Increased number of comorbidities and cardiovascular risk factors in early psoriatic arthritis patients suggests an intrinsic disease impact

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Background:

Metabolic and cardiovascular comorbidities in psoriatic arthritis (PsA) are seen as a consequence of long-lasting and uncontrolled inflammation. A high number of patients with established Pso and PsA develop metabolic comorbidities and cardiovascular risk factors over the course of time[1]. Moreover, patients with PsA seem to have a higher burden of comorbidities and cardiovascular risk factors (CV RF) as compared to patients with other forms of spondyloarthritis[2] and with rheumatoid arthritis[3]. The nature of this increased prevalence in PsA is not fully understood. Hence, we hypothesize that the risks may be intrinsic to the disease, and be already present in early stages.

Objectives:

The aim of this study was to investigate the presence of comorbidities and CV RF in early, treatment naïve Early PsA (ePsA) as compared to sex- and age-matched healthy volunteers and to study factors contributing to the metabolic burden of the patients.

Methods:

Clinical, demographic characteristics, cardiovascular risk factors and comorbidities of newly diagnosed treatment-naïve adult patients with PsA compared to sex- and age-matched controls were studied in an observational prospective longitudinal multicentre study.

References:

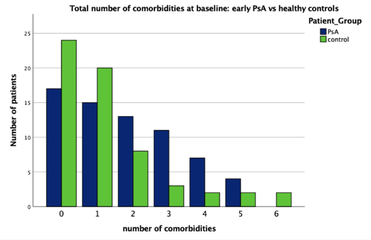
1. Gladman DD, Ang M, Su L. Ann Rheum Dis. 2009.
2. Haque N, de Vlam K. J Rheumatol. 2016.
3. Jafri K, Bartels CM. Arthritis Care Res (Hoboken). 2017.

Results:

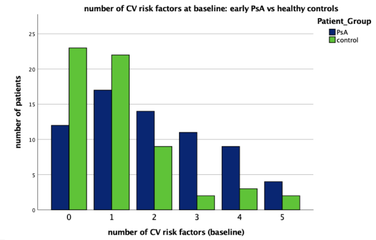
Patients with newly diagnosed treatment naïve PsA , fulfilling CASPAR criteria (67) were compared to sex and age matched controls (61). Two thirds (73.1%) had oligoarticulair disease, 22% polyarticular disease and a minor proportion had axial involvement (4.5%). Ninety five percent of ePsA patients had skin and/or nail psoriasis, mostly mild [median (IQR) PASI of 1.2 (0.5-3.7)]. Dactylitis was present in 26.9% and enthesitis in 29.9% of patients. Duration of articular symptoms before the diagnosis was made [median (IQR)] was of 0.6 (0.22-2.3) years.
Although, number of comorbidities was comparable in ePsA and healthy controls, more ePsA patients had CV RF already present at baseline. Comorbidities are summarized in the **Table 1**. Overall rate of cardiovascular morbidity and Charlson comorbidity index were low, but were higher in the PsA group (p=0.007 and <0.001 accordingly). Duration of skin psoriasis had no effect on comorbidities or CV RF in EPsA.
In multiple regression analysis diagnosis of PsA was the strongly associated with the number of comorbidities and CV RF after adjusting for age, sex and BMI.

	early PsA, baseline	healthy controls	2-sided sig.	OR
number	67	61		
male gender, n (%)	47 (70.1)	35 (57.4)	0.144	
age, mean (±SD)	47.9 (±14.3)	45 (±14.2)	0.25	
BMI, mean (±SD)	28.2 (±4.5)	25.7 (±5.2)	0.006*	
dyslipidemia[&], n (%) **- dyslipidemia treated** **- dyslipidemia doc.**	43 (64.2) 14 (20.9) 29 (43.3)	24 (39.3) 7 (11.5) 17 (27.9)	0.008* 0.162 0.097	1.6 [1.1-2.3]
Obesity **Abdominal obesity**	27 (40.3) 34 (50.7)	11 (18.3) 18 (29.5)	0.011* 0.012*	2.2 [1.2-4.0] 1.7 [1.1-2.7]
CV RF ≥1, n patients (%) **≥2 CV RF, n patients (%)**	55 (82.1) 38 (56.7)	23 (37.7) 16 (26.2)	0.017* <0.001*	1.6 [1.14-2.26] 2.1 [1.3-3.2]
Patients with metabolic syndrome, n (%)	15 (22.4)	5 (8.2)	0.03*	2.7 [1.1-7.1]
type 2 diabetes mellitus, n patients (%)	8 (11.9)	1 (1.6)	0.034*	7.2 [0.9-56.5]
HOMA-IR	2.4 (±2.3)	1.9 (±1.8)	0.219	
arterial hypertension, n patients (%)	19 (28.4)	12 (19.7)	0.304	0.8 [0.6-1.4]
Smoking, n patients (%)	15 (22.4)	4 (6.6)	0.013*	0.6 [0.4-0.8]
Alcohol (≥ 6units/week), n patients (%)	20 (29.9)	17 (27.9)	0.85	0.6 [0.7-1.6]

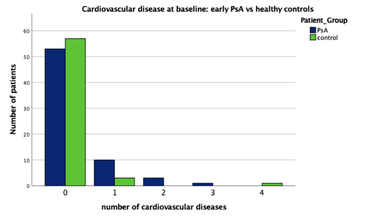
Figure 1. Comparison of comorbidities, CV RF, cardiovascular disease and Charlson comorbidity index in early PsA and healthy controls.



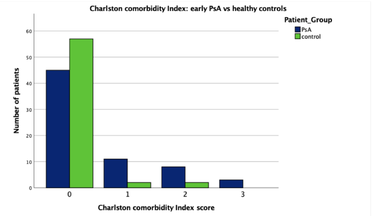
A. Comparison of overall comorbidities in early PsA and healthy sex- and age matched controls at baseline evaluation. Number of comorbidities is significantly higher in early PsA (p= 0.045, chi-sq test)



B. Comparison of cardiovascular risk factors (CV RF) in early PsA and healthy controls at baseline evaluation. Number of CV RF is significantly higher in early PsA than in control group (p= 0.011, chi-sq test).



C. Comparison of cardiovascular morbidity in early PsA and healthy controls at baseline evaluation. Cardiovascular disease was not significantly different in two groups (p= 0.07, chi-sq test).



D. Comparison of Charlson comorbidity index (CCI) in early PsA and healthy controls at baseline evaluation. CCI is significantly higher in early PsA (p=0.005, chi-sq test).

Conclusion:

Our data imply that PsA patients have higher comorbidities and cardiovascular burden at early stages of the disease. Rates of dyslipidemia, metabolic syndrome and obesity are significantly higher in the early PsA population. Presence of metabolic and lipid disturbances at early stages of the disease might suggest a bidirectional relationship and potentially playing role as initial triggers of PsA.

Acknowledgments

Research funded by FWO Vlaanderen
PhD fellowship by the Research PARTNERs program

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