

Ultrasound of Subtalar Joint Synovitis in Patients with Rheumatoid Arthritis: Results of an OMERACT Reliability Exercise Using Consensual Definitions

George A W Bruyn ^{1 2}, Heidi J Siddle ^{3 4}, Petra Hanova ^{3 4}, F  licie Costantino ^{3 4}, Annamaria Iagnocco ^{3 4}, Andrea Delle Sedie ^{3 4}, Marwin Gutierrez ^{3 4}, Hilde B Hammer ^{3 4}, Elizabeth Jernberg ^{3 4}, Damien Loeille ^{3 4}, Mihaela C Micu ^{3 4}, Ingrid M  ller ^{3 4}, Carlos Pineda ^{3 4}, Bethan Richards ^{3 4}, Maria S Stoenoiu ^{3 4}, Takeshi Suzuki ^{3 4}, Lene Terslev ^{3 4}, Violeta Vlad ^{3 4}, Robert Wonink ^{3 4}, Maria-Antonietta d'Agostino ^{3 4}, Richard J Wakefield ^{3 4}

Affiliations + expand

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[No authors listed]

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Abstract

Objective: To evaluate the intraobserver and interobserver reliability of the ultrasonographic (US) assessment of subtalar joint (STJ) synovitis in patients with rheumatoid arthritis (RA).

Methods: Following a Delphi process, 12 sonographers conducted an US reliability exercise on 10 RA patients with hindfoot pain. The anteromedial, posteromedial, and posterolateral STJ was assessed using B-mode and power Doppler (PD) techniques according to an agreed US protocol and using a 4-grade semiquantitative grading score for synovitis [synovial hypertrophy (SH) and signal] and a dichotomous score for the presence of joint effusion (JE). Intraobserver and interobserver reliability were computed by Cohen's and Light's κ . Weighted κ coefficients with absolute weighting were computed for B-mode and PD signal.

Results: Mean weighted Cohen's κ for SH, PD, and JE were 0.80 (95% CI 0.62-0.98), 0.61 (95% CI 0.48-0.73), and 0.52 (95% CI 0.36-0.67), respectively. Weighted Cohen's κ for SH, PD, and JE in the anteromedial, posteromedial, and posterolateral STJ were -0.04 to 0.79, 0.42-0.95, and 0.28-0.77; 0.31-1, -0.05 to 0.65, and -0.2 to 0.69; 0.66-1, 0.52-1, and 0.42-0.88, respectively. Weighted Light's κ for SH was 0.67 (95% CI 0.58-0.74), 0.46 (95% CI 0.35-0.59) for PD, and 0.16 (95% CI 0.08-0.27) for JE. Weighted Light's κ for SH, PD, and JE were 0.63 (95% CI 0.45-0.82), 0.33 (95% CI 0.19-0.42), and 0.09 (95% CI -0.01 to 0.19), for the anteromedial; 0.49 (95% CI 0.27-0.64), 0.35 (95% CI 0.27-0.4), and 0.04 (95% CI -0.06 to 0.1) for posteromedial; and 0.82 (95% CI 0.75-0.89), 0.66 (95% CI 0.56-0.8), and 0.18 (95% CI 0.04-0.34) for posterolateral STJ, respectively.

Conclusion: Using a multisite assessment, US appears to be a reliable tool for assessing synovitis of STJ in RA.

Keywords: RHEUMATOID ARTHRITIS; SUBTALAR JOINT; ULTRASOUND.