/dl, ESR 14.5±11.5 and sVCAM-1 levels were also significantly different as compared to HC with 358.20±68.91 vs. 122.60±14.62 (p=0.0013). Patients with AS (n=33) had a mean BASDAI of 4.16±2.40, a CRP of 4.06±4.67, ESR 12.0±8.8 and had sVCAM-1 levels of 291.30±51.91 vs. 144.60±34.01 (p=0.021). Patients with PsA (n=34) did not show significant changes.

Conclusions: sVCAM-1 might be an objective disease marker in patients with RA, vasculitis and AS. It might be more reliable than standard CRP, especially in vasculitis. Prospective studies are needed to determine if sVCAM-1 is a predictive marker of disease activity and perhaps specific for biologic treatment regimens.

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SAT0676 ULTRASOUND DETECTED INFLAMMATION IN RHEUMATOID ARTHRITIS: ELUCIDATING THE RELATIONSHIP WITH CLINICAL MANIFESTATIONS AT THE WRIST

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Background: Tender and swollen joint counts are part of rheumatoid arthritis (RA) disease activity assessments. While subclinical synovitis is now a well-known entity, the relationship between tender and swollen joints and ultrasound (US) detected inflammation has not been well explored.

Objectives: To compare US detected inflammation (synovitis and/or tenosynovitis) with joint swelling and/or tenderness of the wrist, an important joint in RA. Tendons are included as tenosynovitis on US can be mistaken for joint involvement clinically.