Table 1. Baseline parameters and adverse events

	GOL n=81	alt. TNFi n=162	MTX n=81	p-value ∞ GOL vs alt. TNFi	p-value ∞ GOL vs MTX
Gender female °	67 (83)	127 (78)	64 (79)	0.5	0.7
Disease duration (yrs)	7.1±4.3	4.3±3.7	1.2±2.1	<0.0001	<0.0001
RF neg. Polyarthriti ^s °	40 (49)	79 (49)	50 (62)	1.0	0.15
RF pos. Polyarthriti ^s °	8 (10)	22 (14)	16 (20)	0.5	0.1
Extended Oligoarthritis °	30 (37)	54 (33)	13 (16)	0.6	0.004
Psoriatic arthriti ^s °	3 (4)	7 (4)	2 (3)	1.0/1.0	1.0
Pretreatment bDMARD °	68 (84.0)	35 (21.6)	0	<0.0001	<0.0001
Concomitant systemic steroids, n (%)	13 (16)	38 (24)	39 (48)	0.2	<0.0001
Active joint count #	4.6±4.8	4.9±5.7	9.6±6.5	0.4	<0.0001
CHAQ DI #	0.4±0.5	0.5±0.5	0.6±0.6	0.1	0.02
JADAS10 #	11.6±6.2	12.1±6.1	16.8±5.3	0.6	<0.0001
AE *	91 (107.4; 88-132)	213 (88.7; 78-101)	113 (119.8; 100-144)	0.1	0.4
SAE *	4 (4.7; 2-13)	7 (2.9; 1-6)	1 (1.1; 0.1-8)	0.4	0.2
Serious infections *	1 (1.2; 0.2-8.4)	2 (0.8; 0.2-3.3)	0	0.7	n.a.
Autoimmune process (%)	2 (2.4)	3 (1.9)	1 (1.2)	1.0	1.0
Patients with uveitis new manifestation after study entry *	1 (1.2; 0.2-8)	2 (0.8; 0.5-3)	0	0.7	n.a.
Patients with uveitis flare events with preexisting uveitis at baseline *	6 (7.1; 3-16)	0	0	n.a.	n.a.

Rheumatoid factor (RF), biologic disease modifying antirheumatic drug (bDMARD), childhood health assessment questionnaire disability index (CHAQ DI), juvenile arthritis disease activity index (JADAS), adverse event (AE), patient year (PY), ° n (%), # mean (SD), * n (rate/100PY; 95%CI), Golimumab (GOL), alternative tumor necrosis factor inhibitor (alt. TNFi), methotrexate (MTX), ∞ by t-test or χ^2 -test as appropriate.

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POS0076

S100A8/A9 AND S100A12 AS POTENTIAL PREDICTIVE BIOMARKERS OF ABATACEPT RESPONSE IN POLYARTICULAR JUVENILE IDIOPATHIC ARTHRITIS

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Background: The calcium-binding proteins S100A8/A9 (calprotectin) and S100A12 (extracellular newly identified receptor for advanced glycation end-products binding protein [EN-RAGE]) are involved in multiple signalling pathways to mediate inflammation, can be secreted by activated monocytes/macrophages and exhibit cytokine-like extracellular functions. Circulating levels of these proteins have been associated with disease and clinical responses in systemic juvenile idiopathic arthritis (sJIA), including treatment response.¹ Studies suggest that serum S100A8/A9 and S100A12, which are released at inflammation sites, are more specific biomarkers of local inflammation (e.g. in the synovium) than systemic biomarkers such as CRP and ESR.^{2,3}

Objectives: To investigate if baseline S100A8/A9 and S100A12 predict clinical response to abatacept treatment in polyarticular JIA (pJIA), and to assess

whether changes from baseline in S100A8/A9 or S100A12 can be better prognostic markers for response to abatacept treatment than CRP in pJIA.

