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### LUPUS MYOCARDITIS: THE ROLE OF CARDIAC MRI AND ENDOMYOCARDIAL BIOPSY AS DIAGNOSTIC PARAMETERS

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**Background** Lupus myocarditis (LM) is a rare but potentially fatal complication occurring in 5–10% of patients with systemic lupus erythematosus (SLE). Endomyocardial biopsy (EMB) is regarded as the diagnostic gold-standard for myocarditis but is invasive and validated in the context of non-rheumatological myocarditis. 2D-echocardiography and cardiac magnetic resonance (CMR) incorporating T1 and T2-mapping, are non-invasive diagnostic tools used to evaluate myocarditis. Current international guidelines on the use of EMB and CMR in myocarditis are based on research done in predominantly non-SLE populations.

**Objectives** To evaluate the diagnostic role of CMR and EMB in patients with LM.

**Method** We conducted a cross-sectional study including 13 SLE patients without features of LM and 13 symptomatic LM patients between May 2022 and October 2023. Both cohorts were investigated with 2D-echocardiography (including speckle tracking: global longitudinal strain (GLS) analyses) and CMR (T1/T2-mapping). EMB was performed in all symptomatic LM patients.

**Results** All patients were female, with a mean age of 31 (SD  $\pm 9.3$ ) and 32 (SD  $\pm 9.7$ ) years in the LM and control groups respectively. Patients with LM had a higher disease activity than those without (median SLEDAI 12 [IQR:9–14] v 8 [IQR:4–15]). On EMB, a lymphocytic infiltrate was demonstrated in 3/13 patients (23.1%) with a CD3<sup>+</sup>/CD45<sup>+</sup> predominant infiltrate on immunohistochemistry in 46.2%. No patient fulfilled the Dallas Criteria for myocarditis. Of 12 LM patients who underwent CMR, nine (75%) met the 2018 Lake Louise criteria (LLC) for myocarditis. Although no control patient fulfilled the LLC, regional and/or global left ventricular dysfunction (2D-echocardiography) was detected in 7/12 and abnormal T1-relaxation (CMR) in 5/12 asymptomatic patients.

**Conclusion** In a cohort of 26 SLE patients, 75% of patients with active LM fulfilled the 2018 CMR Lake Louise Criteria for myocarditis. Evidence of left ventricular dysfunction and abnormal myocardial tissue properties were however also detected in asymptomatic SLE patients. Future research is necessary to delineate the optimal use of CMR in differentiating clinically relevant LM from subclinical disease. Endomyocardial biopsy, even though safe, is invasive and when applying standard histological diagnostic criteria, had limited utility in symptomatic LM patients.

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### RISK FACTORS FOR LOSS FUNCTIONAL CAPACITY IN SYSTEMIC ERYTHEMATOUS LUPUS: A CROSS SECTIONAL STUDY

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**Objective** Verify the prevalence and risk factors for loss of functional capacity in systemic lupus erythematosus (SLE) patients.

**Methods** It was a cross-sectional study with 101 SLE women (2019 EULAR/ACR criteria) that attended medical routine consultation. For functional capacity (FC) we applied the handgrip, static balance and sit and stand 5 times (SLC5x) tests. The disease activity and cumulative organ damage were evaluated by SLEDAI and SLICC/ACR damage index. We also evaluated the association between FC and: body mass index; smoking; comorbidities; sociodemographic variables; medication use, physical exercises (PE) and severity fatigue scale.

**Results** 101 women were included with a prevalence of functional disability of 92.1%. The mean age was 38.5 years, 9.2  $\pm 6.6$  years of disease diagnosis. BMI 25.7  $\pm 4.9$  and 7.9  $\pm 3.8$  years of education. 77.2% were sedentary. Regarding fatigue, the prevalence was 66.3% and the mean fatigue score was 37.2  $\pm 16.9$ . In logistic regression, non practitioners of PE were 3 times more likely to have the presence of fatigue and 5 times more likely to have a low functional capacity.

**Conclusions** This study shown a very high prevalence of functional disability in young SLE patients. In this context, we verify that low practice of physical exercise is important factor risk that could be changed. So, we emphasize the necessity of adequate physical activity prescription for patients with SLE, in order to minimize the loss of functional capacity.

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### ROLE OF CONVENTIONAL MAGNETIC RESONANCE IMAGING IN THE EVALUATION OF PATIENTS WITH NEUROPSYCHIATRIC INVOLVEMENT IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

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**Objective** In this study, we examined the role of conventional brain magnetic resonance imaging (bMRI) in the evaluation of patients with neuropsychiatric systemic lupus erythematosus (NPSLE). We evaluated: 1) the diagnostic role of lesions detected on conventional bMRI at the time of the first NP event in NP manifestations attributed to SLE according by clinical judgment (CJ) and attribution algorithm (AA); 2) the treatment adopted and the 12-month outcome of the manifestations.

**Methods** Our retrospective analysis involved a multicentric cohort of SLE patients treated between 1999 and 2018 in Brazil, Cagliari (Italy), Greece, and Ferrara (Italy). Patients were evaluated according to ACR criteria during their first NPSLE event and underwent bMRI at that time. NP manifestations were attributed to SLE using both CJ and AA. A 1.5 Tesla MRI was utilized, and detected lesions were classified into various types. Data included demographic and clinical