arthritis. Thus, we aimed to explore the association between survivin and IFN γ producing phenotype of CD4 T cells.

Objectives: We study if survivin mediates the glucose dependent mechanism of IFN γ production in CD4 T cells.

Methods: CD4 cells were sorted from the peripheral blood of RA patients and healthy controls, activated with aCD3, cultured in presence of survivin inhibitor YM155 and subjected to RNA sequencing (Illumina, Life Science). IFN γ levels in supernatants were measured by ELISA. To study glucose uptake in presence of YM155, CD4 cells were treated with IFN γ +aCD3 overnight followed by 2NBD-glucose challenge for 30 min. Uptake of fluorescent 2NBD-glucose probe was measured by flow cytometry. Statistical analysis of RNAseq was performed in R-studio using the Bioconductor package DESeq2.

Results: Comparison of the whole-genome transcription profile of CD4 cells different by levels of BIRC5, coding for survivin, demonstrated that the BIRC5hi group expressed significantly higher levels of IFN γ (mRNA, $p=10^{-26}$ and protein, $p=10^{-4}$). Also, BIRC5hi CD4 cells had higher expression of glucose transporter GLUT1 (SLC2A1, $p=0.0064$) and of glycolytic enzymes glucose-6-phosphate dehydrogenase (G6PD, $p=10^{-6}$), pyruvate kinase (PFKP, $p=10^{-6}$), and lactate dehydrogenase (LDHA, $p=10^{-14}$). On the contrary, expression of the key regulator of glycolysis 6-phosphofructo-2-kinase (PFKFB3) was significantly lower in the BIRC5hi group ($p=4.4 \times 10^{-5}$). Notably, expression of glycolytic enzymes G6PD and PFKFB3 correlated strongly to IFN γ ($r=0.880$ and -0.698 , respectively), TBX21 ($r=0.811$ and -0.698) and perforin ($r=0.781$ and -0.698). To demonstrate functional relevance of the connection between BIRC5 and glucose metabolism, survivin was inhibited in CD4 cell cultures. Survivin inhibition resulted in significant increase of PFKFB3 ($p=7 \times 10^{-6}$) and LDHA ($p=0.0089$), leading to inhibition of phosphoglycerate mutase PGAM1 and ATF citrate lyase ACLY ($p=0.021$ and $p=0.0074$, respectively), which dignify the restoration of aerobic glycolysis. Importantly, inhibition of survivin decreased 2NBD-glucose uptake by CD4 cells ($p=0.031$) and reduced expression of GLUT1 ($p=0.034$). These changes in glucose metabolism were followed by decreased IFN γ production in supernatants ($p=0.037$).

Conclusion: The study demonstrates a strong connection between IFN γ production and glucose metabolism in CD4 cells. Survivin emerges as an important regulator of glycolysis acting through expression of glycolytic enzymes and glucose transport.

Disclosure of Interests: None declared.

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Let's work. Together.

OP0316

ASSOCIATION BETWEEN INDIVIDUAL AND COUNTRY-LEVEL SOCIOECONOMIC FACTORS AND WORK PARTICIPATION IN PERIPHERAL AND AXIAL SPONDYLOARTHRITIS: ANALYSIS OF THE ASAS PERSPA STUDY

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Background: Work outcomes in spondyloarthritis (SpA) have mostly been studied in axSpA, less in peripheral SpA (pSpA) or PsA. The ASAS-COMOSPA study showed that lower education, female gender and lower healthcare expenditures (HCE) are associated with lower odds of employment in SpA. However, it is unknown whether country-level factors or SpA phenotype (axSpA/pSpA/PsA) modify the effect of individual-level socioeconomic factors.

Objectives: To examine whether associations between socioeconomic factors and work outcomes differ across SpA phenotype and whether associations for individual-level socioeconomic factors are modified by country-level factors.

Methods: Working age patients (18-65 years) from the ASAS-perSpA (peripheral involvement in SpA) study were included. Associations between individual- (age, gender, education, marital status) and country-level socioeconomic factors (Human Development Index (HDI), HCE) with work outcomes (employment status (binary), absenteeism, presenteeism (tertiles)) were assessed using

mixed-effects logistic and ordinal logistic models. Models were adjusted for confounders. Separate models for ASDAS, BASFI and BASDAI were created in turn due to collinearity. Effect modification by SpA phenotype and country-level factors was tested using interaction terms.

