

## **Psoriasis influences the phenotype of patients with early inflammatory back pain: data from the DESIR cohort.**

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**Background.** Influence of psoriasis on the clinical, functional and imaging features in patients with inflammatory back pain (IBP) related to spondyloarthritis (SpA) is poorly known.

**Objectives.** To determine the prevalence of psoriasis in patients with recent inflammatory back pain suggestive of SpA; ii) To investigate whether psoriasis influences the clinical, radiological and metabolic phenotype of patients presenting with recent IBP.

**Methods.** Prevalence of personal psoriasis was determined in 692 patients (mean age 33.3 years, 53.8% female, 58.3% HLA B27 positive) included in the DESIR cohort, a multicenter cohort of patients with early IBP (>3 months and <3 years of duration) suggestive of SpA according to the investigator. Data on the demographic characteristics, functional status and quality of life, imaging features (standard X-Rays, MRI, Ultrasounds), and blood tests were compared in patients with and without psoriasis. Factors associated with the presence of psoriasis were identified both by uni and multivariate analysis (logistic regression).

**Results.** The prevalence of psoriasis in the DESIR cohort was 16.6% [95%CI 13.8-19.3] (n=115/692 patients). Psoriasis antedated IBP in 79% of patients, whereas it occurred after or concomitantly the onset of IBP in 15% and 6% of patients, respectively. Patients with and without psoriasis did not differ in age, sex and B27 positivity. Patients with psoriasis reported more often a family history of psoriasis (40.5% vs.16.4%;  $p<0.0001$ ), dactylitis (24.3% vs. 10.7%;  $p<0.001$ ) and enthesitis (59.1% vs. 47.5%;  $p=0.02$ ). At clinical exam, these patients had a higher BMI (24.6 $\pm$ 4.5 kg/m<sup>2</sup> vs. 23.8  $\pm$ 3.9 kg/m<sup>2</sup>;  $p=0.05$ ) and presented with more enthesitis (3.4 $\pm$ 3.2 vs. 2.5  $\pm$ 3;  $p=0.01$ ). Their spinal mobility did not differ from patients without psoriasis.

Presence of psoriasis was associated with a more active condition (BASDAI: 4.8 $\pm$ 1.8 vs. 4.4 $\pm$ 2;  $p=0.05$ ) and poorer functional status (BASFI: 3.6 $\pm$ 2.2 vs. 3.0 $\pm$ 2.3;  $p=0.005$ ; SF36 -physical function- 61.9 $\pm$ 24.4 vs. 66.9 $\pm$ 24.9;  $p=0.04$ ). Levels of CRP ( $p=0.02$ ), total cholesterol ( $p=0.01$ ) and triglycerides ( $p=0.02$ ) were higher in patients with psoriasis. Structural changes as assessed by standard X-Rays and MRI at the spinal and sacroiliac levels did not differ between the two groups. By contrast, US examination of the Achilles tendons in

B mode combined with power Doppler -performed in n=390 patients (56.9%)- showed that patients with psoriasis had more frequently bone erosions (15.4% vs. 4.2%; p=0.003) and abnormal vascularisation (6.5% vs. 1.9%; p=0.04).

Multivariate regression analysis showed that the BASFI score (OR=1.11 [1.01-1.23]; p=0.03), the cholesterol levels (OR=1.25 [1.02-1.54]; p=0.02), a history of dactylitis (OR = 2.65 [1.52-4.63]; p=0.0006) and a family history of psoriasis (OR= 3.80 [2.36-6.12]; p<.0001) were independent factors associated with psoriasis.

### **Conclusion**

Psoriasis switches the phenotype of patients with recent inflammatory back pain toward a more active and severe axial disease and a more frequent association with concomitant enthesopathy and dactylitis. This study confirms the familial aggregation of psoriasis and its association with the metabolic syndrome.

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