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Musculoskeletal Ultrasound in Systemic Lupus Erythematosus (SLE): A Scoping Review.

The primary objective of this scoping review is to summarize the current literature on the burden of inflammatory arthritis, tendinopathy, and enthesopathy detected on musculoskeletal ultrasound in adult systemic lupus erythematosus (SLE) patients.

The search was performed using the PubMed, Embase and Cochrane Library databases between January 1st, 2015, and February 1st, 2025. The medical subject heading (MeSH) terms used were (ultrasonography OR ultrasonography, doppler) AND (lupus erythematosus, systemic) AND (synovitis OR tenosynovitis OR enthesopathy). To be included, a study must be done on the adult SLE population and report on either synovitis, tenosynovitis or enthesopathy. Exclusion criteria are case series with less than five patients, conference abstracts, reviews, non-English or non-French studies, and studies that only included rhupus patients. A pre-established standardized data collection sheet was used.

The literature search found 267 titles, from which 73 abstracts were screened for inclusion criteria. 42 full articles were reviewed, and 25 were included. Studies reported on inflammatory arthritis (n= 20), tenosynovitis (n = 16), and enthesopathy (n = 6). Most studies used the OMERACT definition for ultrasound pathology (24/25).

Among the 6 studies that reported on enthesopathy, 3 studies systematically scanned 5 or more entheses sites. These 3 studies included 56, 65 and 50 SLE patients, with mean ages 35 ± 9 years, 42 ± 14 years and 30 (IQR = 23, 36) years, with BMI 25 ± 4 and 25 (IQR = 23, 28), with SLEDAI-2K 7.2 (S.D. = 4.7) and 4 (IQR = 2, 8). In these 3 studies, the prevalence of SLE patients with clinical enthesopathy was 34-44 %, overall ultrasound enthesopathy was 58-71%, and subclinical ultrasound enthesopathy was 14-32%. The most common sites of overall ultrasound enthesopathy were the distal patellar tendon (10-59%), quadriceps tendon (12-30%), and Achilles tendon (4-29%). Two of these studies examined healthy controls, with 56 and 50 controls. The prevalence of healthy controls with clinical enthesopathy was 8-18%, and the most common sites of overall ultrasound enthesopathy were the Achilles tendon (11-18%), distal patellar tendon (4-13%) and quadriceps tendon (4-11%).

20 studies reported on inflammatory arthritis, with more studies reporting on the upper limbs (n = 18) than the lower limbs (n = 7). The prevalence of patients with subclinical ultrasound synovitis was 4-37 %.

Musculoskeletal ultrasound found a high prevalence of enthesopathy in SLE patients. The relevance of including entheses in routine ultrasound examination of SLE patients needs to be further studied.