Background: Up to 40% of patients with inflammatory arthritis on TNF-inhibitor treatment fail to respond either due to primary inefficacy or loss of response. One explanation is immunogenicity leading to the development of anti-drug antibodies (ADAb) and subsequent low drug levels. Few data exist on whether such pharmacological tests correlate with treatment response in psoriatic arthritis (PsA). The clinical utility of whether such tests should be incorporated into practice is in question.

Objectives: To identify (i) whether the presence of ADAbs/drug levels predict treatment response and disability in TNFi-treated PsA patients (ii) the factors associated with drug levels (iii) a drug level threshold for optimal therapeutic response.

Methods: 75 patients were available from the Outcomes of Treatment in PsA Study Syndicate (OUTPASS). 20% (n=10) of adalimumab-treated patients were positive for ADAbs, but none were detected in etanercept-treated patients. Median BMI 28.9 (IQR 26.0–34.9). 20% (n=10/49) of adalimumab-treated patients had ADAbs at baseline.

Results: There was no significant association between ADAbs/etanercept drug levels and treatment response at 6 months using concentration-effect curves. Factors that were significantly associated with adalimumab drug levels were ADAb level (β=-0.0073, p≤0.001), BMI (β=0.0022, p=0.043) and the associated modified Steinbrocker score (OR 1.55, p=0.06). Similarly, an association was found in multivariate analyses between MASEI scores and periostitis was of borderline statistical significance (OR 1.29, p=0.06). Similarly, an association was found between higher scores of MASEI scores and peripheral joint damage: modified Steinbrocker score (β=0.926, p<0.001), joint ankylosis (β=0.15, p<0.001) and sacroiliitis. Multivariate regression analyses found an association between higher scores of MASEI scores and peripheral joint damage: modified Steinbrocker score (β=0.15, p<0.001). Similarly, an association was found in multivariate analyses between higher MASEI scores and axial damage as measured by mSASSS (β=0.15, p<0.001). 

Conclusions: The severity of sonographic enthesitis is a marker of radiographic peripheral and axial joint damage in PsA. The association was found between radiographic and bone formation scores which suggest the potential role of enthesitis in the pathogenesis of articular damage in PsA.

Disclosure of Interest: None declared

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registered in DANBIO, the Danish nationwide rheumatologic registry, from December 2013 to June 2014. Principal component analysis was used to identify clustering factors associated with fatigue.

**Results:** A total of 1,062 PsA patients were included in the study. The median Visual Analog Scale (VAS) fatigue score was 57.7. Patients with moderate to severe fatigue (VAS score ≥ 57) had higher scores of pain, DAS28, HAQ, patient global assessment, and more tender and swollen joints (p < 0.001) (Table 1). In the principal component analysis the clinical co-variables were reduced to 3 components explaining 63% of experienced fatigue (figure 1); The first component, contributing to 31%, was mainly constituted by inflammatory factors as swollen and tender joints, doctors-global evaluation, higher CRP, and pain score, whereas the second component mainly consisted of contributions from age and disease duration, explaining 17% of experienced fatigue. The third component, contributing to 15%, consisted of patient pain, tender joint count, increasing age, and by concomitant low CRP. The remaining 37% was considered as residuals.

Table 1

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Fatigue Non to mild</th>
<th>Fatigue Moderate to severe</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VAS score ≤ 57</td>
<td>VAS score &gt; 57</td>
<td></td>
</tr>
<tr>
<td>n=520</td>
<td>n=542</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Female, n (%)**
  - 253 (48.7%)
  - 520 (56.8%) 542 < 0.0001

- **Age, yrs**
  - 53.0 (44.0–62.0)
  - 520 (42.6–60.0) 542 0.070

- **Disease duration, yrs**
  - 6.0 (3.0–11.5)
  - 449.0 (5.0–10.0) 464 0.008

- **C-reactive protein, mg/L**
  - 3.0 (1.0–6.0)
  - 421 (2.0–7.0) 464 0.008

- **Patient global assessment, 0–100 mmVAS**
  - 27.0 (15.0–43.0)
  - 520 (75.6–86.0) 542 < 0.0001

- **Doctors global assessment, S-grade Likert scale**
  - 7.0 (3.0–15.0)
  - 432 (14.0–7.0) 438 < 0.0001

- **PDQ pain score**
  - 9.0 (6.0–14.0)
  - 520 (17.0–23.0) 542 < 0.0001

- **DAS28-CRP**
  - 2.3 (1.9–2.9)
  - 400.0 (3.6–4.6) 418 < 0.0001

- **HAQ, 0–2**
  - 0.4 (0.1–0.8)
  - 507 (1.0–1.8) 530 < 0.0001

All values are median (Q1-Q3) unless otherwise indicated. VAS: visual analogue scale, PDQ: pain assessment questionnaire; DAS28-CRP: disease activity score-C-reactive protein, HAQ; health assessment questionnaire.

