MTX mono-therapy, combination therapy with MT +adalimumab 40 mg s/c eow was started. At baseline and after 1 year. of therapy the following PROs were analysed: trends in fatigue (according to FACIT) and in RAPID3 were studied in 64 pts, trends in patient's global disease activity (PGA) and in patient's pain VAS were studied in 78 pts, trends in levels of anxiety and depression (HADS) were studied in 49 pts. The data acquired was analysed with the use of Spearman's correlation.

Results: After 1 year of therapy, there was a significant improvement in the following scores: anxiety changed from 5.7 ± 3.1 to 4.3 ± 3.2 , ($p=0.003$), fatigue from 35.3 ± 9.6 to 41.3 ± 9.9 ($p<0.001$), RAPID3 from 13.4 ± 5.1 to 6.2 ± 5.2 ($p<0.001$), PGA from 56.0 ± 17.8 to 18.9 ± 17.1 ($p<0.001$), pain from 53.7 ± 18.6 to 16.9 ± 16.6 ($p<0.001$). Depression scores had also changed though not significantly: from 3.8 ± 3.0 to 3.2 ± 3.1 ($p=0.235$). The dynamics of anxiety and depression indexes correlated with the dynamics of fatigue ($r=0.64$ and $r=0.39$, accordingly), as well as dynamics of FACIT and RAPID3 indexes ($r=0.36$). Correlation of the dynamics of RAPID3 indexes with DAS ($r=0.45$) and DAS28 ($r=0.41$) activity reduction was found. Association of RAPID3 dynamics with the achievement of remission according to DAS ($p<0.001$) and DAS28 ($p<0.001$) was detected. Interrelation between RAPID3 dynamics and the achievement of MDA ($p<0.001$) was found. Correlation between dynamics of anxiety and depression indexes and the reduction of tender joint count (TJC) ($r=0.38$ and $r=0.36$, accordingly) was found. There is correlation between the dynamics of fatigue indexes and TJC, swollen joint count (SJC) and PGA ($r=0.30$, $r=0.25$ and $r=0.35$, accordingly). Dynamics of RAPID3 correlated with TJC and SJC dynamics ($r=0.33$, $r=0.25$), as well as with PGA and pain dynamics ($r=0.49$ and $r=0.58$). PGA and pain dynamics correlated with TJC and SJC dynamics ($r=0.34$ and $r=0.26$; $r=0.43$ and $r=0.39$, accordingly).

Conclusions: The T2T strategy in the Russian cohort of peripheral early PsA pts demonstrated the improvement of PROs indexes and decrease in PsA activity. Interrelation between the improvement of psychological status according to PROs (anxiety, depression and fatigue) and improvement in joint status (TJC and SJC) was found. RAPID3 is a reliable tool for evaluating patient's status: RAPID3 indexes correlate with the achievement of MDA and DAS/DAS28 remission.

Disclosure of Interest: None declared

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AB0919 VALIDATION OF PROTEOMIC BIOMARKERS OBSERVED IN MONOZYGOTIC TWINS CONFIRMS TWO PROTEINS ASSOCIATED WITH PSORIATIC DISEASE

E. Generali¹, N. Isailovic¹, A. Ceribelli¹, F. Sacchini², M. De Santis¹, M. Meroni¹, G. M. Guidelli¹, M. Caprioli¹, A. Costanzo^{2,3}, C. Selmi^{1,4}. ¹Rheumatology and Clinical Immunology; ²Dermatology Unit, Humanitas Research Hospital; ³Dermatology, Hunimed University, Rozzano; ⁴BIOMETRA Department, University of Milan, Milan, Italy

Background: Skin psoriasis affects 3% of the general population and as much as 20%–40% of patients will develop psoriatic arthritis (PsA), with the two conditions representing a clinical and immunological continuum within a prototype for chronic inflammation. Different from most rheumatic diseases, no serum autoantibody is associated with PsA, and there are currently no biomarkers for an early diagnosis and prediction of PsA onset in psoriasis, frequently causing a delayed diagnosis. Monozygotic twins discordant for psoriasis/PsA represent a unique setting to investigate the influence of environmental and stochastic factors on disease phenotype. Through a high-throughput proteomic analysis (SomaLogic) we have previously identified a set of 13 proteins differentially expressed in the serum of monozygotic twins discordant for psoriatic disease.

