Table 1. Interstitial lung disease in PsA vs. RA in five Nordic biologic registers

	DENMARK		FINLAND		ICELAND		NORWAY		SWEDEN	
	RA	PsA	RA	PsA	RA	PsA	RA	PsA	RA	PsA
Number of individuals	7829	3386	4946	1091	675	470	1590	999	20596	6393
Number of treatment courses	17 072	6640	8634	1845	1280	859	2379	1427	38 279	10 824
Age baseline (SD)	57.3 (13.1)	49.0 (12.6)	53.8 (13.4)	48.8 (11.4)	53.9 (14.2)	50.1 (13.3)	53.8 (13.7)	48.7 (12.0)	57.1 (13.7)	50.6 (12.8)
Female n (%)	12 963 (76)	3929 (59)	6571 (76)	933 (51)	969 (76)	551 (65)	1815 (77)	818 (57)	29 635 (77)	6162 (57)
Number of PYR	40235	13986	21798	4910	4517	2799	4556	2653	120334	27412
ILD-events within PYR	218	22	132	8	7	2	32	6	680	28
IR pr 1000 PYR	5.4	1.6	6.1	1.6	1.5	0.7	7.0	2.3	5.7	1.0
IRR PsA vs RA crude	0.29 (0.18-0.45)		0.27 (0.11-0.55)		0.46 (0.05-2.42)		0.32 (0.11-0.78)		0.18 (0.12-0.26)	
HR PsA vs RA	0.31 (0.17-0.56)		0.46 (0.22-0.96)		0.62 (0.12-3.14)		0.19 (0.06-0.54)		0.25 (0.17-0.37)	

PYR: Patient years at risk, IR: Incidence rates, IRR: Incidence rate ratios, HR: Hazard Ratios

Conclusion: In these preliminary analyses, the incidence of ILD is lower in bDMARD treated PsA vs. RA patients, irrespective of co-medication with MTX. This indicates that the clinician should consider the rheumatological diagnosis when assessing the risk for future ILD in patients treated with bDMARDs and MTX.

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OP0223

DEVELOPMENT AND PRELIMINARY VALIDATION OF ULTRASONOGRAPHIC DISEASE ACTIVITY AND DAMAGE SCORES IN PSORIATIC ARTHRITIS PATIENTS: RESULTS FROM THE UPSTREAM (ULTRASOUND IN PSORIATIC ARTHRITIS TREATMENT) STUDY

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Background: The UPSTREAM (NCT03330769) is a 24-month multi-center prospective cohort study that primarily aims to evaluate the additional value of musculoskeletal ultrasound (msk-US) over clinical examination in predicting 6-month minimal disease activity in Psoriatic Arthritis (PsA). (1)

Objectives: To develop and preliminarily validate an activity msk-US score and a damage msk-US score for PsA using the UPSTREAM database.

Methods: Patients classified with PsA according to CASPAR criteria and starting a new course of therapy for clinically active peripheral joint disease were eligible. The information regarding objectives, study design, clinical and US assessment has already been published (1). The msk-US examination was performed in 42 joints, 36 tendons, 12 entheses and 2 bursae defined through a web-based exercise (2). The sonographic elementary lesions were allocated to disease activity [i.e. synovitis (sy), tenosynovitis (ts), peritendinitis (pt), bursitis (bs) all evaluated both in Grey Scale (GS) and Power Doppler (PD) and active enthesitis (en)] and to damage (i.e. joint erosion, bone proliferation, tendon tear, enthesophyte, calcification and irregular enthesis bone profile). Hands and feet X-ray were assessed using the modified Sharp-Van der Heijde (mSVH) score. A principal component (PC) analysis (PCA) was performed for each score and the number of PCs was defined by means of parallel analysis using baseline data. Each PC was normalized (n) taking into account the proportion between the observed value (e.g. sy-GS count) and the maximum expected value (e.g. 42 for sy-GS). Spearman' correlation was used to investigate the construct and discrimination validity of the new scores.

