SAT0635

MAGNETIC RESONANCE IMAGING OF THE CERVICAL SPINE IN PATIENTS WITH RHEUMATOID ARTHRITIS AND ANKYLOSING Spondylitis PRESENTING WITH CHRONIC NECK PAIN – A SYSTEMATIC COMPARISON OF CLINICAL ASSESSMENTS


Background: Despite the differences in pathogenesis, neck pain associated with functional limitation and impaired mobility of the cervical spine is a frequent clinical symptom of patients with rheumatoid arthritis (RA) and ankylosing spondylitis (AS).

Objectives: To directly compare inflammatory and structural findings obtained by magnetic resonance imaging (MRI) in patients with RA and AS who present with chronic neck pain, and to correlate MRI findings with clinical measurements.

Methods: A total of 120 patients (60 RA and 60 AS) were consecutively included twice within 7±2 days in the same MRI unit. Short Tau Inversion Recovery (STIR) or T2 weighted fat saturated (T2w FS) sequences were performed in the semi-coronal plane. ADC map was calculated on basis of 4 b values: 0; 50; 500; 800. On each consecutive slice in the cartilaginous compartment the SJJ was divided into four quadrants. From the joint surface a 5 mm deep ROI was drawn. In all ROIs median and 95th percentile ADC values were measured. Intraclass Correlation Coefficients (ICC) were measured to assess repeatability, and unpaired T tests to compare subgroups. Actives were defined as BME on STIR and non-actives as no BME on STIR.

Results: 25 SpA patients and 24 healthy subjects were enrolled. For all subgroups inter-reader ICC was 0.66 and intra-reader ICC 0.92 for the median ADC and 0.57 and 0.74 for the 95th percentile ADC. In SpA patients, healthy subjects, females, males, actives and non-actives inter-reader ICC was 0.79, 0.27, 0.42, 0.72, 0.78 and 0.52 for the median ADC and 0.74; 0.73, 0.68, 0.60, 0.88, 0.64 and 0.64 for the 95th percentile. Intra-reader ICC was excellent for median ADC and good to excellent for 95th percentile ADC (table 1). Significant differences in median (figure 1A) and 95th percentile (figure 1B) ADC were measured between females versus males (p<0.03; p=0.02) and actives versus non-actives (p<0.01; p=0.01) but not in patients versus healthy controls.

Abstract SAT0636 – Table 1. Intraclass correlation coefficient (ICC) for median ADC and 95th percentile ADC measurements in subgroups.

Conclusions: ADC seems a reliable parameter in SpA patients but not in healthy subjects. Our data encourage further studies of ADC measurements for discrimination of SpA patients with or without active inflammation.

REFERENCE:

Disclosure of Interest: None declared

SAT0636

REPEATABILITY OF MRI DIFFUSION WEIGHTED IMAGING OF SACROILIAC JOINTS IN PATIENTS WITH AXIAL Spondylarthropathy AND HEALTHY SUBJECTS

J.M. Möller1, M. Østergaard2, H.S. Thomsen1, I.J. Sørensen2, O.R. Madsen2, S. J. Pedersen2,1. Radiology, Herlev Hospital, Herlev, 2COPECARE, Center for Rheumatology and Spine Diseases, Rigshospitalet, Copenhagen, Denmark

Background: Bone marrow oedema (BME) localised in sacroiliac joints (SIJ) as assessed by Short T2 inversion Recovery (STIR) or T2 weighted fat saturated (T2w FS) sequences is one of the two cornerstones in the classification criterion for axial spondyloarthritis (SpA). Since Diffusion Weighted Imaging (DWI) can quantify water diffusion by measuring the Apparent Diffusion Coefficient (ADC), DWI may potentially be an alternative or supplementary imaging method to STIR or T2w FS.

Objectives: The purpose was to measure the repeatability of (ADC) in a standardised Region-of-Interest (ROI) setting in healthy subjects and in active and chronic SpA patients and to compare the subjects.

Methods: SpA patients and sex- and age- matched healthy subjects were examined twice within 7±2 days in the same MRI unit. Short T2 Inversion Recovery (STIR), T1 weighted and DWI sequences were performed in the semi-coronal plane. ADC map was calculated on basis of 4 b values: 0; 50; 500; 800. On each

Conclusions: ADC seems a reliable parameter in SpA patients but not in healthy subjects. Our data encourage further studies of ADC measurements for discrimination of SpA patients with or without active inflammation.

REFERENCE:

Disclosure of Interest: None declared