72.5%) than "cold" or non-tender dactylitis (58/211, 27.5%). The most prevalent sites for hot dactylitis were toes 2-4th and fingers 2-3rd.

Table 1.

Variable	No Dactylitis (n=94)	Dactylitis (n=83)	P value
Age, mean (SD) years	44.4 (12.8)	43.7 (13.2)	>0.05
Male	38 (40.4%)	42 (50.6%)	>0.05
Disease duration, median (IQR) weeks	4.7 (0.0-11.4)	5.2 (1-22.4)	>0.05
Early Morning stiffness, mean (SD) mins	82.8 (145.4)	170.5 (230.2)	0.0025*
TJC (78), mean (SD)	8.3 (10.9)	13.7 (14.0)	0.004*
SJC (76), mean (SD)	2.2 (3.2)	8.4 (8.0)	<0.001*
Psoriasis	94/94 (100.0%)	76/83 (91.6%)	0.004*
PASI, mean (SD)	3.6 (4.0)	3.0 (4.1)	>0.05
Nail Dystrophy	51/94 (54.3%)	41/83 (49.4%)	>0.05
mNAPSI, mean (SD)	4.9 (7.1)	7.5 (14.0)	>0.05
MASES, mean (SD)	1.6 (2.9)	1.5 (2.4)	>0.05
BMI, mean (SD)	29.1 (6.4)	28.6 (5.6)	>0.05
Smoker	19.0 (20.2%)	9.0 (10.8%)	>0.05
Elevated CRP (>10 mg/L)	24 (25.5%)	36 (43.4%)	>0.05
PsAQoL, mean (SD)	6.2 (6.6)	6.2 (6.1)	>0.05
HAQ, mean (SD)	0.79 (0.71)	0.84 (0.65)	>0.05
US Erosions (n=154)	12/83 (14.4%)	21/71 (29.5%)	0.023*

US defined erosions were significantly more prevalent in the dactylitis group: 34 erosions in 21/71 patients (29.5%) versus 16 erosions in 12/83 (14.4%) patients in non-dactylitis. Sites prone to erosive damage in both groups were the wrists, MCP1,2 and MTP4,5. The right MCP2 (n=6) and MTP5 (n=6) were most commonly eroded in the dactylitis group, but erosions corresponding at the dactylitic digit level were overall low.

Conclusion: This study identifies a more severe phenotype in very early DMARD naïve PsA presenting with dactylitis with higher prevalence of ultrasound erosions. Longitudinal follow up will determine whether dactylitis represents a poor prognostic factor in very early PsA, which may be a useful discriminator for risk stratification in future PsA management recommendations.

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SAT0414 THE PERFORMANCE OF A MULTI-MARKER GENETIC TEST TO IDENTIFY PATIENTS WITH PSORIATIC ARTHRITIS AMONG PSORIASIS PATIENTS

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Background: Improved understanding of the complex genetic architecture of psoriatic arthritis (PsA) along with the reduction in the cost of genetic testing provide an opportunity to assess the application of genetic testing for PsA diagnosis in clinical setting.

Objectives: The study aimed to assess the performance of the multi-SNP genetic test in predicting a clinical diagnosis of PsA by a rheumatologist among psoriasis patients with musculoskeletal symptoms.

Methods: 328 patients with psoriasis and musculoskeletal symptoms that were referred to a rapid access clinic for suspected PsA were enrolled. Patients with a prior diagnosis of PsA were excluded. A rheumatologist evaluated all patients and classified them as "PsA" or "not PsA". All patients who were classified as not PsA at baseline were reassessed 1 year later to determine whether they have developed PsA. We tested 2 outcomes: 1) diagnosis of PsA at baseline; and 2) diagnosis of PsA at baseline or at 1 year. A custom multi-SNP genetic assay was genotyped on a MassARRAY system (Agena Biosciences). The custom PsA weighted genetic panel included 42 variants in or near 20 genes based on genome-wide significance in PsA studies. We tested the ability of each genetic

maker individually to predict PsA using logistic regression models adjusted for age and sex. Machine-learning methods including logistic regression, naïve bayes and random forest were used to identify the optimal prediction model. Age and sex were included in the prediction models.

