



Magnetic resonance imaging in high risk patients for the development of diffuse idiopathic skeletal hyperostosis (DISH)-a preliminary report.

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Background: Recent studies showed that some of the MRI findings in DISH, might be similar to those observed in inflammatory spinal diseases such as ankylosing spondylitis (same target organ-entheses, at times similar presentation, similar rate of progression, and some common mechanical and biologic pathways). To date, studies were performed on Resnick x-rays based established disease.

Aim: to identify the early enthesal changes before the ossification phase.

Methods: This is a comparative, single blinded (the radiologist) study. All patients in the study group were diagnosed with metabolic syndrome (MS) based on the NCEP III criteria or have type 2 DM. The control group- healthy volunteers matched for age and gender without MS/type 2 DM. Age of the recruits- 40-49 years (DISH prevalence 0.2-2%). Demographic and constitutional data collected: including comorbidities, medications, height, weight, waist circumference. Exclusion criteria: ESR and/or CRP above the expected levels for age, weight, and gender, +ve B27, personal or family Hx of seronegative and/or PsoA. Inflammatory back pain defined by the ASAS criteria (age <40 years of age, slow evolution of pain, pain alleviated by physical activity, no improvement with rest, night pain alleviated with motion (4/5 needed), uveitis, DISH on either chest or T-spine radiographs.

Whole spine and SIJ MRI study were conducted by a standard protocol. MRI of the spine scored for the presence of inflammatory bone marrow edema lesions, erosions and fatty lesions and the anterior and posterior corners of the spine (Berlin score) as well as for the presence of enthesitis on the posterior elements. The sacroiliac joints were also scored according to the Berlin scoring method for the presence of acute and structural inflammatory lesion, including BME, fat metaplasia, erosions, sclerosis, ankylosis. Anterior and posterior extraarticular enthesitis were registered. The radiologist has no knowledge or access to the x-rays and patients data.

Results: So far 9 patients were recruited to the study group and 4 patients were recruited to the control group. No significant findings were reported in the SIJ of all the participants exception made for a single patient in the study group with very low score of 1. The Berlin score for the spine was very low positive, in a single patient in the control group (scored 1). The score was high in 7/9 patients in the study group (0, 0, 20, 14, 30, 10, 4, 10, 10).

Conclusions: these preliminary data suggest that the new bone formation in DISH might be preceded by a local inflammatory process. A longitudinal follow-up of these patient should elucidate if the findings represent early local inflammation succeeded by formation of new bone formation. The project continues to recruit.

