DAPSA versus cDAPSA: Do we need to use CRP?

INTRODUCTION

In recent years, there has been a paradigm shift towards the development of disease activity indexes that correspond to the clinical measures and also the results reported by the patients, thus capturing the total burden of the disease.[1]

Disease Activity Index for Psoriatic Arthritis (DAPSA)[2] is an index for measuring disease activity in psoriatic arthritis (PsA) that use C-reactive protein (CRP) as activity biomarker. Recently, van Mens *et al*[1] shown that the use of clinical DAPSA (cDAPSA) was similar to DAPSA using CRP. Our objective is evaluating whether CRP influences the achievement of different DAPSA disease states, and therefore we compared DAPSA with and without CRP.

METHODOLOGY

Trained rheumatology collected clinical data from 124 eligible patients, including swollen and tender joint count (SJC 66 and TJC 68 joints).

DAPSA is calculated with the number of painful joints + swollen joints + VASptGlobal (0–10 cm) + VASptPain (0–10 cm) + protein creatinine ratio mg/dL.

For the cDAPSA, which omits CRP, thresholds between remission (REM), low disease activity (LDA), minimal disease activity (MDA) and high disease activity (HDA) were use 4, 13 and 27 for the differentiation of disease activity states based on clinical parameters only, in the other hand DAPSA (using CRP) were 4, 14 e 28.

The agreement between the tested definitions was established using 2×2 tables and percentage exact agreement and calculation of a *kappa*.

We also analysed, using χ^2 test, the correlation between different disease status according to the two definitions (DAPSA LDA/REM and DAPSA MDA/HDA) and CRP (≤0.5mg/dL or >0.5 mg/dL) and p values <0.05 were considered significant for χ^2 testing. Correlations between absolute number of CRP and DAPSA were determined using Spearman's correlation. All data were analysed with GraphPad Prism 6.

RESULTS

Agreement between the DAPSA and cDAPSA

The agreement between each thresholds of measures in those 77 patients was considered almost perfect with *kappa*: 0.840 (95% CI: 0.742 to 0.938) as shown in table 1.

DAPSA activity status versus CRP, and correlation between absolute values

Of the 50 patients who achieved DAPSA LDA/REM disease, 33 patients had CRP ≤0.5 mg/dL and 17 patients had CRP >0.5 mg/dL. Of the patients who maintained moderate/high activity by DAPSA, 19 had CRP <0.5 mg/dL while only eight patients had CRP >0.5 mg/dL. There was no correlation statistically significance with p=0.89.

When we correlated the DAPSA values (of the 77 patients that performed) with the absolute values of the CRP in mg/dL presented, respectively, we did not find statistically significant correlation, r=0.125 (Spearman's index), as shown in figure 1.

Table 1 Number of patients correlated according disease activity status

	cDAPSA REM	cDAPSA LDA	cDAPSA MDA	cDAPSA HDA
DAPSA REM	14	0	0	0
DAPSA LDA	9	25	0	0
DAPSA MDA	0	0	15	0
DAPSA HDA	0	0	0	14

DAPSA, Disease Activity Index for Psoriatic Arthritis; HDA, high disease activity; LDA, low disease activity; MDA, moderate disease activity.

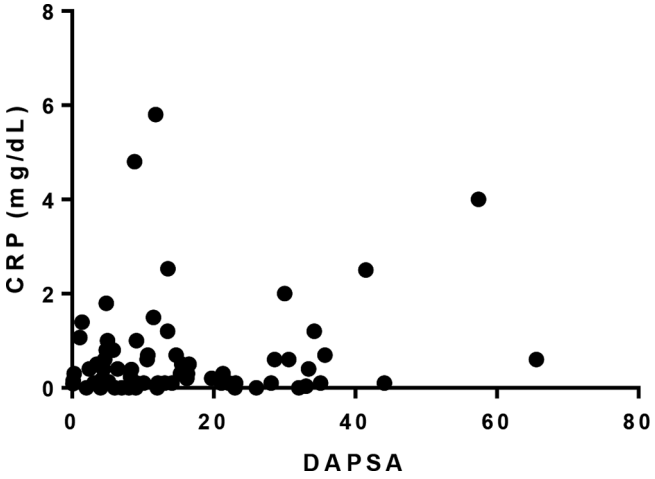

Figure 1 Correlation between DAPSA and corresponding CRP values. CRP, C-reactive protein; DAPSA, Disease Activity Index for Psoriatic Arthritis.

DISCUSSION

The main problem in clinical routine is which one measure of disease is more appropriated. Not all measures of disease activity in PsA included an inflammatory marker in calculation. The DAPSA and Psoriatic Arthritis Disease Activity Score (PASDAS)[3] include CRP, and cDAPSA and MDA)[4] measures do not.

In our population, the difficulty to perform CRP makes applicability of a clinical measure more feasible in outpatients routine, and this observation is in accordance with other studys.[1] The correlation between cDAPSA and DAPSA was high, as observed in van Mens *et al*[1] and therefore any of those tools could be used. As already shown in that study,[1] we also demonstrated some patients with a raised CRP fulfilled remission score activity and vice versa showing that this biomarker perhaps is not the ideal to use in PsA disease targets. As we know, CRP perhaps is not the ideal inflammation marker to measure active PsA.[1 5]

The almost perfect agreement between cDAPSA and DAPSA suggest that the inclusion of CRP can be unnecessary. Besides, a target without an inflammatory marker seems to be more feasible in clinical routine.

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Acknowledgements We thank our patients.

Contributors All contributors meet criteria for authorship.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not required.

Ethics approval This study was reviewed and approved by the local medical research ethics committee of Clinical Hospital (Federal University of Pernambuco/EBSERH; CAAE 08028119.7.0000.8807.

Provenance and peer review Not commissioned; internally peer reviewed.

To cite Gonçalves RSG, de Almeida Martins LM, de Ataide Mariz H, *et al*. *Ann Rheum Dis* 2020;**79**:e142.

Received 28 June 2019
Accepted 4 July 2019
Published Online First 22 July 2019

► http://dx.doi.org/10.1136/annrheumdis-2019-215990

Ann Rheum Dis 2020;**79**:e142. doi:10.1136/annrheumdis-2019-215960

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