Results: Between February 2017 and May 2020, 312 PsA patients (155 men), with a mean (SD) age of 52.8 13.4, were enrolled from 19 centers; 22 expert sonographers were involved with substantial agreement for US lesions evaluated (k ≥0.7). The median [IQR] disease duration was 1.3 [0.1-6.1] years and the median [IQR] tender joint and swollen joint counts were 6 [3-13] and 2 [1-5], respectively. The weight derived from PCA for each sonographic lesions and the final equation for calculating the scores are reported in Figure 1 (1A activity and 1B damage). The final msk-US activity score **[n(ts-GS + ts-PD)*2.87] + [n(bs-GS + bs-PD)*1.76] + [n(pt-GS + pt-PD)*1.43] + [n(active en)*1.00] + [n(sy-GS)*0.83] + [n(sy-PD)*0.45]** has the best construct and discrimination validities according to a significant correlation with all clinical variables usually related to clinical activity (Table 1). The msk-US damage score correlated with mSVH score, HAQ and other clinical variables (Table 1).

Table 1.

	Msk-US activity score		Msk-US damage score	
Variables	*Spearman correlation*	*P-value*	*Spearman correlation*	*P-value*
ESR	0.196	0.002	0.075	0.235
CRP	0.209	<0.001	0.068	0.254
TJC	0.338	<0.001	0.286	<0.001
SJC	0.338	<0.001	0.072	0.221
Dactylitis count	0.284	<0.001	-0.061	0.306
LEI	0.194	0.001	0.214	<0.001
Physician GA	0.15	0.012	0.016	0.793
Patient GA activity	0.138	0.018	-0.073	0.221
Patient GA pain	0.199	0.001	-0.027	0.648
HAQ	0.238	<0.001	0.146	0.014
BASDAI	0.237	<0.001	0.175	0.003
PSAID-9	0.7	0.004	0.148	0.013
DAPSA	0.392	<0.001	0.228	<0.001
Sharp van Der Heijde score	0.115	0.2	0.266	0.003

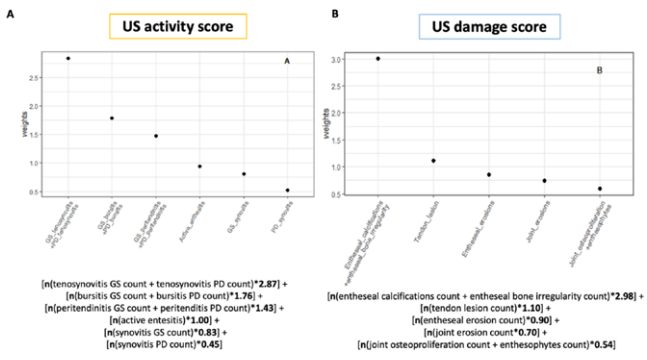

Figure 1.

Conclusion: These newly developed and preliminary validated msk-US activity and damage scores could be used in patients with PsA in the context of observational and controlled trials.

REFERENCES:

[1] Canzoni M et al. BMJ Open. 2018;8:e021942.
[2] Zabotti A et al. Ann Rheum Dis 2018;77:1537–1538.

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OP0224 CONTINUOUS COMPOSITE MEASURES FOR ROUTINE CARE IN PSORIATIC ARTHRITIS: THRESHOLDS OF MEANING AND CLINICALLY IMPORTANT DIFFERENCE ESTIMATES FOR THE 3 AND 4 VAS SCALES FROM A UK MULTICENTRE STUDY

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Background: There is a recognised need for a continuous composite measure of disease activity for the assessment of Psoriatic Arthritis (PsA) in routine clinical settings to allow objective assessment of response and implementation of treat to target.[1] Longer multidimensional measures are considered less feasible in routine care and a number of shorter measures have been proposed including, the Disease Activity Score for Psoriatic Arthritis (DAPSA), Disease Activity Score 28 (DAS28), the 3 Visual Analogue Scale (VAS) (comprising physician global VAS, patient global VAS and patient skin VAS) or 4 VAS (comprising physician global VAS, patient pain VAS, joint VAS and patient skin VAS). Testing of these measures in clinical trial datasets has been suggested but thresholds of meaning have not been established.[2]

Objectives: To estimate clinically relevant thresholds of disease activity and improvement for composite measures for routine clinical practice in PsA.

