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WHOLE BODY MAGNETIC RESONANCE IMAGING IN JUVENILE DERMATOMYOSITIS. A LONGITUDINAL STUDY.

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BACKGROUND

Juvenile dermatomyositis (JDM) is a rare multisystem connective tissues disorder of unknown aetiology.

Assessment of disease activity is a chalange in clinical practice.

MATERIALS AND METHODS

We included consecutive JDM patients followed in the rheumatology unit. All patients were submitted to clinical

and laboratory evaluation. WB-MRI images were obtained using a 1.5 T MRI scanner and short T inversion

recovery sequences (STIR). Muscle, peripheral inflammation and subcutaneous inflammations signal abnormalities

were scored in 42 muscular groups. Muscle inflammation was classified as: 0 = absent; 1 = Mild to moderate /

involvement less than 50% of muscle extension and 2 = Accentuated / greater than 50%. Peripheral and

subcutaneous inflammations were classified as: 0 = absent; 1 = present; and on proximal and distal extremities.

WB-MRI and clinical assessments were performed concurrently and results compared. Evaluation was repeated

after 12 months. Statistics was performed according to the nature of the variable.

RESULTS

WB-MRI revealed muscle inflammation in 6 (31.6%) at study entry. We observed grade 2 muscle inflammation of

the right and left scapular girdle (1/19 patients), right and left pelvic girdle (2/19 patients) and right and left tight

(1/19 patients). Grade 1 inflammation was observed in peripheral right and left arm (2/19 patients), peripheral

right and left thigh (1/19 patients). Grade 1 subcutaneous inflammation was observed in right and left thigh (1/19

patients) and left leg (1/19 patients). Additionally we observed sacroiilitis (1/19 patients), spinal cord infarction

(21%) and osteonecrosis (5.2%). All patients were treated with standardized treatment. After 12 months 13/19

(68.4%) patients repeated the WB-MRI. Five (38.4%) patients had new/worsening of muscle and subcutaneous

inflammation, one (7.7%) patient had tibial medullary infarction. Correlations between WB-MRI muscle score and

disease activity measures were excellent (Manual Muscle Test: r=−0.88, Childhood Myositis Assessment Scale:

rs=−0.81). Patients with subcutaneous inflammation developed clinically evident subcutaneous calcifications

during follow-up.

CONCLUSION

WB-MRI provides additional information to clinical evaluation and represents a promising tool to determine the

grade of muscle inflammation to additional peripheral and subcutaneous tissue inflammation