Objectives: To validate serum proteomic biomarkers of psoriatic disease using commercially available ELISA in monozygotic twins and in unrelated patients with psoriasis or PsA.

Methods: Our study included sera from our cohort of monozygotic twins previously described and from 70 unrelated patients with psoriatic disease (psoriasis without PsA 34%–49%, PsA with/without psoriasis 36%–51%; women 46%, median age 52 years, interquartile range 41–59) followed at Humanitas Research Hospital, and 25 healthy subjects (52% women, median age 52 years, IQR 44–62). Candidate serum proteomic biomarkers obtained by SomaLogic analysis were validated using commercially available ELISA kits and proteins are herein anonymized due to a pending patent request.

Results: We found a significant correlation between SomaLogic results in monozygotic twins and ELISA results in unrelated psoriatic cases in the serum levels of 2 proteins (figure 1), which are involved in inflammatory and immune response, and one has been previously reported in psoriatic plaques. Four proteins showed

a significantly different expression between psoriasis and PsA versus controls, in particular two proteins have a potential role in disease pathogenesis, as protein #1 acts as cell-surface receptor and regulates differentiation, proliferation and survival of dendritic cells, while protein #2 is involved in regulation of UV radiation-induced apoptosis and protein folding.

Abstract AB0919 – Figure 1

Conclusions: Two serum proteomic biomarkers, previously identified in a cohort of monozygotic twins discordant for psoriatic disease, can discriminate psoriatic disease, thus representing potential biomarkers of disease and possibly playing a pathogenetic role in disease.

Disclosure of Interest: None declared

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AB0920 TUMOUR NECROSIS FACTOR INHIBITORS PERSISTENCE IN PSORIATIC ARTHRITIS PATIENTS

E. Vieira-Sousa¹, M. Eusébio², P. Ávila-Ribeiro¹, N. Khmelinskii¹, A.R. Machado¹, T. Martins Rocha³, M. Bernardes³, D. Santos-Faria⁴, J. Leite Silva⁴, H. Santos⁵, C. Migueis⁶, P. Carvalho⁶, T. Costa⁷, L. Teixeira⁸, T. Meirinhos⁹, P. Nero¹⁰, M. J. Santos⁸. ¹Rheumatology and Metabolic Bone Diseases Department, Hospital de Santa Maria, CHLN and Rheumatology Research Unit, Instituto de Medicina Molecular, Faculty of Medicine, University of Lisbon, Lisbon Academic Medical Centre; ²Portuguese Society of Rheumatology, Lisbon; ³Rheumatology Department, Centro Hospitalar São João do Porto and Faculdade de Medicina da Universidade do Porto, Porto; ⁴Rheumatology Research Unit, Unidade Local de Saúde do Alto Minho, Ponte de Lima; ⁵Instituto Português de Reumatologia, Lisbon; ⁶Rheumatology Department, Hospitais Universitários de Coimbra, Coimbra; ⁷Rheumatology Department, Hospital de Egas Moniz, CHLO, Lisbon; ⁸Rheumatology Department, Hospital Garcia de Orta, Almada; ⁹Rheumatology Department, Centro Hospitalar do Baixo Vouga, Aveiro; ¹⁰Hospital CUF Descobertas, Lisbon, Portugal

Background: Tumour necrosis factor inhibitors (TNFi) lead to a dramatic improvement in the management of psoriatic arthritis (PsA). Nevertheless, a significant proportion of patients still do not respond and/or are intolerant to TNFis, requiring treatment switch for an adequate control of disease activity.

Objectives: To assess TNFis drug retention and the main reasons for TNFi discontinuation in PsA patients.