Results: A total of 3835 patients (mean age 42 years, 61% males) from 23 countries worldwide were included (66% axSpA, 10% pSpA, 23% PsA). Being employed was associated with gender (male vs female OR 2.5; 95%CI 1.9-3.2), education (university vs primary OR 3.7; 2.9-4.7) and being married (vs single OR 1.3; 1.04-1.6) (Table 1). University (vs primary) education was associated with lower odds of absenteeism (OR 0.7; 0.5-0.7) and presenteeism (OR 0.5; 0.3-0.7). Associations were not statistically different across SpA phenotypes. HCE was significantly associated with all work outcomes: employment (OR 2.5; 1.5-4.1), absenteeism (OR 0.6; 0.4-0.9) and presenteeism (OR 0.6; 0.3-0.9). HDI results were similar. Gender discrepancy in odds of employment was greater in countries with lower socioeconomic development; eg, males had 3.5 higher odds of employment than females in countries with low HCE, whereas the difference was 1.8 fold in high HCE countries.

Table 1. Effect of individual socio-economic factors on work outcomes.

	Employment status	Absenteeism	Presenteeism
	OR (95% CI)	OR (95% CI)	OR (95% CI)
N	3780	2218	2127
Age	1.43 (1.36,1.51)	1.00 (0.99,1.01)	1.00 (0.99,1.01)
Age ²	0.996 (0.995, 0.996)	NS - uni	NS - uni
Male (vs female)	2.48 (1.92,3.21)	1.22 (0.96,1.56)	0.97 (0.78,1.20)
Education			
Primary	ref	ref	ref
Secondary	1.86 (1.48,2.35)	0.69 (0.49,0.99)	0.69 (0.49,0.99)
University	3.68 (2.87,4.72)	0.67 (0.47,0.96)	0.49 (0.34,0.69)
Marital status			
Single	ref	ref	ref
Married	1.27 (1.04,1.56)	0.95 (0.73,1.22)	0.98 (0.78,1.22)
Divorced or Widowed	1.39 (0.98,1.97)	1.39 (0.88,2.18)	1.16 (0.74,1.82)
ASDAS	0.78 (0.72,0.84)	1.51 (1.33,1.72)	2.31 (2.04,2.61)
Fatigue	NS - multi	1.14 (1.09,1.21)	1.30 (1.24,1.36)
Depression	0.70 (0.59,0.82)	1.45 (1.15,1.82)	1.95 (1.59,2.39)
Fibromyalgia	NS - multi	1.62 (1.11,2.35)	1.58 (1.03,2.41)
BMI	NS - multi	0.99 (0.97,1.02)	NS - multi
Dactylitis	1.41 (1.12,1.76)	NS - uni	NS - uni
Uveitis	NS - multi	0.62 (0.46,0.84)	NS - uni
NSAIDs	NS - multi	1.53 (1.18,1.99)	1.32 (1.07,1.64)
bDMARDs	NS - multi	NS - uni	1.23 (1.01,1.51)

Models used ASDAS rather than BASDAI/BASFI, which are collinear. NS, not significant in the univariable or multivariable model.

Conclusion: Individual- (lower education) and country-level socioeconomic factors (lower healthcare expenditure) were both associated with (lower) work participation, independently of SpA phenotype. The disadvantageous effect of female gender on employment is particularly strong in countries with lower socioeconomic development. This highlights the need for wider societal interventions, such as improving education and healthcare investment, to improve work outcomes.

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OP0317-PARE

THE CONTEMPORARY WORK-RELATED BURDEN OF DISEASE FOR PEOPLE WITH RHEUMATIC DISEASES IN GREECE

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Background: EULAR recommendations emphasize the importance of suitable working conditions for people with Rheumatic diseases (RD). Thus, opportunities and choices at work need to be increased for people with rheumatic diseases. Conversely, the COVID-19 pandemic has challenged the working population and particularly those with chronic conditions, such as those with RD. However, there is still a lack of reliable data.

Objectives: To depict contemporary real-life data regarding the work-related burden of disease among Greek patients with RD. To develop a White Paper with proposals to the State in order to facilitate people with rheumatic diseases to rejoin or be retained in the work force.