Methods: Data are from a phase III trial of SC abatacept for the treatment of pJIA (NCT01844518).⁴ This 24-month, single-arm, open-label, international, multi-centre, two-part study included male and female patients with pJIA aged 2–17 years. This analysis examined the correlation between biomarkers (S100A8/A9, S100A12 and high-sensitivity CRP [hsCRP]) and disease activity (measured using Juvenile Arthritis Disease Activity Score [JADAS]) at baseline, baseline biomarker values as predictors of future treatment response (ACR and JADAS endpoints), and the correlation between change from baseline in biomarker values and treatment response at Day 113.

Results: Of 219 total patients, 158 (72%) had S100A8/A9 values and 155 (71%) had S100A12 values at baseline. Median S100A8/A9 and S100A12 values were 3295 ng/mL (normal range, 716–3004 ng/mL) and 176 ng/mL (normal range, 32–385 ng/mL), respectively. S100A8/A9, S100A12 and hsCRP (median 0.20 mg/dL; normal ≤0.6 mg/dL) had a low-to-moderate but significant association with disease activity at baseline; coefficients for associations between JADAS71-CRP low disease activity (LDA) and the biomarkers S100A8/A9, S100A12 and hsCRP were 0.23 (p=0.0038), 0.16 (p=0.0448) and 0.26 (p=0.0001), respectively. Baseline S100A8/A9 level above the median was associated with lower odds of ACR100 at Day 113 (p=0.0052). Figure 1 shows the associations of baseline biomarker values with Day 113 ACR and JADAS scores in the overall population. Baseline S100A8/A9 or S100A12 did not significantly influence ACR50 or ACR70 responses at Day 113, but high baseline values were associated with reduced odds of ACR90 (p=0.01), ACR100 (p=0.005), ACR-inactive disease (ID) (p=0.0001), and JADAS71-CRP (LDA) (p=0.02). By Day 477, elevated baseline S100A12 was still significantly associated with lower odds of ACR100 overall (0.467; p=0.0248) but baseline S100A8/A9 was not; at Day 645, neither was significantly associated with ACR100 response. At Day 113, changes from baseline in S100A8/A9 and S100A12 were correlated with ACR100 (coefficients of 0.22 [p=0.0082] and 0.26 [p=0.0015], respectively) and with ACR-ID (0.22 [p=0.0067] and 0.26 [p=0.0014], respectively); change in hsCRP was not significantly correlated with disease response.

Conclusion: S100A8/A9 and S100A12 may serve as prognostic biomarkers to predict response to abatacept treatment at Day 113. Changes from baseline S100A8/A9 and S100A12 levels were more highly correlated with efficacy outcomes including ACR100 and ACR-ID at Day 113 compared with hsCRP.

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Figure 1. Effect of baseline S100A8/A9 or S100A12 level on efficacy response at Day 113 in the overall population

ACR50/70/90/100=50/70/90/100% improvement in ACR criteria; ID=inactive disease; JADAS71-CRP=Juvenile Arthritis Disease Activity Score in 71 joints using CRP; LDA=low disease activity; OR=odds ratio.

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POS0077

PHYSICAL ACTIVITY AND SPORT PARTICIPATION: A COMPARISON BETWEEN CHILDREN AND ADOLESCENTS WITH JUVENILE IDIOPATHIC ARTHRITIS (JIA) AND THE GERMAN GENERAL POPULATION

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Background: Physical activity (PA), including sport participation is essential for children throughout their growth and maturation. It improves physiological and psychosocial health and limits the risk of developing metabolic disorders. The beneficial effect of PA specifically in patients with JIA has also been linked to its potential regulatory effect on the balance between pro- and anti-inflammatory responses [1].

Objectives: The study aimed i) to quantify the frequency of PA and participation in (organised) sports compared to the general population, ii) to determine self-reported reasons for not practicing sports, and iii) to identify clinical parameters associated with non-participation in sports.