Methods: This was a non-interventional study of PsA patients registered at the Rheumatic Diseases Portuguese Registry (Reuma.pt), with at least one TNFi prescription. Drug retention for a first, second and third line TNFi was assessed by Kaplan-Meier survival analysis. The reasons for discontinuation were described as frequencies.

Results: 750 PsA patients were included, with a mean age of 47.6 years (± 11.6); 50.3% ($n=377$) female. 200 patients (26.7%) treated with adalimumab, 335 (44.7%) with etanercept, 114 (12.2%) with golimumab and 101 (13.5%) with infliximab, as first line TNFi. The majority (67.6%) were receiving concomitantly conventional synthetic disease modifying anti-rheumatic drugs (62.3% MTX) and 33.9% corticosteroids. The mean duration of TNFi retention was of 48.5 ± 40.1 months, when treated with a 1st TNFi, decreasing to 35.5 ± 33 months for the 2nd TNFi, and to 22.7 ± 22.9 months for the 3rd TNFi (figure 1). After being treated with a 1st TNFi, the majority of discontinuers (35.8% of the total population), withdraw due to lack or loss of effectiveness (53.5%) and due to adverse events (24.4%). The rates of discontinuation for the 2nd and 3rd TNFi were of 39% and 54%, respectively. Lack or loss of effectiveness and adverse events were maintained the two main reasons of withdrawal for the 2nd (62.3%; 21.6%) and 3rd TNFi (63%; 22.2%).

Abstract AB0920 – Figure 1. Drug retention of psoriatic arthritis patients registered at Rheumatic Diseases Portuguese Registry (Reuma.pt), treated with a first (A) second (B) and third (C) tumour necrosis factor inhibitor (TNFi) and overall (D) TNFi drug retention.

Conclusions: PsA patients registered at Reuma.pt treated with a 1st TNFi had an overall drug retention of 49 months. We observed a decrease in the average retention of TNFi therapy of 13.0 months in PsA patients who switched to a 2nd TNFi or a 3rd TNFi. Lack or loss of response were the main reason for TNFi discontinuation, independently of TNFi position, responsible for more than half of the discontinuations. The observed short survival of TNFis in PsA, and the inability to regain drug expectancy when switching to another TNFi, highlights the limitations from recycling between TNFi when aiming at long-term disease remission.

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AB0921 IMPACT OF BASELINE DEMOGRAPHICS, DISEASE ACTIVITY AND CONCOMITANT MEDICATION ON AMERICAN COLLEGE OF RHEUMATOLOGY 20 RESPONSE RATE AND HEALTH ASSESSMENT QUESTIONNAIRE-DISABILITY INDEX SCORE WITH TOFACITINIB IN ACTIVE PSORIATIC ARTHRITIS: A POOLED SUBGROUP ANALYSIS OF 2 PHASE 3 STUDIES

F. Behrens¹, J. Gomez-Reino², P. Nash³, D.D. Gladman⁴, O. FitzGerald⁵, C. Ritchlin⁶, E. Kudlacz⁷, J. Wu⁷, C. Wang⁷, A.B. Romero⁸. ¹CIRI/Rheumatology and Fraunhofer Institute IME, Translational Medicine and Pharmacology, Goethe University, Frankfurt, Germany; ²Hospital Clínico Universitario, Santiago de Compostela, Spain; ³University of Queensland, St Lucia, Brisbane, Australia; ⁴University of Toronto, Toronto Western Hospital, Toronto, ON, Canada; ⁵St Vincent's University Hospital, Dublin, Ireland; ⁶University of Rochester Medical Center, Rochester, NY; ⁷Pfizer Inc, Groton, CT, USA; ⁸Pfizer Inc, Barcelona, Spain

Background: Tofacitinib is an oral Janus kinase inhibitor for the treatment of psoriatic arthritis (PsA). In a pooled analysis of data from 2 Phase 3 trials in patients (pts) with active PsA, tofacitinib 5 and 10 mg twice daily (BID) significantly improved American College of Rheumatology (ACR) 20 response rates vs placebo (PBO) (50.0, 53.0 vs 28.0%, respectively; $p < 0.001$) and least squares mean (LSM) change from baseline (BL) in Health Assessment Questionnaire-Disability Index (HAQ-DI) score vs PBO (0.38, -0.38 vs -0.16, respectively; $p < 0.001$) at Month 3.¹

Objectives: To compare the efficacy of tofacitinib 5 and 10 mg BID vs PBO in predefined pt subgroups based on differences in BL demographics, disease activity and concomitant medication.

