



POSTER PRESENTATION

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# Liver and spleen biometrics in childhood-onset systemic lupus erythematosus patients

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## Introduction

Involvement of the reticuloendothelial system occurs in 20-50% childhood-onset systemic lupus erythematosus (c-SLE) patients at disease onset, usually associated with disease activity. Hepatomegaly and/or splenomegaly may also be associated with abnormal liver function tests. Abdominal ultrasound can be used to assess liver and spleen measurements in children and adolescents without risk of radiation. However, a systematic evaluation of these visceral organ dimensions has not been performed in c-SLE population, particularly during the disease course.

## Objectives

To evaluate liver and spleen dimensions in c-SLE patients and healthy controls and to assess possible associations between abnormalities in liver and spleen sizes with demographic data, clinical features, disease activity, cumulative damage and treatment.

## Methods

30 c-SLE patients and 30 healthy control volunteers underwent abdominal ultrasound. The following two liver measurements were performed in left hepatic lobe: craniocaudal and anteroposterior and three in right hepatic lobe (RHL): posterior craniocaudal (PCC-RHL), anterior craniocaudal and anteroposterior. Three spleen dimension measurements were also evaluated: longitudinal, transverse and anteroposterior. Demographic, clinical and laboratory data, and treatment were assessed. Disease activity was evaluated according to SLE Disease Activity Index 2000 (SLEDAI-2K), European Consensus Lupus Activity

Measurement (ECLAM) and Systemic Lupus Activity Measure (SLAM) scores.

## Results

Mean current age was similar in c-SLE and controls (170.31 ± 27.81 vs. 164.15 ± 39.25 months;  $p=0.486$ ), likewise the frequency of female gender (77% vs. 63%,  $p=0.398$ ). The mean of PCC-RHL dimension was significantly higher in c-SLE compared to controls (13.30 ± 1.85 vs. 12.52 ± 0.93,  $p=0.044$ ). There were no differences between the other hepatic biometrics and splenic parameters ( $p>0.05$ ). Further analysis in c-SLE patients according to PCC-RHL dimension > 13.3 cm (mean of this biometric measurement in 30 c-SLE patients) *versus* < 13.3 cm showed that the median of SLEDAI-2K [8 (0-18) vs. 2 (0-8),  $p=0.004$ ], ECLAM [4 (0-9) vs. 2 (0-5),  $p=0.019$ ] and SLAM [5 (1-13) vs. 2 (0-14),  $p=0.016$ ] were significantly higher in patients with higher PCC-RHL dimension, likewise the mean of erythrocyte sedimentation rate (33.7 ± 16 vs. 22.0 ± 13 mm/1<sup>st</sup> hour,  $p=0.038$ ). The frequencies of nephritis were significantly higher in patients with PCC-RHL dimension > 13.3 cm *versus* < 13.3 cm (77% vs. 29%,  $p=0.010$ ). The median of serum liver enzymes were similar in both groups ( $p>0.05$ ). Positive correlation was observed between SLEDAI-2K and PCC-RHL ( $p=0.001$ ,  $r=+0.595$ ). Negative correlation was evidenced between disease duration and longitudinal dimension of spleen ( $p=0.031$ ,  $r=-0.394$ ).

## Conclusion

Our data raises the novel possibility that disease activity could lead to a subclinical and localized hepatomegaly during the disease course. Long disease duration resulted to spleen atrophy in c-SLE patients.

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### Disclosure of interest

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