of information about hepcidin and its role in the development of anemia and the response to inflammation. However, in the context of the AS, such data are contradictory and therefore need further study.

Objectives: To determine the level of hepcidin in patients with ankylosing spondylitis and to assess its relationship with hematopoiesis and ferrokinetics.

Methods: The hepcidin levels of 76 patients with ankylosing spondylitis (13 women and 63 men with a mean age of 43.67±0.97 years). The diagnosis of AS was made according to the New York modified criteria of 1984. All patients were divided into three groups: without anemia (n=47), with anemia (n=29) and the control group, representative by age and sex (n=26). According to the percentile analysis, all patients were divided into a group with an optimal <25 ng/ml, extremely high - 25-35 ng/ml and a high level of hepcidin > 35 ng/ml. In addition to hepcidin, hematopoiesis and ferrokinetic parameters were measured in each patient: hemoglobin (Hb), erythrocyte, MCV, serum iron, total serum iron-binding capacity (TIBC), serum ferritin, transferrin saturation (TS). Statistical processing of the obtained results was performed with the use of statistical software package "Microsoft Office Excel 2007".

Results: When conducting a percentile comparison in 95 % of people in the control group, the level of hepcidin was in the range of 17.97-38.8 ng/ml ($P_{95} - P_{99}$), and in patients with AS in 95 % - 14.62-87.38 ng/ml. At P_{95} , the level of hepcidin in patients with AS was 2.3 times higher than in P_{95} control group. Comparing the mean values of hepcidin, a significant difference was found between the group of patients without anemia, where it was 36.08±2.57 ng/ml and the group of patients with anemia, where the level of hepcidin was 51.77±4.62 ng/ml. The lowest level of hepcidin was in patients with IDA (35.8 ±7.50 ng/ml), and the highest (62.78±5.94 ng/ml) - among patients with ACD. The group of patients with ACD and iron deficiency, according to the levels of hepcidin (48.53±9.50 ng/ml) took an intermediate place.

In terms of hematopoiesis and ferrokinetics, the level of hemoglobin and erythrocytes did not differ significantly between the groups of optimal, extremely high and high levels of hepcidin. According to the levels of serum iron, TS and ferritin in the group of patients with anemia, a significant association with hepcidin was established (with increasing levels of hepcidin, the values of serum iron, TS and ferritin also increased). In contrast, sTfR levels were the highest in the group with optimal hepcidin levels (6.02±0.71 mg/l) and decreased to 4.88±0.64 mg/l in the group with high hepcidin levels. Such changes in hematopoiesis and ferrokinetics were explained by the accumulation of mostly people with symptoms of ACD in the group with high levels of hepcidin, and the group with optimal levels of hepcidin consisted mainly of patients with IDA.

Conclusion: Patients with AS have elevated serum hepcidin levels, it is higher in individuals with anemic syndrome than in patients without anemia and is associated with serum iron, TS and ferritin levels.

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AB0488

SPONDYLOARTHRITIS DISEASE BURDEN AS PERCEIVED BY PATIENTS: BASELINE PATIENT-REPORTED OUTCOME DATA FROM THE ITALIAN PROSPECTIVE SIRENA STUDY

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Background: Previous studies have compared Patient-Reported Outcomes (PROs) in Spondyloarthritis (SpA); a recent one has found similarity in Psoriatic Arthritis (PsA) and axial patients¹.

Objectives: To describe PROs at SpA diagnosis (new or confirmed), by type of SpA and by gender.

Methods: SIRENA is an Italian, prospective Registry of SpA patients diagnosed according to ASAS criteria and naïve to any DMARDs. At inclusion, patients were classified as predominant axial (AxSpA) or mainly peripheral (pSpA). PROs showed in the Table 1 were collected and analysed descriptively.

