at least €750 million a year. Ensuring that people who have been recently diagnosed with an RMD (or who have been living with one for a long time), have the opportunity to remain in or return to work, is central to the ideas behind *Fit-for-Work*. Everyone has a role to play to make this happen, and everyone needs to be flexible & realistic, because in the end of the day, everyone stands to benefit.

Disclosure of Interest: None declared

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OP0199-PARE **SUPPORT TO STAY EMPLOYED AND SOCIAL SECURITY ARRANGEMENTS FOR WORK DISABILITY DUE TO RA – PERCEPTIONS OF PATIENTS WITH RA AND RHEUMATOLOGISTS IN 31 EUROPEAN COUNTRIES**

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Background: Despite demonstrated influence of country of residence on labour force participation among patients with RA, little attempt has been made to understand the users' perceptions of support and social security (SS) systems.

Objectives: To explore the patterns in perceptions among patients with RA and rheumatologists from different European countries across five domains (1) importance and support to remain employed, (2) process of applying for WD, (3) obtaining and living with WD pension, (4) role of the rheumatologists in support to remain employed or apply for WD pension and (5) performance of the system.

Methods: A survey among RA patients and rheumatologists was conducted in 44 countries of European WHO Region. For each domain, several questions (4 to 6 questions per domain, each on a 1–5 Likert answer scale, dichotomized as 1 ("totally (agree)") and 0 ("not agree, not disagree", "totally (disagree)") were asked (Table). Next, sum scores were calculated for each domain and averaged per country. The domain "remaining employed" was assessed in patients who currently have or ever had work. Analyses in domains "process of applying for WD" and "obtaining and living with WD" were limited to patients who currently have or ever considered applying for WD. Comparisons of scores in all domains were explored by: EU-15, new EU member states and non-EU countries, the five types of social welfare system (Anglo-Saxon, Bismarckian, Mediterranean, Post-Communist, and Scandinavian) and by countries' wealth (GDP per capita adjusted for purchasing power parity (PPP)) using ANOVA or Pearson correlation, as appropriate.

		Perceptions among patients [§]			Perceptions among rheumatologists [§]	
		Importance and support to remain employed (0-4)	Process of applying for WD (0-6)	Obtaining and living with WD (0-4)	Performance of SS system (0-4)	Role of rheumatologist (0-4)
		Mean (SD)				
GDP	GDP < 27,000 USD PPP per capita (n=16)	1.68 (0.48)§	2.10 (0.98)§	1.22 (0.61)§	1.39 (0.51)§	2.38 (0.53)α
	GDP ≥ 27,000 USD PPP per capita (n=15)	1.85 (0.60)§	2.67 (1.03)§	1.27 (0.57)§	1.74 (0.71)§	1.91 (0.51)α
Type of system	Anglo-Saxon (n=1)	0.75 (.)*	0.92 (.)*	0.67 (.)*	0.83 (.)*	2.00 (.)
	Bismarckian (n=5 (patients), n=6 (rheumatologists))	1.77 (0.29)	2.35 (0.34)	1.26 (0.70)	1.91 (0.36)	1.71 (0.23)
	Mediterranean (n=7)	1.88 (0.54)	2.12 (0.79)	1.17 (0.51)	1.35 (0.87)	2.12 (0.74)
	Post-Communist (n=15)	1.71 (0.52)	2.24 (0.94)	1.22 (0.63)	1.44 (0.52)	2.32 (0.53)
	Scandinavian (n=3)	2.86 (0.48)*	4.18 (1.14)*	1.66 (0.35)*	2.36 (0.07)*	2.11 (0.55)
EU status	EU-15 (N=12)	1.97 (0.66)	1.18 (0.59)	2.24 (0.88)	1.59 (0.73)	1.84 (0.50)*
	EU new member states (n=11)	1.83 (0.53)	1.24 (0.62)	2.25 (1.05)	1.59 (0.60)	2.22 (0.43)
	Non-EU (n=8)	1.66 (0.65)	1.34 (0.58)	2.76 (1.23)	1.54 (0.64)	2.42 (0.64)*

[§] score on each domain implies the higher, the better *statistically significant differences (p<0.05). Relationship between GDP (as continuous variable) and each domain was tested with Pearson correlation coefficient § 0.41 (p<0.05); § not significant; α 0.44 (p<0.05).