Methods: A 24-item quantitative questionnaire was uploaded in the website and social media of REUMAZEIN to capture patients' responses in respect to work life. The questionnaire was online accessible for a 45-day period (15/8-30/9/2020).

Results: The responses of 503 adult people with RD (M/F/NA 94/408/1), were available for analysis. Their age was stratified in decades (18-20 0.6%, 21-30 5.99%, 31-40 22.36%, 41-50 38.92%, 51-60 22.16% and over 60 9.58%); totally, 83.44% were in the "work-reproductive" period. The predominant RD types were RA 30.3%, SLE 22.8%, AS 20.2% and PsA 20.2%, respectively. Nearly 90% were on medication, namely 40% on biologics, 33% on methotrexate (as a monotherapy or combined therapy), 16.2% on steroids. A minority were either on alternative therapies (2.8%) or off medication (7.5%), respectively. Most of the people were still employed (72.9%) on a full-time schedule (57.7%) and 4.8% on a part-time one, due to their RD. The rest of them (27.1%) were out of work either due to RD (17%) or retirement (1.7%) or for unrelated to the RD reasons (8.4%). The main source of financial income was personal work (52.4%), followed by a family member support (31.1%), while 11% had either a state pension (8%) or a subsidy (3.2%). In respect to the daily house-keeping, half of them (59.3%) had a varying difficulty (mild 36.3%, severe 23%) and 0.8% considered themselves as "unable". The diagnosis was mostly established (81%) prior to the work onset. Post-diagnosis, RD had not affected their working schedule in 47.2%, 17% continued to work with respective adaptations but 30% had quitted or resigned from their work 1-7 years later. RD was notified to the work environment by 85%. As for a compassionate work management, 46% reported no change, 28% an improved policy but 28% a worse one. The development of relative adaptations in the work setting (as chairs, devices, flexible schedule) were considered as favorite factors easing the work by 85%. 17% reported an employer's knowledge on RD related working legislation, 43% the contrary and another 38.7% wished for a future employer's awareness. Most of the participants (58.9%) had no personal information on this field but were eager to get it. The uneventful impact of RD on finding or keeping a job was registered by 77.4% and 66.9%, respectively. During COVID, most of the participants (53%) have not asked for an RD-related leave and only 24.2% chose to telework, a policy that raised mutual satisfaction in 19%. Of note, the working conditions have not mainly been altered (67%) after the end of the 1st quarantine.

Conclusion: This study highlighted that although RD predominate in females, women are more willing to participate in such projects (F 90%). The financial income was mainly based on a personal or a family member work reimbursement (83%), while 11% depended on a state pension or subsidy. The majority has notified the RD to their work environment (85%) while another 85% considered as favorite factors easing the work, several adaptations in the work setting such as chairs, devices, flexible schedule etc. Interestingly, 60% of the participants were unaware of the beneficial legal work rights and nearly 70% of them believe that RD is an obstacle for employment or working maintenance. COVID has not dramatically impaired their work life although the use of teleworking should be strengthened.

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Deconditioning in rheumatic disease, time to recognise and tackle it

OP0318 TREATMENT TAPERING AND WITHDRAWAL IN RHEUMATOID ARTHRITIS WITH STABLE REMISSION - FINAL ANALYSIS OF THE RETRO STUDY

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Background: Due to better treatment strategies and higher remission rates the management of rheumatoid arthritis (RA) patients in sustained remission is of increasing interest (1). The Rheumatoid Arthritis in Ongoing Remission (RETRO) study investigated the possibility to taper and stop disease modifying anti-rheumatic drugs (DMARDs).

Objectives: To compare one-year remission and relapse rates in rheumatoid arthritis patients randomized to continued treatment, reduced treatment or gradual treatment withdrawal after stable remission under routine care.

Methods: Primary data of the phase III, randomized, controlled RETRO trial in RA patients with stable conventional synthetic and/or biologic DMARD treatment in sustained (>6 months) DAS28-ESR remission (<2.6 units). Patients were randomized 1:1:1 into three strategy arms (continuation of 100% DMARD dose, CONT; tapering to 50% DMARD dose, TAP; 50% tapering followed by withdrawal of DMARDs, STOP). The primary endpoint was the proportion of patients in sustained DAS28-ESR remission after 1 year.

