

CLINICAL AND ULTRASOUND PARAMETERS INFLUENCE THE VARIABILITY OF PATIENTS' AND PHYSICIANS' GLOBAL ASSESSMENT IN PSORIATIC ARTHRITIS

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Background: Treatment decisions in Psoriatic Arthritis (PsA) depend upon the perception of disease activity by rheumatologists and patients. The factors explaining the variability of disease activity assessments, however, are elusive so far.

Objectives: The purpose of this study was the identification of clinical and/or ultrasound parameters explaining the discrepancy between patients' (PGA) and evaluator's global assessment (EGA) of disease activity in PsA.

Methods: We performed a prospective study on 83 consecutive PsA patients with study visits at baseline and after 6 months. All patients underwent the following clinical assessments: tender (TJ) and swollen joint (SJ) counts (68/66 joint count), PASI, dactylitis score and the Leeds Enthesitis Score. We also recorded the PGA, patients' pain assessment (pain VAS), the EGA (all measured on a 100mm VAS) as well as the Dermatology Life Quality Index (DLQI) and the HAQ. Ultrasound was performed by an independent investigator blinded to clinical results using an ESAOTE MyLab Twice ultrasound device (6–18 MHz and 4-13 MHz probes). Structural (erosions, osteophytes) and inflammatory changes [gray scale (GS) and Power Doppler (PD)] were investigated at 68 joints and 14 entheses. For statistical analysis, we used SPSS v22. Multivariate regression models were performed to identify the possible association between clinical or ultrasound parameters with EGA and PGA.

Results: Mean age of patients was 51.8 (\pm 11.7) years, 26.2% were female, 43.4% were treated with methotrexate and 37.3% received anti-TNF agents. Disease activity was differently evaluated by patients and physicians in 65% of cases: in 53% (n=44) of patients, PGA scores were higher than EGA and vice versa, 12% (n=10) of cases had higher EGA scores. EGA and painVAS correlated strongly in patients with high PD scores ($r=0.756$ ($p<0.001$) in cases with a PD score >10) whereas a weak association was observed in patients with low levels of ultrasound inflammation, ($r=0.376$, $p<0.05$). Besides, a good correlation between EGA and painVAS ($r=0.823$, $p<0.001$) was found in patients with a high erosion score (>10) whereas in patients with low levels of structural damage, the correlation was weak ($r=0.384$, $p<0.05$). The association between PGA and EGA was not linked with the degree of ultrasound verified inflammation or damage. A multivariate regression model was conducted to identify clinical factors explaining the variability of PGA and EGA in PsA patients. Half of the variability of PGA results was explained by pain VAS (30.5%), swollen joints (15%) and tender joints (6.5%). Besides, pain VAS (B-coeff=0.534, $P<0.001$) and HAQ (B-coeff=6.266, $P<0.05$) were significant predictors of PGA. The variability of EGA results was mainly explained by the SJ count (48.5%), SJ also predicted EGA levels (Bcoeff=3.098, $P<0.001$). In the ultrasound model half of the variability of PGA was explained by pain VAS (42.9%) and GSS-joints (4.7%) while the EGA results were clarified by GSS-joints (12.9%), HAQ-score (9.8%), pain VAS (9.1%) and PD-joints (6.6%).

Conclusions: EGA and painVAS better correlate in PsA patients with high compared to low levels of ultrasound verified inflammation or damage. PainVAS and SJ are the most important clinical determinants of PGA and EGA, respectively whereas the most relevant ultrasound parameters were the GSS-joints and PD-joints score.