Results: Of 44 countries, 31 (70%) and 30 (68%) have provided data for patients and rheumatologists, respectively. In total, 646 patients (mean age (SD) 53 (12), 76% female, 519 (78%) ever worked) and 500 rheumatologists filled in the questionnaires. Overall, positive weak to no relationships were present between the GDP per capita and perceptions from rheumatologists or patients about SS arrangements. However, significant differences were observed across the systems type with the Scandinavian type (Finland, Norway, Sweden) consistently scoring higher than the others on most domains (table). Remarkably, rheumatologists in less wealthy and non-EU countries felt more confident in their role related to WD pension.

Conclusions: Patients' and rheumatologists' perceptions of systems to support persons with RA encountering work restrictions varied mostly according to the type of the social welfare system, while remarkably little differences were related to country's wealth and membership in EU. Scandinavian employment support and social security system appeared to most adequately meet the expectations of patients and rheumatologists in questions of remaining at work and application to WD pension.

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THURSDAY, 15 JUNE 2017

Epidemiology of rheumatic and musculoskeletal diseases - a critical appraisal

OP0200 **CONFOUNDING BY INDICATION WILL MAKE NON-TNFI bDMARDS APPEAR MORE HARMFUL THAN TNFI bDMARDS - A NATIONWIDE STUDY OF CHANNELING IN SWEDEN 2010-2014**

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Background: Confounding by indication occurs when factors associated with the choice of therapy are also predictors of the studied outcome, and is generally considered the major limitation of non-randomized comparisons of different therapies. In RA, age, sociodemographic factors, disease activity, and medical history may influence the choice of e.g. a non-TNFi over a TNFi bDMARD. The degree of bias is difficult to assess since most studies have limited data on potential confounders, and residual confounding cannot be separated from true treatment effects.

Objectives: To quantify the expected confounding by indication caused by baseline differences in patient characteristics at initiation of different bDMARDS in RA.

Methods: All RA patients in the Swedish Rheumatology Register (SRQ) were linked to nationwide registers to assess whether a comprehensive list of covariates predicted the choice of bDMARD to such a degree that different rates of adverse events (AEs) would be expected. Among considered confounders were demographic variables, RA related factors (including RF, disease duration, HAQ, DAS28 w. components) and medical history (health care utilization and 20 specific conditions).

We used historical data on the 5 year risk of several AEs among RA patients starting any bDMARD 2005–2009 to predict the risk among RA patients (bionactive and switching from a first TNFi) starting specific bDMARDS 2010–2014. Risk was modelled in logistic regressions, as a function of baseline characteristics but assuming no effect from the therapy itself.

Results: Patients starting non-TNFi were older than those starting a TNFi, had lower socioeconomic status, higher disease activity and more often a history of diseases including malignancy, serious infections, and diabetes. These factors were in general also significant predictors of AEs, and the predicted proportions of all AEs were substantially higher for non-TNFi compared to TNFi bDMARDS, highest for rituximab. Within the TNFi-group, only minor differences were seen. Age was a strong confounder, and standardizing to the age/sex-distribution of the TNFi group reduced the group difference dramatically.

Predicted percentage with AE within 5 years, based on observed baseline characteristics. Crude and standardized to age-sex distribution of TNFi as first bDMARD

	All-cause mortality		All-cause hospitalization		Malignancy		MACE		Serious infection	
	Crude	Std	Crude	Std	Crude	Std	Crude	Std	Crude	Std
First bDMARD										
TNFi	4.9		60.3		5.4		6.2		15.3	
Rit.	12.8	6.7	74.0	67.6	7.7	5.7	11.9	7.3	25.6	18.9
Toc.	8.5	7.7	63.6	64.2	5.8	5.2	8.4	8.8	19.4	18.8
Aba.	11.6	6.9	67.5	61.5	6.2	5.0	12.4	7.1	22.1	17.3
Switch from TNFi										
TNFi	5.3	5.5	68.8	68.6	5.0	5.1	7.0	7.2	17.8	18.0
Rit.	7.8	6.4	74.6	71.7	5.7	4.9	9.3	7.3	22.4	20.1
Toc.	6.5	6.8	72.3	68.3	5.3	5.0	8.4	8.0	19.8	18.8
Aba.	7.5	5.6	71.1	71.4	5.5	5.0	8.8	7.6	20.7	18.9

Conclusions: Even if there are no true differences in risk by bDMARD,

confounding by indication will make the non-TNFi drugs appear less safe than the TNFi. A simple adjustment for age and sex will reduce this confounding dramatically, but residual confounding is still expected to give higher rates of AEs, and comparisons should be adjusted for medical history and comorbidities when possible.

