

Construct Validity of Disease Activity for Psoriatic Arthritis Composite Index (DAPSA) and Tentative Cut-off Values in a Cohort of Patients with Psoriatic Arthritis

Gallino Yanzi J¹, Schneeberger EE¹, Cerda O¹, Zaffarana CA¹, Landi M¹, Rosemffet M¹, Zamora N, Cazenave T, Dal Pra F, Kohan MP², Buschiazzo E³, Citera G¹.

¹Instituto de Rehabilitación Psicosfísica, ²Hospital Dr E. Tornú, ³Hospital Señor del Milagro, Argentina

Background: Disease Activity for Psoriatic Arthritis (DAPSA) is a composite index that assesses disease activity in patients with Psoriatic Arthritis (PsA) taking into account peripheral arthritis. The aim of our study was to validate DAPSA, and to evaluate its performance using minimal disease activity (MDA) and different cut-off points.

Methods: Patients ≥ 18 years with PsA according to CASPAR criteria, belonging to RAPSODIA cohort were included. We recorded demographic data, clinical presentation, comorbidities and treatment. Morning stiffness, pain and global activity by patient and physician were assessed using visual analogue scale (VAS). We evaluated tender (68) and swollen joints (66), dactylitis and enthesitis by MASES (Maastricht Ankylosing Spondylitis Enthesitis Score). CRP and ESR were measured. ASQoL (Ankylosing Spondylitis Quality of Life), PsAQoL (Psoriatic Arthritis Quality of Life), HAQ (Health Assessment Questionnaire,) BASFI and BASDI were completed. DAS28 (Disease Activity Score), DAPSA, SDAI (Simplified Disease Activity Index), CDAI (Clinical Disease Activity Index), and CPDAI (Composite Psoriatic Disease Activity Index) were calculated. Hypothetical cases of patients with PsA with data necessary to calculate DAPSA were assessed by 10 rheumatologists trained in the evaluation of patients with PsA. They had to consign if the patient was in remission, low, moderate or high disease activity. *Statistical analysis:* Student T test and ANOVA for continuous variables and Chi² test and Fisher's exact test for categorical variables. Spearman Rho, and ROC curves for cut-off points.

Results: We included 112 patients, 57 males (50.9%), with a median age of 54 years (IQR 42-63) and median disease duration of 9 years (IQR 5-15). DAPSA had excellent correlation with DAS28 (Rho:0.85), CDAI (Rho:0.95), SDAI (Rho:0.94) and tender joint count (Rho:0.84), and good with BASDI (Rho:0.68), CPDAI (Rho:0.58), ASQoL (Rho:0.63), PsAQoL (Rho:0.51), BASFI (Rho:0.58), HAQ (Rho:0.59), swollen joint count (Rho:0.69), pain (Rho:0.79) and patient's global activity (Rho:0.72). Patients who achieved MDA were significantly discriminated by DAPSA (mean 4.9 ± 4.21 vs 20.6 ± 12.5) as well as by the other composite indexes. Using established cut-off values of SDAI for Rheumatoid Arthritis (RA) and experts opinion we performed ROC curves for different cut-off values for DAPSA. Based on these values, a DAPSA score ≤ 5.3 was considered remission, 5.4 to 14.8 low disease activity, 14.9 to 37.7 moderate disease activity, and ≥ 37.8 high disease activity. These cut-off values had a sensitivity and specificity $\geq 90\%$, with an area under the curve of 98%.

Conclusion: DAPSA is a valid and easy to calculate index for peripheral joint activity in PsA patients. It can perfectly discriminate patients in MDA and we proposed possible cut-off values for different disease activity states.