Methods: Data from children and adolescents with JIA recorded in the National Paediatric Rheumatological Database (NPRD) in the year 2019 were considered for the analyses. In accordance with the methodology used in the general population survey (KIGGS) [2], achievement of the WHO recommendations on PA for at least 60 minutes per day as well as sport-related data were determined on the basis of self-reported outcomes in individuals aged 3 to 17 years. In order to compare PA-related data with the general population, a sex- and age-matched

sample was drawn. A logistic regression model was used to explore the association between non-participation in sports and patients' clinical outcomes.

Results: Data of 5.333 matched-pairs (mean age 11.0 ± 4.3 years, female 67%, patients' disease duration 4.8 ± 3.8 years, persistent oligoarthritis 43%) were available for evaluation. Almost 38% of patients aged 3 to 17 years met the recommended PA amount (76% aged 3 to 6; 48% aged 7 to 10; 30% aged 11 to 13; 15% aged 14 to 17). In matched controls, 21% fulfilled the WHO recommendations on PA (41% aged 3 to 6; 23% aged 7 to 10; 17% aged 11 to 13; 10% aged 14 to 17). Largest differences across JIA categories were found in persistent oligoarthritis (43%) and enthesitis-related arthritis (22%). 64% of patients and 74% of controls reported participating in sports, of which 72% of patients and 58% of controls stating to participate in a formally organised way. In both groups, boys indicated organised sports participation more often than girls. Among those who declared not participating in sports, "no interest" (patients 27% vs. controls 29%), "no suitable offer nearby" (patients 25% vs. controls 31%), "health restrictions" (patients 22% vs. controls 4%) and "no time" (patients 15% vs. controls 23%) were the most frequently mentioned reasons (multiple responses possible). CJADAS-10 (OR = 1.02, 95% CI = 1.00-1.04), CHAQ (OR = 1.79, 95% CI = 1.50-2.14), DMARD use (OR = 1.32, 95% CI = 1.15-1.53) and disease duration (OR = 0.97, 95% CI = 0.95-0.99) were significantly associated with non-participation in sports.

Conclusion: Based on self-reported data, children and adolescents with JIA meet the WHO recommendation on PA more often than general population controls. Patients are less frequently engaged in sports, but more often involved in formally organised forms. In order to bring joyful, interesting PA opportunities in line with WHO recommendations, further components (e.g. intensity), facilitators and barriers to PA and sports need to be addressed in the future while controlling for JADAS and CHAQ.

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POS0078

CROSS-SECTIONAL ANALYSIS OF INTERFERON SIGNATURE IN PEDIATRIC SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: the role of interferon pathways in the pathogenesis of systemic lupus erythematosus (SLE) has been proven over the past years. Existing data suggest that interferon score (IFN I score) may serve as a useful marker of disease activity and patient clinical characteristics.

Objectives: to compare characteristics of pediatric SLE patients with high and normal IFN I score.

Methods: 40 SLE patients (33 girls, 7 boys) under 18 years old were included in the cross-sectional study. In all cases the diagnosis was made using Systemic Lupus International Collaborating Clinics (SLICC) classification criteria. The data on clinical manifestations, disease activity by SLEDAI and ECLAM, laboratory findings in the onset of the disease and at the moment of interferon signature assessment were evaluated. Interferon signature was assessed by real-time PCR quantitation of 5 IFN I-regulated transcripts; median expression of ≥ 2 was considered as a threshold. The patients were divided into 2 groups depending on the level of interferon score: high (group1, n=31) and normal (group2, n=9).

Results: The mean age of the disease onset was 12 (9.5; 14.0) years. The most common symptoms were skin lesions (85%), arthritis (67.5%), fever (55%), mucosa (45%), CNS (37.5%) and kidney (30%) involvement. Anemia, leukopenia and thrombocytopenia were observed in 62.5%, 27.5% and 50% of cases,