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PsA: an integrated perspective

OP0201 A PHASE 3 STUDY OF THE EFFICACY AND SAFETY OF IXXEKIZUMAB IN PATIENTS WITH ACTIVE PSORIATIC ARTHRITIS AND INADEQUATE RESPONSE TO TUMOUR NECROSIS FACTOR INHIBITOR(S)

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Background: Tumour necrosis factor inhibitors (TNF-i) have revolutionised the management of psoriatic arthritis (PsA) yet some patients (pts) have an inadequate response (IR) or intolerance. Ixxekizumab (IXE), a monoclonal high affinity antibody that selectively targets IL-17, has shown efficacy in TNF-naïve PsA pts.¹

Objectives: To compare efficacy and safety of IXE with placebo in pts with active PsA who are TNFi-IR.

Methods: In the 24 week (wk), double-blind, placebo-controlled period of a Phase 3 PsA study (SPIRIT-P2; NCT02349295), pts with prior IR or intolerance to 1 or 2 TNF-i were randomised to SC placebo or IXE 80 mg every 2 (Q2W) or 4 wks (Q4W), following a 160 mg initial dose at Wk 0. Pts with IR to treatment (protocol defined) received rescue therapy at Wk 16. Primary endpoint was ACR20 at Wk 24. Continuous data were analyzed using mixed-effects model for repeated measures; categorical data, using a logistic regression model with missing values imputed by non-responder imputation, which treats IR as non-responders.

Results: 363 pts were randomized: ~52 yrs old on average, female (53%), white (~92%), and IR to 1 or 2 TNF-i (204 [56.2%], 128 [35.3%], respectively) or TNF-intolerant (31 [8.5%]). Most pts had current psoriasis (93.4%) and BSA_≥3 (62.5%). The majority (87%) completed the 24-wk, double-blind period. A significantly higher proportion of IXE- vs placebo-treated pts at Wk 24 achieved ACR20 (65 [53.3%], 59 [48%] vs. 23 [19.5%]; Q4W, Q2W, placebo, respectively), ACR50 (43 [35.2%], 41 [33.3%] vs 6 [5.1%]; Q4W, Q2W, placebo, respectively), ACR70 (27 [22.1%], 15 [12.2%] vs 0; Q4W, Q2W, placebo, respectively), MDA (34 [27.9%], 29 [23.6%] vs 4 [3.4%]; Q4W, Q2W, placebo, respectively), DAS28-CRP, and reductions in functional disability (HAQ-DI) (Table). A significantly higher

Outcomes	Week 12			Week 24		
	Placebo (N=118)	IXEQ4W (N=122)	IXEQ2W (N=123)	Placebo (N=118)	IXEQ4W (N=122)	IXEQ2W (N=123)
ACR20 n (%)	26 (22.0)	61 (50.0)**	59 (48.0)**	23 (19.5)	65 (53.3)**	59 (48.0)**
ACR50 n (%)	4 (3.4)	38 (31.1)**	41 (33.3)**	6 (5.1)	43 (35.2)**	41 (33.3)**
ACR70 n (%)	2 (1.7)	18 (14.8)*	13 (10.6)*	0	27 (22.1)**	15 (12.2)**
HAQ-DI CFB LSM (SE)	-0.1 (0.06)	-0.4 (0.06)**	-0.4 (0.06)**	-0.2 (0.08)	-0.6 (0.07)**	-0.4 (0.07)**
DAS28-CRP CFB LSM (SE)	-0.6 (0.17)	-1.8 (0.17)**	-1.5 (0.16)**	-0.8 (0.20)	-2.1 (0.19)**	-1.8 (0.18)**
LEI (0) ^a n/N (%)	20/69 (29.0)	19/68 (27.9)	29/84 (34.5)	15/69 (21.7)	24/68 (35.3)	26/84 (31.0)
LDI-B (0) ^b n/N (%)	5/14 (35.7)	19/28 (67.9)	12/20 (60.0)	3/14 (21.4)	21/28 (75.0)*	10/20 (50.0)
PASI 75 ^c n/N (%)	7/67 (10.4)	39/68 (57.4)**	42/68 (61.8)**	10/67 (14.9)	38/68 (55.9)**	41/68 (60.3)**
Minimal disease activity (MDA) n (%)	6 (5.1)	31 (25.4)**	21 (17.1)*	4 (3.4)	34 (27.9)**	29 (23.6)**
Safety, n (%)						
TEAE	--	--	--	76 (64.4)	83 (68.0)	90 (73.2)
SAE	--	--	--	4 (3.4)	3 (2.5)	8 (6.5)
Discontinued from AE	--	--	--	6 (5.1)	5 (4.1)	8 (6.5)
Infections	--	--	--	35 (29.7)	47 (38.5)	47 (38.2)
Serious	--	--	--	0	0	3 (2.4)
Oral candida	--	--	--	0	0	4 (3.3)
Injection site reactions ^d	--	--	--	5 (4.2)	14 (11.5)**	29 (23.6)**

Abbreviations: CFB=change from baseline; SAE=serious adverse event.