Results: 78 patients were classified as PsA (PsA-baseline) and the remaining 250 patients as not PsA. After 1 year, 17 additional patients developed PsA resulting in 95 patients with PsA at 1 year (PsA-1 year). The association between the tested SNPs and PsA is shown in Table 1. 5 SNPs located at LCE3A (rs10888503), TNIP1 (rs146571698) and IL-23R (rs4655683, rs2201841 and rs12044149) were associated with PsA-baseline or PsA-1 year (all p<0.05). Of the three machine-learning methods used, logistic regression was found to have the best prediction properties (highest AUC). Overall, the performance of prediction models to classify patients as PsA was modest (see Table 2). The AUC, sensitivity and specificity of the models to predict PsA at baseline were: 0.62, 0.15, 0.97, respectively and at 1 year: 0.62, 0.15, 0.94.

Table 1. The association between (selected top markers)

Chrom	SNP	Gene	PsA diagnosis at baseline (N=78)			PsA diagnosis at 1 year (N=95)		
			OR	95% CI	P value	OR	95% CI	P value
1	rs10888503	LCE3A	1.78	1.21, 2.62	0.003	1.52	1.06, 2.17	0.02
6	rs12191877	HLA-C	0.52	0.31, 0.89	0.017	0.63	0.39, 1.01	0.057
6	rs2894207	HLA-C*6	0.57	0.35, 0.93	0.025	0.62	0.39, 0.99	0.045
6	rs13214872	HLA-C	0.57	0.34, 0.96	0.035	0.65	0.41, 1.05	0.078
6	rs12189871	HLA-C	0.55	0.30, 1.01	0.055	0.68	0.40, 1.17	0.169
6	rs4406273	HLA-C	0.57	0.32, 1.02	0.057	0.67	0.40, 1.12	0.122
5	rs146571698	TNIP1	2.03	0.97, 4.24	0.061	2.07	1.02, 4.18	0.044
1	rs4655683	IL-23R	1.42	0.97, 2.08	0.069	1.52	1.06, 2.17	0.022
1	rs2201841	IL-23R	0.72	0.50, 1.05	0.087	0.68	0.48, 0.96	0.054
1	rs12044149	IL-23R	1.34	0.88, 2.06	0.167	1.60	1.07, 2.39	0.021

Table 2. Performance of the genetic assay in predicting PsA

2A. Prediction of PsA at baseline (N=78)

Method	TP	TN	FP	FN	Accuracy	Sensitivity	Specificity	AUC
Logistic Regression	12	242	8	66	0.77	0.15	0.97	0.62
Naïve Bayes	27	203	47	51	0.70	0.35	0.81	0.61
Random Forest	14	237	13	64	0.77	0.18	0.95	0.56

2B. Prediction of PsA at 1 year (N=95)

Method	TP	TN	FP	FN	Accuracy	Sensitivity	Specificity	AUC
Logistic Regression	15	218	15	80	0.71	0.15	0.94	0.62
Naïve Bayes	21	203	30	74	0.68	0.22	0.87	0.62
Random Forest	16	204	29	79	0.67	0.17	0.88	0.55

Conclusion: Despite the association of several genetic markers with PsA, genetic testing has marginal effect on predicting a diagnosis of PsA among patients with psoriasis and musculoskeletal symptoms.

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SAT0415 AGE RELATIONSHIP WITH ULTRASOUND ARTICULAR AND ENTHESEAL INVOLVEMENT IN PSORIATIC ARTHRITIS: CROSS-SECTIONAL STUDY

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Background: Detection of subclinical enthesitis and synovitis in psoriatic arthritis (PsA) is prevalent and ultrasound (US) examination is informative tool for it diagnosing. Aging positively affects degenerative changes.

Objectives: To study relationship between US articular and enthesal findings with age in patients with PsA.

Methods: 57 patients were enrolled to study with fulfilled PsA criteria (CASPAR, 2009). Data collection: demographical, clinical (current psoriasis, axial

involvement, enthesitis, dactylitis), US (synovitis count (by Grey Scale), Power Doppler (PD)+ synovitis), thickening and hypoechogenicity at entheses, PD+ enthesitis, entheses with structural components); biological (high sensitive C-reactive protein (hsCRP), Erythrocyte Sedimentation Rate (ESR)).

US examination included 798 joints and 3078 entheses (bilateral shoulders, acromioclavicular joints, elbows, wrists, hips, knees, ankles; entheses at the projection of these joints (total number = 54). US enthesal findings were fixed according to consensus-based US definition and scoring for enthesitis in spondyloarthritis and PsA (OMERACT US)¹.