Results: 316 RA patients in sustained remission were included, 303 were randomized (CONT: N=100; TAP: N=102; STOP: N=101) and 282 (93%) had complete data sets after 1 year (CONT: N=93; TAP: N=93; STOP: N=96; Table 1). After 1 year, 81.2%, 58.6%, 43.3% of patients, maintained their remission stage over 1 year in the CONT, TAP and STOP arms, respectively (p=0.0004 with log rank test for trend; Figure 1). Hazard ratios for flare were 3.02 (95%CI 1.69 to 5.40) and 4.34 (95%CI 2.48 to 7.60) for the TAP and STOP arms. RA patients who flared were more likely to be female, have longer disease duration, RF/ACPA positivity and higher baseline DAS-28 scores with standardized mean differences >0.2. Serious adverse events were reported in 10.8%, 7.5%, and 13.5% in the CONT, TAP and STOP arms, respectively.

Table 1. Baseline Characteristics

	Group			
	Control	Reduce	Reduce/Stop	Overall
N	93	93	96	282
Age, mean(SD)	55.9 (12.7)	56.9 (13.0)	56.5 (13.3)	56.5 (13.0)
Female, n (%)	53 (57.0)	57 (62.0)	57 (59.4)	167 (59.4)
RF, n (%)	52 (55.9)	58 (62.4)	52 (54.2)	162 (57.4)
ACPA, n (%)	53 (57.0)	50 (54.9)	55 (57.3)	158 (56.4)
Disease duration, years, mean(SD)	7.6 (6.9)	7.8 (6.9)	6.8 (8.1)	7.4 (7.3)
Remission duration, months, mean(SD)	20.6 (18.0)	16.5 (15.9)	22.7 (30.4)	20.0 (22.6)
Biologics, n (%)	39 (41.9)	44 (47.3)	39 (40.6)	122 (43.3)
Methotrexate, n (%)	71 (76.3)	67 (72.0)	75 (78.1)	213 (75.5)
Other DMARDs, n (%)	24 (25.8)	20 (21.5)	16 (16.7)	60 (21.3)
Glucocorticoids, n (%)	27 (29.0)	23 (24.7)	17 (17.7)	67 (23.8)
CRP, mg/L, mean(SD)	0.3 (0.3)	0.5 (0.5)	0.5 (0.6)	0.4 (0.5)
ESR, mm/h, mean(SD)	11.3 (8.4)	12.2 (8.8)	13.0 (10.0)	12.2 (9.1)
Tender joint count, mean(SD)	0.2 (0.6)	0.0 (0.2)	0.1 (0.3)	0.1 (0.4)
Swollen joint count, mean(SD)	0.1 (0.3)	0.1 (0.3)	0.1 (0.4)	0.1 (0.3)
Physician VAS, mm, mean(SD)	1.8 (4.2)	2.6 (4.4)	2.0 (3.9)	2.1 (4.2)
Patient VAS, mm, mean(SD)	6.4 (9.0)	5.5 (8.3)	4.5 (8.4)	5.5 (8.6)
HAQ, standard, mean(SD)	0.2 (0.4)	0.2 (0.3)	0.2 (0.4)	0.2 (0.4)
HAQ, alternative, mean(SD)	0.2 (0.4)	0.1 (0.3)	0.2 (0.3)	0.2 (0.3)
DAS-28, mean(SD)	1.7 (0.7)	1.7 (0.6)	1.7 (0.6)	1.7 (0.6)
SDAI, mean(SD)	1.4 (1.5)	1.4 (1.5)	1.3 (1.3)	1.3 (1.4)
DAS-28 remission, n (%)	91 (97.8)	93 (100.0)	95 (99.0)	279 (98.9)
SDAI remission, n (%)	79 (87.8)	79 (84.9)	88 (92.6)	246 (88.5)
Boolean remission, n (%)	69 (75.8)	71 (76.3)	76 (79.2)	216 (77.1)

Conclusion: This randomized controlled study shows that half of RA patients in sustained remission relapse when tapering/stopping their DMARDs. Presence of autoantibodies, higher baseline DAS28-ESR and female sex are predictors for flares.