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Musculoskeletal Ultrasound in Systemic Lupus Erythematosus: Systematic Literature Review by the Lupus Task Force of the OMERACT Ultrasound Working Group

Priscilla C Wong [1 2], Gavin Lee [3 4], Andrea Delle Sedie [3 4], Petra Hanova [3 4], Nevsun Inanc [3 4], Sandrine Jousse-Joulin [3 4], Sarah Ohrndorf [3 4], Maria S Stoenoiu [3 4], Helen I Keen [3 4], Lene Terslev [3 4], Maria-Antonietta D'Agostino [3 4], George A Bruyn [3 4]

Affiliations + expand

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Abstract

Objective: To identify and synthesize the best available evidence on the application of musculoskeletal (MSK) ultrasound (US) in patients with systemic lupus erythematosus (SLE) and to present the measurement properties of US in different elementary lesions and pathologies.

Methods: A systematic literature search of PubMed, Embase, and the Cochrane Library was performed. Original articles were included that were published in English between August 1, 2014, and December 31, 2018, reporting US, Doppler, synovitis, joint effusion, bone erosion, tenosynovitis, and enthesitis in patients with SLE. Data extraction focused on the definition and quantification of US-detected synovitis, joint effusion, bone erosion, tenosynovitis, enthesitis, and the measurement properties of US according to the OMERACT Filter 2.1 instruments selection.

Results: Of the 143 identified articles, 15 were included. Most articles were cross-sectional studies (14/15, 93%). The majority of the studies used the OMERACT definitions for ultrasonographic pathology. Regarding the measurement properties of US in different elementary lesions and pathologies, all studies dealt with face validity, content validity, and feasibility. Most studies achieved construct validity. Concerning the reliability of image reading, 1 study (1/15, 7%) assessed both intraobserver and interobserver reliability. For image acquisition, 4 studies (4/15, 27%) evaluated interobserver reliability and none had evaluated intraobserver reliability. Criterion validity was assessed in 1 study (1/15, 7%). Responsiveness was not considered in any of the studies.

Conclusion: This literature review demonstrates the need for further research and validation work to define the involvement of US as an outcome measurement instrument for the MSK manifestations in patients with SLE.

Keywords: OMERACT; SYSTEMIC LUPUS ERYTHEMATOSUS; ULTRASOUND.