Table 1. PhGA and PROs at diagnosis*

	AxSpA*			pSpA		
	All (n=123)	Women (n=64)	Men (n=58)	All (n=227)	Women (n=109)	Men (n=118)
PhGA, n	115	60	54	222	105	117
mean (SD)	50.2 (28.6)	54.8 (26.7)	45.0 (30.1)	45.4 (25.9)	49.9 (25.6)	41.3 (25.6)
median (min, max)	52.0 (0-100)	62.0 (0-100)	43.5 (0-100)	48.5 (0-100)	50.0 (1.0-100)	40.0 (0-95.0)
PtGA, n	112	59	52	209	102	107
mean (SD)	56.4 (27.8)	61.5 (25.8)	50.3 (29.2)	50.3 (26.2)	56.4 (23.1)	44.5 (27.7)
median (min, max)	63.0 (0-100)	70.0 (2.0-100)	50.0 (0-100)	50.0 (0-100)	58.5 (7.0-100)	47.0 (0-100)
Pain VAS score, n	113	60	52	207	101	106
mean (SD)	56.7 (28.3)	61.1 (26.6)	50.6 (29.1)	51.9 (26.8)	57.4 (25.3)	46.8 (27.3)
median (min, max)	60.0 (0-100)	69.5 (2.0-100)	50.0 (0-100)	53.0 (0-100)	61.0 (0-100)	48.5 (0-100)
Sleep VAS score, n	113	60	52	211	103	108
mean (SD)	55.3 (29.3)	57.4 (29.5)	52.3 (29.2)	44.0 (30.1)	50.4 (29.8)	37.9 (29.2)
median (min, max)	59.0 (0-100)	61.5 (0-100)	53.0 (0-100)	44.0 (0-100)	53.0 (0-100)	34.0 (0-100)
BASFI, n	110	58	51	133	65	68
mean (SD)	4.6 (2.8)	5.2 (2.6)	3.9 (2.8)	3.5 (2.6)	4.0 (2.6)	3.1 (2.4)
median (min, max)	5.1 (0-9.7)	5.8 (0-9.4)	3.6 (0-9.6)	2.9 (0-10.0)	3.9 (0-10.0)	2.45 (0-8.9)
BASDAI, n	112	59	52	139	70	69
mean (SD)	5.2 (2.4)	5.8 (2.3)	4.5 (2.3)	5.2 (2.3)	5.8 (2.1)	4.6 (2.3)
median (min, max)	5.5 (0-9.3)	6.2 (0-9.3)	4.5 (0-9.2)	5.5 (0.2-10.0)	6.1 (1.0-10.0)	4.8 (0.2-9.2)
HAQ-DI score, n	109	58	50	203	99	104
mean (SD)	0.9 (0.7)	1.1 (0.7)	0.6 (0.6)	0.7 (0.7)	0.9 (0.7)	0.6 (0.6)
median (min, max)	0.8 (0.0-2.5)	1.1 (0-2.5)	0.5 (0-2.3)	0.6 (0.0-2.8)	0.8 (0-2.8)	0.4 (0-2.6)
WPAI						
% work time missed, n	49	19	30	107	45	62
mean (SD)	7.3 (21.4)	4.2 (9.5)	9.2 (26.3)	8.8 (24.7)	8.6 (25.6)	8.9 (24.3)
median (min, max)	0 (0-100)	0 (0-35.1)	0 (0-100)	0 (0-100)	0 (0-100)	0 (0-100)
% impairment at work, n	67	33	34	134	61	73
mean (SD)	48.2 (31.9)	58.5 (26.6)	38.2 (33.7)	39.7 (31.4)	45.4 (30.9)	34.9 (31.2)
median (min, max)	50.0 (0-100)	60.0 (0-100)	25.0 (0-100)	40.0 (0-100)	50.0 (0-100)	30.0 (0-100)
% overall work impairment, n	48	19	29	106	45	61
mean (SD)	44.1 (33.0)	52.4 (27.9)	38.7 (35.3)	40.1 (33.0)	45.1 (33.1)	36.4 (32.7)
median (min, max)	45.0 (0-100)	60.0 (0-100)	20.0 (0-100)	40.0 (0-100)	50.0 (0-100)	30.0 (0-100)
% activity impairment, n	100	53	46	183	93	90
mean (SD)	56.7 (28.6)	63.4 (23.9)	48.0 (31.0)	48.5 (30.3)	55.3 (28.7)	41.4 (30.4)
median (min, max)	60.0 (0-100)	70.0 (0-100)	50.0 (0-100)	50.0 (0-100)	60.0 (0-100)	40.0 (0-100)

* The sum does not add up to the total because of some missing values.