**Component 1**

**Clinical inflammatory manifestations**

- Pain score: 0.51
- Swollen joints: 0.77
- Tender joints: 0.73
- Doctor's VAS: 0.81
- Grip: 0.81
- Pain duration: 0.26
- Age: 0.36

**Component 2**

**Chronicity**

- Pain score: 0.43
- Swollen joints: 0.21
- Tender joints: 0.01
- Doctor's VAS: 0.07
- Grip: 0.06
- Duration: 0.34
- Age: 0.06

**Component 3**

**Chronic pain**

- Pain score: 0.39
- Swollen joints: 0.48
- Tender joints: 0.46
- Doctor's VAS: 0.20
- Grip: 0.56
- Duration: 0.04
- Age: 0.43

**Figure 1**

Conclusions: Clinical inflammatory disease activity, chronicity, as well as pain in the absence of inflammation were all identified as important factors explaining 63% of moderate to severe fatigue in the current PsA population.

**References:**


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**METABOLIC SYNDROME AND LIVER STIFFNESS IN PSORIATIC ARTHRITIS AND PSORIASIS PATIENTS: A CASE-CONTROL STUDY**

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**Background:** Psoriatic arthritis (PsA) and psoriasis (PsO) are commonly associated with various comorbidities, among which metabolic syndrome (MetS) has been demonstrated to be more prevalent in these groups with respect to the general population. However, few data are available regarding the comparison between PsA/PsO. Besides, a possible consequence of MetS is the development of a non-alcoholic fatty liver disease (NAFLD), which can progress to fibrosis, the latter rarely assessed in PsA/PsO.

**Objectives:** The aim of the present case-control study was: 1) to compare prevalence of MetS in PsA and PsO 2) to evaluate the presence of liver fibrosis in these two groups using hepatic elastography.

**Methods:** Forty-three consecutive PsA patients classified according to CIA2Sifiliation criteria for Psoriatic Arthritis (CIA/PsA), and 33 consecutive PsO patients without history/manifestations of arthritis, attending the Rheumatology and Dermatology Units of University of Padova, were studied. Exclusion criteria were: conditions which may cause liver fibrosis other than NAFLD (eg viral hepatitis, autoimmune or genetic liver disease), alcohol consumption > 20 grams/day, active smoking, daily use of non-steroidal anti-inflammatory drugs. Anamnestic, laboratory (serum creatinine, triglycerides, uric acid, fasting glucose, insulin, albumin, transaminase) and metabolic (blood pressure, waist circumference, height, weight) data were collected. MetS was defined according to the criteria of National Cholesterol Education Program's Adult Treatment Panel III report. Insulin resistance was quantified through HOMA (Homeostatic Model Assessment). All patients underwent hepatic elastography to evaluate liver stiffness; values > 7 kPa were taken as indicator of liver fibrosis. PsO severity was assessed through Psoriasis area severity index (PASI). Differences in variables between PsA/PsO were compared through non parametric Mann-Whitney test, and Chi-square test for categorical variables. Correlations between variables were evaluated through Spearman test.

**Results:** PsA and PsO patients showed similar characteristics (mean age 60.2±8.4 vs 54.5±19.6 years, 74.4% vs 63% males, arthritis/PsO duration 12.6±6.5 vs 18.2±14.2 years). The only variables which differ in PsA/PsO groups were Body Mass Index (BMI) (25.7±5.4 vs 29.1±6.3), PASI (5.6±4.1 vs 5.2±3.5) and serum uric acid (4.1±1.5 vs 5.7±1.4 mg/dL), all higher in PsO (p-values 0.0092, 0.0355 and 0.0001 respectively). Prevalence of MetS and liver fibrosis in the 2 groups were was similar: 34.9% and 30.8% in PsA vs 33.3% and 27.6% in PsO (p-nis). Among all correlation studied, only serum uric acid, liver stiffness and PASI correlated with other variables (Table). Most interestingly, liver stiffness very well correlated with serum uric acid in PsO (p<0.0001 r=0.73).

**Table**

Table. Correlations found between serum uric acid, liver stiffness and PASI with other variables studied

**Figure 1**

Conclusions: We observed a similar prevalence of MetS and hepatic stiffness in PsA and PsO. The correlation found between uric acid level and hepatic stiffness could lie on the fact that uric acid seems to favour insulin resistance, hypertension, dyslipidemia and other MetS risk factors. MetS could be therefore one of the major determinants to liver fibrosis in PsA and PsO, thus highlighting how comorbidities are not only coexisting conditions, but are strongly linked to each other and need to be treated as well as the skin and joint aspect.

**Disclosure of Interest:** None declared

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