^aOnly pts with enthesitis at baseline (LEI>0) were included in the analysis.

^bOnly pts with dactylitis (LDI-B>0) at baseline were included.

^cOnly pts with psoriatic lesions $\geq$ 3% of BSA at baseline were included.

^dInjection site reactions is a high-level term consisting of multiple lower-level terms.

*P<0.05; **P<0.001.

proportion of IXE-Q4W- vs placebo-treated pts reached complete resolution of dactylitis (LDI-B=0). Although enthesitis improved from baseline with both IXE doses, rates of complete resolution (LEI=0) were not significantly different compared to placebo. At Wk 24, significantly greater proportions of IXE-treated pts with $\geq$ 3% BSA achieved PASI 75 than placebo-treated patients. The incidence of treatment-emergent adverse events (TEAE) was similar across groups (83 [68%], 90 [73.2%] vs 76 [64.4%]; Q4W, Q2W, placebo, respectively). A numerically higher proportion of IXE-treated pts reported infection and a significantly higher proportion reported injection site reactions (the majority were mild) (Table). Serious infection (0, 3 [2.4%], 0; Q4W, Q2W, placebo respectively), serious AE, and oral candidiasis were numerically higher with Q2W vs placebo. No deaths or cases of inflammatory bowel disease, uveitis, TB reactivation, or grade $\geq$ 3 neutropenia were reported.

Conclusions: IXE improved arthritis¹, physical function, and psoriasis^{2,3} vs placebo with no unexpected safety findings in patients with active PsA and prior IR or intolerance to TNF-inhibitor(s).

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OP0202 EFFICACY AND SAFETY OF TOFACITINIB, AN ORAL JANUS KINASE INHIBITOR, IN PATIENTS WITH ACTIVE PSORIATIC ARTHRITIS AND AN INADEQUATE RESPONSE TO TUMOUR NECROSIS FACTOR INHIBITORS: OPAL BEYOND, A RANDOMISED, DOUBLE-BLIND, PLACEBO-CONTROLLED, PHASE 3 TRIAL

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Background: Tofacitinib is an oral Janus kinase inhibitor under investigation for treatment of PsA.

Objectives: Evaluation of efficacy and safety of tofacitinib vs placebo (PBO) in adult patients (pts) with active PsA and an inadequate response (IR) to TNF inhibitors (TNFi).

Methods: Eligible pts in this 6-month, randomised, PBO-controlled, double-blind, multicentre, Phase 3 study had $\geq$ 6 months' PsA diagnosis, met CASPAR criteria, had active arthritis ($\geq$ 3 tender/painful and $\geq$ 3 swollen joints) at screening and baseline, active plaque psoriasis at screening and IR to $\geq$ 1 TNFi (discontinued due to inadequate efficacy or adverse event [AE]). Pts were randomised 2:2:1:1 to tofacitinib 5 mg twice daily (BID), tofacitinib 10 mg BID or PBO (advancing to tofacitinib 5 or 10 mg BID in a blinded manner at Month [M]3). Ongoing treatment with 1 conventional synthetic DMARD was required. Pts were followed through M6. Primary endpoints were ACR20 response rate and change (Δ) from baseline in Health Assessment Questionnaire-Disability Index (HAQ-DI) at M3.

Results: Pts were 92.1% white, 55.3% female and mean age was 50.0 years. At baseline, mean swollen and tender/painful joint counts were 22.0 and 11.8 respectively; mean HAQ-DI score was 1.3; 69.8% of pts had LEI $>$ 0; 49.2% had Dactylitis Severity Score (DSS) $>$ 0. Most patients (62.7%) had $\geq$ 3% BSA affected by psoriasis, for whom median PASI score was 7.9. Discontinuation rate at M3 was 7.6%, and 87.6% completed M6. ACR20 response and Δ HAQ-DI significantly improved with both tofacitinib doses vs PBO at M3 (Fig 1A,B) and were maintained to M6 (Fig 1C,D). Tofacitinib 5 mg and 10 mg BID demonstrated superior ACR20 response vs PBO as early as Week 2 (26.7% [$p \leq 0.05$] and