Results: In all 57 patients: male - 25 (43.9%), mean age 43.4±10.3(SD) years (y), PsA duration was 7 (3;10) y, Ps duration 10 (8; 22) y; 53 (41.1%) had axial involvement, 42 (73.7%) dactylitis, 8 (14%) clinical enthesitis, and 56 (98.2 %) skin psoriasis, Psoriasis Activity and Severity Index score 6.4 (2;14.4), Disease Activity in PsA score 18.1 (10.2;26.1), hsCRP 10.1(2.4;21.4), ESR 20 (11.3;31.5). Synovitis count increased with age noticeably ($r=0.508$, $p<0.01$), and weak correlation of PD+ synovitis ($r=0.262$, $p=0.049$) and age was found. The enthesal thickening and hypoechogenicity and structural findings increased with age respectively ($r=0.345$, $p=0.009$; $r=0.337$, $p=0.01$). There was no correlation between PD+ enthesitis and age. The association between PD+ enthesitis and blood biomarkers of inflammation (hs-CRP ($r=0.364$, $p=0.008$); ESR ($p=0.358$, $p=0.008$) was found.

Conclusion: Our study found significant relationship between age and US synovitis. Association between age and US enthesal involvement was noted. Only PD+ enthesitis was not related with age in comparison with other US enthesal findings. The presence of PD US signal at enthesitis in association with increased inflammatory blood biomarkers can be evaluated as the sign of disease activity regardless of age and not as age-related lesion in PsA patients.

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SAT0416

ENTHESITIS AND CLINICAL RESPONSE IN PSORIATIC ARTHRITIS: REAL-LIFE DATA

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Background: Psoriatic arthritis (PsA) is an inflammatory arthritis that is characterized by a broad spectrum of clinical conditions, including axial skeletal involvement, enthesitis, dactylitis, uveitis and arthritis. Among those, enthesitis, the inflammation of the junction where the tendon, ligament or joint capsule inserts into the bone, is assigned to be the hallmark, affecting 35–50% of patients. Several clinical methods have been developed to measure it, including The Maastricht AS Enthesitis Score (MASES) index, which tests 13 entheses and the Spondyloarthritis Research Consortium of Canada (SPARCC) index that assesses 16.

Objectives: To assess the relationship between enthesitis and clinical response in psoriatic arthritis.

Methods: Retrospective study including all the patients with PsA meeting the CASPAR criteria, beginning first-line biologic therapy at our centre. Demographic and clinical data including age, gender, body mass index (BMI), smoking status, physical examination findings such as presence of enthesitis, dactylitis, chronic back pain, tender and swollen joint counts (TJC/ SJC), ESR, CRP, DAS 28 4vESR, BASDAI, BASFI, BASMI, ASDAS, HAQ, patient VAS score, MASES and SPARCC were collected from the Portuguese database Reumapt. Statistical analysis was performed with SPSS. Continuous variables were analysed through Spearman correlations.

Results: We included 119 patients with PsA (60 female), of which 14.9% were active smokers. The mean age of patients was 46.3 ± 1.03 years. The median disease duration was 6.8 (0.3-33.8) years and the mean BMI was 26.8 ± 0.5 Kg/m². Enthesitis, dactylitis, inflammatory back pain, peripheral arthritis, ungual dystrophy, and psoriasis were present in 53 (45.7%), 45 (38.8%), 76 (65.5%), 109 (94%), 45 (38.8%), 104 (89.7%) patients, respectively.

At baseline, mean (SD) disease activity parameters were: DAS 28 4vESR 4.9 (0.2), ESR 33.2 (2.3) mm/h; CRP 2.35 (0.3) mg/dL, HAQ 1.3 (0.1), BASDAI 6.6 (0.2), ASDAS 3.9 (0.1), BASMI 3.7 (0.2), BASFI 5.8 (0.3), MASES 1.9 (0.3), SPARCC 2.3 (0.3). Median (min-max) values of TJC, SJC and patient VAS score at baseline were 4 (0-28), 3 (0-19), 76 (0-100), respectively.