Methods: This was an analysis of pooled efficacy data from 2 Phase 3, randomised, double-blind, PBO-controlled studies (OPAL Broaden [12 months; NCT01877668] and OPAL Beyond [6 months; NCT01882439]) in pts with active

PsA (defined as ≥ 3 swollen and ≥ 3 tender joints). Pts in OPAL Broaden were tumour necrosis factor inhibitor (TNFi)-naïve with an inadequate response (IR) to ≥ 1 conventional synthetic disease-modifying antirheumatic drug (csDMARD). Pts in OPAL Beyond had an IR to ≥ 1 TNFi. Pts were randomised to receive tofacitinib 5 or 10 mg BID, subcutaneous adalimumab 40 mg every 2 weeks (OPAL Broaden; data not included) or PBO. Pts continued to receive a stable dose of a single csDMARD. ACR20 response rates and LSM change from BL in HAQ-DI at Month 3 (primary endpoint data) were evaluated by subgroup category (demographic and disease characteristics at BL or at screening). Analyses were based on the full analysis set (table 1).

Results: In total, 238, 236 and 236 pts received tofacitinib 5 mg BID, 10 mg BID, or PBO, respectively. Across all subgroups analysed, tofacitinib 5 and 10 mg BID were generally associated with greater improvements at Month 3 in ACR20 and change from BL in HAQ-DI score than PBO (table 1). In pts classified as current smokers, slightly lower ACR20 response rates and similar changes from BL in HAQ-DI score to corresponding PBO at Month 3 were observed relative to never- or ex-smokers; however, the sample size was small.