Results: From 23 sites, 123 AxSpA and 227 pSpA patients were analysed. Diagnosis was new in 58% of AxSpA and 77% of pSpA. 85.5% of the pSpA had PsA, while in AxSpA the most frequent type was Ankylosing Spondylitis (48.8%). Time from symptom onset to diagnosis was higher in AxSpA than in pSpA (median 36 vs 24 months, respectively). At inclusion, composite disease activity measures showed high disease activity for AxSpA (mean ASDAS-CRP 3.1) and moderate disease activity for pSpA (mean DAS28 3.6; mean DAPSA 22.5). AxSpA patients had numerically worse values than pSpA in all the PROs collected, except for BASDAI score that was similar (mean 5.2). For both AxSpA and pSpA, all PROs were worse in women than men, except

for the % of work time missed. PtGA scores were higher than PhGA, in each group and gender.

Conclusion: At diagnosis, SpA patients perceive a slightly higher disease burden than assessed by Physicians. For PROs other than BASDAI, AxSpA reported a worse impact than pSpA. Overall, women showed a higher disease impact than men.

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AB0489 CORRELATION BETWEEN DISEASE ACTIVITY AND SERUM TNF-ALPHA LEVELS IN PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: Ankylosing spondylitis (AS) is an immune-mediated rheumatic disease, it belongs to the spectrum of the axial spondyloarthritis. Several elements are important for the pathogenesis of AS - they include interactions in the context of a specific genetic origin between the intestinal microbiome, innate immunity, lymphoid cells and anatomical structures, which are the entheses of the axial skeleton and peripheral joints. The main mediators of the inflammatory process are TNF- α , IL-17 and IL-17A.

Objectives: To study the level of TNF-alpha in the serum of patients with ankylosing spondylitis and to assess its relationship with the indices of disease activity before starting therapy with TNF-alpha blockers and in the dynamics after initiation of treatment.

Methods: The present study included 50 patients with ankylosing spondylitis and 31 healthy controls similar in age, sex, and BMI. Clinical and non-clinical methods of examination and evaluation were used for proper assessment and follow-up of patients. The disease activity indices that were used were BASDAI and ASDAS. Statistical analysis was performed with the IBM SPSS program, v.24.. To prove the relationship between the level of TNF-alpha in the serum of patients and disease activity, a correlation analysis of Spearman Rho was used.

Results: The level of TNF- α in patients with AS was highest before treatment initiation with biologics, 89.77 ± 36.89 pg / ml, and was significantly higher than that of healthy controls. At the next visit, the TNF- α level decreased to 27.59 ± 23.88 pg / ml, the difference being significant from baseline. 24 months after initiation of treatment with biological therapy average level of TNF- α in patients with AS did not differ reliably from its levels in 6 and 12 month after initiation of treatment, respectively, 22.36 ± 22.38 pg/ml, 19.29 ± 21.07 pg/ml. The level of this cytokine significantly correlates with the activity of the disease, measured by the activity indices BASDAI, ASDAS.

Conclusion: The level of the pro-inflammatory cytokine TNF-alpha is significantly higher in patients with ankylosing spondylitis and significantly correlates with the disease activity in them, measured by the respective indices (BASDAI, ASDAS).

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AB0490 IMPACT OF SPONDYLOARTHRITIS ON WORK PRODUCTIVITY: A REAL LIFE STUDY

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Background: Work productivity of patients with spondyloarthritis is frequently affected by their disease.

Objectives: We aim to identify disease-related factors associated with poor work productivity in patients with spondyloarthritis.

Methods: A cross-sectional study was performed in patients with spondyloarthritis. Data on disease characteristics were collected as well as specific indices: Visual analogue scale (VAS) for fatigue and pain, Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Ankylosing Spondylitis Disease Activity Score with CRP (ASDAS-CRP), Bath Ankylosing Spondylitis Functionnel Index (BASFI) and Bath Ankylosing Spondylitis Metrology Index (BASMI). EuroQol-5D (EQ5D) was used to assess health-related quality of life. Work productivity was assessed by the Work Productivity and Activity Impairment scale (WPAI:SpA). Factors associated with presenteeism, absenteeism and work productivity loss were evaluated.