Methods: Clinical and patient reported outcome measures were assessed in patients fulfilling CASPAR criteria for PsA at three consecutive follow up visits in a UK multicentre observational study. Participants underwent clinical assessment and completed patient reported measures including health anchor questions. Estimates for Minimal Detectible Change (MDC) were derived using 1.96*2*Standard Error of the Mean (SEM). Minimal Clinically Important Difference (MCID) for improvement were derived using the health anchor method and two distribution methods (Table 1). Thresholds for low, moderate and high disease activity were triangulated from established cut-off values for the patient global VAS, PASDAS and DAPSA.

Table 1. Minimal Clinically Important Difference (MCID) and Minimal detectable change (MDC)

	ANCHOR (MEDIAN)	DISTRIBUTION#1	DISTRIBUTION #2	MDC
CPDAI	0.5	1.49	1.5	4.16
GRACE	0.26	0.6	0.77	2.18
PASDAS	1.22	0.64	0.76	1.58
DAS28	0.2	0.85	0.62	1.46
3VAS	1.13	1.16	0.91	3.12
4VAS	1.11	0.96	0.94	2.45
DAPSA	7.25	9.09	10.40	35.63

Disease Activity Score for Psoriatic Arthritis (DAPSA); Psoriatic Arthritis Disease Activity Score (PASDAS); Composite Psoriatic Arthritis Disease Activity Index (CPDAI); Disease Activity Score 28 (DAS28).Distribution #1: Baseline standard deviation (sd) * √ 1 – Cronbach's alphaDistribution #2: 0.5 * baseline sdMinimal detectable change (MDC): 1.96*2*SEM where SEM = baseline sd √1 - ICC

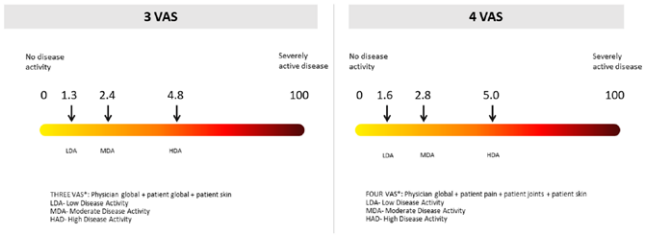
Results: 139 subjects were recruited (59 male, 80 female, mean (range) age (years) 52.7 (19 – 83), mean (range) duration of psoriasis (years) 21.9 (2 – 71), mean (range) duration of psoriatic arthritis (years) 6.1 (0 – 41). Cut-off values for low, moderate and high disease activity were 1.3, 2.4, and 4.8 for the 3 Vas and 1.6, 2.8 and 5.0 for the 4 VAS (Figure 1). Estimates for the MCID and MDC for the continuous composite measures and are reported in Table 1.

Conclusion: We report estimates of clinically relevant improvements for continuous composite measures in PsA and estimates of low, moderate and high disease activity for the 3 and 4 VAS scales. The thresholds of meaning can now be tested in independent observational and clinical trial datasets.

REFERENCES:

[1] Coates et al 2018 A&R Mar;70(3):345-355.
[2] Tillett W et al 2021 J Rheum In Press

Figure 1: Thresholds of Meaning for the 3 and 4 VAS



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OP0225 DEPRESSIVE SYMPTOMS IN PSA: A CROSS-SECTIONAL ANALYSIS FROM THE NATIONAL GERMAN RABBIT-SPA REGISTRY

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Background: Psoriatic arthritis (PsA) is a chronic inflammatory disease affecting the musculoskeletal system as well as skin and nails. The prevalence of depression in psoriasis and PsA is high and ranges from 7-40% [1]. Persistent depressive mood may influence disease activity outcome in PsA, especially patient-reported outcomes.

Objectives: To assess the correlation of depressive symptoms with PsA-specific outcome parameters.

Methods: RABBIT-SpA is a prospective longitudinal cohort study including PsA patients enrolled at start of a new conventional treatment or b/tsDMARD treatment. In regularly provided follow-up questionnaires, physician- and patient-reported information on the disease course including the depression screening tool WHO-5 to assess mental health is collected. For the current analysis, the WHO-5 score was categorised into 4 groups using validated cut-offs: severe depressive symptoms <13, moderate depressive symptoms 13-28, mild depressive symptoms 29-50, well-being >50. Spearman correlation coefficient was calculated to analyse the relationship between the WHO-5 score and various PsA related outcome parameters.

Results: 936 PsA patients were included. Baseline characteristics are shown in Table 1. In 411 patients (43.9%) the WHO-5 score indicated well-being, 249