Abstract AB0921 – Table 1. Pooled efficacy at Month 3 by subgroup

Subgroup	Baseline category	ACR20 response rate (%) [n/N1]			LSM change from baseline in HAQ-DI [N2]		
		Tofacitinib 5 mg BID (N=238)	Tofacitinib 10 mg BID (N=236)	Placebo (N=236)	Tofacitinib 5 mg BID (N=238)	Tofacitinib 10 mg BID (N=236)	Placebo (N=236)
Race	White	48.7 (110/226)	51.4 (114/221)	38.4 (85/222)	-0.37 (224)	-0.37 (231)	-0.14 (231)
	Other	75.9 (9/13)	75.4 (11/15)	21.4 (3/14)	-0.40 (12)	-0.38 (12)	-0.14 (14)
Ethnicity	Hispanic/Latino	65.7 (23/35)	81.3 (13/16)	50.0 (15/30)	-0.48 (35)	-0.45 (36)	-0.34 (36)
	Non-Hispanic/Latino	47.3 (96/203)	50.9 (112/220)	34.8 (81/236)	-0.35 (203)	-0.35 (230)	-0.33 (236)
Gender	Male	53.9 (63/117)	53.2 (63/119)	27.9 (27/100)	-0.36 (116)	-0.40 (116)	-0.14 (99)
	Female	46.3 (26/57)	52.8 (27/51)	38.7 (38/136)	-0.37 (57)	-0.37 (56)	-0.38 (136)
Geographic region	US/Canada	50.0 (28/56)	48.2 (27/56)	24.9 (13/52)	-0.38 (56)	-0.38 (56)	-0.19 (44)
	Australia/N Europe	36.2 (21/58)	44.1 (24/55)	22.3 (10/45)	-0.32 (58)	-0.23 (55)	-0.04 (49)
	Russia/E Europe	51.4 (48/93)	56.5 (54/95)	25.9 (29/112)	-0.39 (93)	-0.37 (94)	-0.31 (112)
	ROW	72.4 (21/29)	78.2 (16/21)	43.3 (13/30)	-0.41 (29)	-0.41 (21)	-0.38 (30)
Pt A duration, years	<2	53.7 (22/41)	49.1 (27/55)	34.1 (15/44)	-0.34 (41)	-0.38 (52)	-0.20 (44)
	≥ 2	42.0 (27/65)	46.0 (27/59)	34.4 (15/44)	-0.39 (65)	-0.37 (59)	-0.32 (55)
Age, years	<65	47.7 (102/214)	54.0 (114/212)	27.9 (57/211)	-0.38 (212)	-0.39 (213)	-0.34 (210)
	≥ 65	70.8 (17/24)	42.9 (9/21)	36.0 (9/25)	-0.39 (24)	-0.27 (21)	-0.17 (25)
Baseline bodyweight, kg	≤ 60	50.0 (25/50)	46.0 (23/50)	34.0 (16/47)	-0.35 (50)	-0.35 (50)	-0.20 (49)
	>60	48.3 (83/172)	56.7 (97/171)	36.4 (49/134)	-0.38 (170)	-0.40 (171)	-0.38 (132)
	≥ 100	65.2 (30/46)	49.4 (18/37)	30.3 (6/33)	-0.38 (46)	-0.34 (37)	-0.08 (33)
BMI, kg/m ²	<25	41.2 (20/51)	35.1 (27/49)	27.9 (7/81)	-0.39 (50)	-0.47 (49)	-0.23 (80)
	≥ 25 to <30	48.3 (42/87)	55.7 (64/99)	30.4 (22/72)	-0.33 (87)	-0.34 (99)	-0.31 (72)
	≥ 30 to <40	51.8 (48/93)	50.6 (46/91)	27.4 (26/95)	-0.38 (93)	-0.37 (91)	-0.19 (91)
	≥ 40	64.7 (10/17)	47.1 (5/17)	12.7 (1/8)	-0.34 (17)	-0.38 (17)	NA
Pt A co-therapy, number of joints	<1	61.0 (2)	88.0 (4/5)	43.4 (1/2)	NC ^a	NC ^a	NC ^a
	≥ 1	50.4 (118/234)	52.4 (121/233)	27.5 (83/229)	NC ^a	NC ^a	NC ^a
Distal interphalangeal joint involvement ^b	Yes	46.4 (71/153)	50.3 (76/151)	34.1 (51/134)	NC ^c	NC ^c	NC ^c
	No	56.7 (48/85)	57.1 (49/85)	30.4 (21/102)	NC ^c	NC ^c	NC ^c
Arthritis mutilans ^b	Yes	37.3 (6/16)	33.3 (3/9)	24.1 (4/23)	NC ^c	NC ^c	NC ^c
	No	50.9 (110/222)	54.6 (119/218)	28.2 (69/211)	NC ^c	NC ^c	NC ^c
Spondylitis ^b	Yes	42.4 (20/47)	42.4 (20/47)	22.7 (7/44)	NC ^c	NC ^c	NC ^c
	No	51.1 (96/188)	53.6 (105/195)	29.2 (56/192)	NC ^c	NC ^c	NC ^c
Smoking status ^b	Never smoked	51.1 (71/139)	54.3 (76/140)	24.7 (39/158)	-0.37 (137)	-0.39 (140)	-0.31 (137)
	Smoker	35.1 (13/37)	44.4 (20/45)	46.2 (8/39)	-0.34 (37)	-0.34 (37)	-0.38 (39)
	Ex-smoker	54.5 (23/42)	56.9 (28/51)	33.1 (9/39)	-0.40 (42)	-0.40 (51)	-0.33 (39)
Baseline CRP, mg/L	<2.87	53.6 (82/153)	60.1 (88/147)	27.3 (39/143)	-0.38 (152)	-0.40 (148)	-0.34 (142)
	≥ 2.87	43.2 (37/85)	49.3 (26/88)	29.8 (7/85)	-0.37 (84)	-0.27 (88)	-0.17 (85)
PASDA ^b	≤ 2	61.0 (2)	100 (1/1)	33.3 (1/3)	NC ^c	NC ^c	NC ^c
	≥ 3 to ≤ 4	50.8 (31/61)	51.0 (21/49)	29.9 (20/67)	-0.32 (61)	-0.30 (49)	-0.22 (67)
	≥ 5	51.8 (86/166)	53.2 (94/180)	27.3 (44/162)	-0.42 (167)	-0.40 (162)	-0.34 (166)
PASI score ^b	≤ 10	51.0 (75/145)	53.8 (72/135)	28.7 (44/148)	-0.37 (146)	-0.40 (139)	-0.34 (147)
	>10	40.0 (69/173)	54.6 (112/205)	30.0 (29/96)	-0.37 (173)	-0.40 (205)	-0.27 (96)
DSS-0 ^b	Yes	47.2 (69/127)	52.8 (66/125)	27.3 (33/123)	-0.35 (127)	-0.40 (123)	-0.36 (126)
	No	52.7 (101/191)	52.7 (101/191)	29.9 (53/114)	-0.42 (190)	-0.39 (119)	-0.22 (114)
SPARCC -0 vs LEI ≥ 0	Yes	48.7 (97/197)	53.3 (104/195)	23.4 (41/180)	-0.38 (196)	-0.36 (195)	-0.32 (184)
	No	50.0 (25/50)	50.0 (25/50)	43.8 (14/32)	-0.37 (49)	-0.46 (46)	-0.33 (47)
Concomitant csDMARD	MTX only	48.9 (91/186)	51.0 (98/188)	34.9 (32/189)	-0.37 (187)	-0.41 (183)	-0.31 (181)
	Other	53.9 (121/225)	47.2 (123/261)	33.3 (64/192)	-0.41 (225)	-0.38 (261)	-0.32 (192)
Concomitant use (yes)	Yes	46.3 (31/67)	51.4 (39/77)	30.6 (15/47)	-0.33 (66)	-0.41 (67)	-0.18 (49)
	No	51.5 (88/171)	53.3 (106/199)	27.3 (51/187)	-0.40 (170)	-0.38 (199)	-0.34 (184)