Results: One hundred patients were enrolled (73 men and 27 women); mean age was 43.68 ± 10.3 years. Fifty nine percent of patients were employed, 26% were off work and 15% were retired of which 8% were in early retirement. Sixty seven percent of patients had ankylosing spondylitis, 17% had rheumatism associated with inflammatory bowel disease and 16% had psoriatic rheumatism. The average disease duration was 12.24 ± 8.73 years. Mean age at onset was 33.2 ± 10 years [18-59]. The average diagnostic delay was 2.41 ± 3 years; it was more than five years in 17% of cases. Sacroiliac pain has been noted in 69 patients, lumbar or cervical stiffness in 78 patients and peripheral joint involvement in 18 cases. Thirty one percent of patients had hip joint involvement and 49% had extra-articular manifestation. Fifty percent had inflammatory biological syndrome, 63% were treated with anti-TNF α and 58% needed symptomatic treatment regularly. The mean fatigue and pain VAS was respectively 5.58 ± 2.5 and 5.56 ± 2.9 . The mean BASDAI was 4.4 ± 2.4 , the average BASFI was 4.6 ± 2.7 and the average ASDAS-CRP was 2.77 ± 1.18 . The mean BASMI was 4.4 ± 2.8 . The mean EQ5D score was 0.485 ± 0.378 . Among employed patients, mean absenteeism, presenteeism and work productivity loss was $21.8 \pm 33.13\%$, $42 \pm 32\%$ and $46.5 \pm 35.31\%$, respectively. These work outcomes were correlated to diagnostic delay ≥ 2 years ($p < 0.03$), peripheral joint involvement ($p = 0.006$), psoriasis ($p = 0.02$), inflammatory biological syndrome ($p < 0.001$), need of symptomatic treatment ($p = 0.001$), fatigue and pain VAS ≥ 4 ($p < 0.001$), BASDAI ≥ 4 ($p < 0.001$), ASDAS-CRP ≥ 2.1 ($p < 0.001$), BASFI ≥ 4 ($p < 0.001$), BASMI ≥ 4 ($p = 0.002$) and low EQ5D score ($p < 0.001$). Work productivity loss was in addition correlated to age at onset < 25 years ($p = 0.03$).

Conclusion: Active disease, reduced physical function and poorer quality of life are associated with reduced work productivity. Early diagnosis and good disease management especially fatigue and pain can potentially improve work outcomes in patients with spondyloarthritis.

Disclosure of Interests: None declared.

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AB0491 THE IMPORTANCE OF MUSCULOSKELETAL SYMPTOM QUESTIONING IN INFLAMMATORY BOWEL DISEASES

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Background: Spondyloarthritis (SpA) occurs in up to 13% of patients with inflammatory bowel disease (IBD) (1). Early diagnosis and treatment of SpA in IBD patients prevents irreversible musculoskeletal diseases.

Objectives: The aim of this study is to emphasize the importance of questioning musculoskeletal symptoms in patients with IBD.

Methods: In the Hacettepe University Gastroenterology Clinic, patients with IBD were questioned for musculoskeletal symptoms between March 2019 and September 2020. For this purpose, a validated DETAIL questionnaire (2) consisting of six questions was asked (1. Have you ever had a finger or a toe and/or another joint swollen and painful for no apparent reason? 2. Occasionally, has an entire finger or toe becomes swollen, making it look like a 'sausage'? 3. Have you had pain in your heels? 4. Have you ever had back pain lasting at least 3 months that was not injury related? 5. Do you have low back pain in the morning and/or after resting that improves with exercise? 6. Do you wake up at night because of low back pain?). Patients with at least 1 positive out of 6 questions were consulted in the rheumatology clinic, and patients were evaluated for SpA by physical examination, laboratory, and imaging. Demographic and clinical characteristics of IBD patients with and without SpA were compared.