There were statistically significant positive correlations (0-12 months) between Δ MASES and Δ DAS 28 4vESR ($p=0.02$, $\rho=0.432$), Δ patient VAS score ($p=0.027$, $\rho=0.307$), Δ HAQ ($p=0.02$, $\rho=0.411$), Δ BASDAI ($p=0.025$, $\rho=0.326$), Δ BASFI ($p=0.037$, $\rho=0.315$), Δ ASDAS ($p=0.023$, $\rho=0.331$). Correlations

between Δ SPARCC and Δ DAS 28 4vESR ($p=0.023$, $\rho=0.332$), Δ patient VAS score ($p=0.003$, $\rho=0.402$), Δ HAQ ($p=0.012$, $\rho=0.440$), Δ BASDAI ($p=0.011$, $\rho=0.368$), Δ BASFI ($p=0.001$, $\rho=0.445$), Δ ASDAS ($p=0.002$, $\rho=0.437$), Δ CDAI ($p=0.039$, $\rho=0.320$) and Δ SDAI ($p=0.039$, $\rho=0.319$), were also significant. However, there weren't strong correlations between Δ MASES neither Δ SPARCC and PsARC response at 12 months.

Conclusion: Our results suggest that enthesitis is correlated with clinical response in PsA, supporting the idea that it is a major determinant of disease activity. It should be given more importance, namely by incorporating it in daily clinical practice, due to its major role, both in establishing an early diagnosis and in assessing treatment response.

References:

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SAT0417

TILDRAKIZUMAB EFFICACY ON PSORIASIS IN PATIENTS WITH PSORIATIC ARTHRITIS—A 52-WEEK ANALYSIS FROM A PHASE 2 STUDY

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Background: Tildrakizumab (TIL)—a high-affinity anti-interleukin-23p19 monoclonal antibody—is approved in the US, EU, and Australia to treat moderate to severe plaque psoriasis.¹ A randomised, double-blind, multidose, placebo-controlled, phase 2b study (NCT02980692) evaluating the efficacy and safety of TIL for the treatment of psoriatic arthritis (PsA) was recently completed.

Objectives: To evaluate the proportion with 75%/90%/100% improvement in Psoriasis Area and Severity Index (PASI 75/90/100) among patients (pts) with PsA and measurable psoriasis ($\geq 3\%$ of the body surface area [BSA] affected at baseline) over 52 weeks of treatment.

Methods: Pts ≥ 18 years old with PsA² and ≥ 3 tender and ≥ 3 swollen joints, stratified by prior anti-TNF use and baseline body weight (≤ 90 kg and >90 kg), were randomised 1:1:1:1 to receive TIL 200 mg every 4 weeks (Q4W) to week 52 (W52), TIL 200 mg every 12 weeks (Q12W) to W52, TIL 100 mg Q12W to W52, TIL 20 mg Q12W to W24→TIL 200 mg Q12W to W52, or placebo (PBO) Q4W to W24→TIL 200 mg Q12W to W52. PASI 75/90/100 were prespecified endpoints and were assessed by an independent assessor. Pts who received ≥ 1 dose of study drug were analysed. Safety assessments included treatment-emergent adverse event (TEAE) monitoring.

Results: Overall, 391/500 pts screened met inclusion criteria; 235 (60.1%) had $\geq 3\%$ BSA involvement at baseline (41–55/treatment arm). Demographics and baseline disease characteristics were generally consistent across treatment arms. Mean (standard deviation [SD]) age was 48.8 (12.6) years, average body mass index was 29.7, 96.7% of pts were White, and 23.3% were anti-tumour necrosis factor (TNF)-experienced. At baseline, the mean (SD) PASI score was 6.8 (8.2) and mean (SD) BSA affected was 10.5% (14.3%) overall. Among pts with baseline BSA $\geq 3\%$, TIL treatment significantly increased the proportion of PASI 75/90/100 responders vs PBO at W24; the proportion of responders continued to increase thereafter and was sustained through W52 (Figure). Similarly, in pts switching from PBO→TIL 200 mg Q12W or escalating from TIL 20→200 mg Q12W after W24, PASI 75/90/100 response rates increased through W36 and remained stable through W52. From W0→W24/W25→W52, 50.4%/39.9% pts experienced a TEAE. The most frequent TEAEs were nasopharyngitis (pooled TIL arms 5.4%/4.2% vs PBO 6.3%/3.8%) and upper respiratory tract infection (pooled TIL arms 3.8%/4.2% vs PBO 1.3%/0.0%). One pt (0.3%) discontinued before 24 weeks due to hypertension. There were no deaths or major adverse cardiac events during W0→W24 or W25→W52.