^aAnalysis was not conducted due to small sample size; ^bAt screening; ^cIn pts with baseline PASI >0 and baseline BSA $\geq 3\%$

Statistical methods: ACR20 response was defined as achieving a $\geq 20\%$ improvement in ACR criteria components Missing ACR20 response was considered a non-response to treatment

LSMs were calculated based on a mixed model for repeated measures without imputation for missing values

ACR, American College of Rheumatology; BID, twice daily; BMI, body mass index; BSA, body surface area; CRP, C-reactive protein; csDMARD, conventional synthetic disease-modifying antirheumatic drug; DSS, Dactylitis Severity Score; HAQ-DI, Health Assessment Questionnaire-Disability Index; LEI, Leeds Enthesitis Index; LSM, least squares mean; MTX, methotrexate; N, number of patients in full analysis set (randomised and received ≥ 1 treatment dose); n, number of responders; N1, number of patients in the full analysis set by category of subgroup and treatment; N2, number of patients included in the repeated measures model by category of subgroup and treatment; NC, analysis not conducted; PASDA, Psoriatic Arthritis Disease Activity Score; PASI, Psoriasis Area and Severity Index; PsA, psoriatic arthritis; pts, patients; ROW, rest of world (Brazil, Mexico and Taiwan); SPARCC, Spondyloarthritis Research Consortium of Canada (enthesitis index)

Conclusions: In this analysis of pooled data from 2 Phase 3 studies in pts with active PsA, tofacitinib 5 and 10 mg BID consistently improved efficacy at Month 3 compared with PBO across all predefined subgroups evaluated, with the exception of current smokers; however, as this was not a pre-specified analysis and some subgroups (including smoking status) were small, interpretation should be made with caution.