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DO JIA PATIENTS RESPONSE TO RE-TREATMENT AFTER A FLARE DURING TAPERING OF bDMARDs? A DESCRIPTIVE STUDY

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Background: Tapering and withdrawal of biological DMARDs (bDMARDs) is often attempted in Juvenile Idiopathic Arthritis (JIA) patients but data about response to re-treatment after an unsuccessful tapering are scarce.

Objectives: Our aim is to assess response to re-treatment after a disease flare during tapering or withdrawal of bDMARDs and to describe re-treatment strategies.

Methods: A retrospective, descriptive study was conducted in a cohort of JIA patients followed up in a referral hospital and who had received bDMARDs between 2000 and 2019. All JIA patients with at least one flare during tapering or withdrawal were included. Response to re-treatment was defined as achieving Wallace criteria for remission for 6 months.

Results: A total of 142 flares during tapering or withdrawal were identified and included. In 3/142 (2.1%) patients bDMARDs were not re-started after a flare, 1 due to patient refusal, 2 due to unplanned pregnancy. Main characteristics according to tapering strategies are reported in Table 1.

Table 1. Main characteristics according to tapering strategies. Apso, Psoriatic Arthritis; ERA, Enthesitis related Arthritis; OligE, Oligoarticular Extended; OligP, oligoarticular persistent; Poly RF+, polyarticular rheumatoid factor positive; PolyRF-, polyarticular rheumatoid factor negative; sJIA, Systemic JIA; Und, Undifferentiated.

	Tapering	Withdrawal
Cases, n (%)	80 (57.5)	59 (42.4)
Female, n (%)	57 (71.3)	36 (61)
Age at diagnosis, years, median (IQR)	5 (2-11)	4 (2-11)
Age at start of tapering or withdrawal, years, median (IQR)	17 (11-25)	16 (8-29)
Categories, n (%)		
OligP	19 (23.8)	12 (20.3)
OligE	15 (18.8)	13 (22)
sJIA	10 (12.5)	11 (18.6)
ERA	12 (15)	8 (13.6)
Apso	7 (8.8)	6 (10.2)
Poly RF+	9 (11.3)	4 (6.8)
Poly RF-	7 (8.8)	3 (5.1)
Und	1 (1.3)	2 (3.4)
Uveitis, n (%)	24 (30)	16 (27.1)
Laboratory values, n (%)		
- RF	15 (18.8)	5 (8.5)
- ANA	45 (56.3)	33 (55.9)
cDMARDs at start of tapering, n (%)	40 (50)	20 (33.9)
bDMARD target, n (%)		
- TNF inhibitors	63 (78.8)	45 (76.3)
- IL6-blockers	14 (17.5)	5 (8.5)
- IL1-blockers	2 (2.5)	7 (11.9)
- Rituximab	1 (1.3)	2 (3.4)
Line of bDMARD, n (%)		
- First	50 (62.5)	45 (76.3)
- Second	18 (22.5)	10 (16.9)
- Third	5 (6.3)	2 (3.4)
- Fourth	6 (7.5)	2 (3.4)
- Fifth	1 (1.3)	0 (0)
Time in bDMARD treatment, months median (IQR)	28.4 (13.3-52.5)	28.2 (13.9-44.6)
Remission prior tapering or withdrawal, months median (IQR)	8 (6-12)	8 (6-12)

Fifty-nine out of 80 (73.8%) tapering cases were on remission at 6 months (6m) and 42/80 (52.5%) at 12 months (12m). Regarding dosage schedule adjustments, interval widening was the most frequent in 70/80 (87.5%) followed by combined strategy in 7/80 (8.8%) and lower dosage in 3/80 (3.8%). Median remaining dosage administrated was 54.9% IQR(50-75). Median time to flare was 14.9 months IQR (5.6-24.7). Median time to re-start of bDMARDs was 0 months min-max(0-13).

After withdrawal of bDMARDs 23/59 (39%) cases at 6m and 14/59 (23.7%) cases at 12m were on remission. Median time to flare was 4.7 months IQR (2.8-11.4). Median time to re-start of bDMARDs was 1 month min-max (1-6).

Most frequent re-treatment strategies were re-start of standard dosage [tapering 42/80 (52.5%), withdrawal 34/59 (57.6%)], re-start of previous effective dosage [tapering 28/80 (35%), withdrawal 11/59 (18.6%)], change of bDMARD [tapering 6/80 (7.5%), withdrawal 6/59 (10.2)], re-start of bDMARD and cDMARD [tapering 4/80 (5%), withdrawal 6/59 (10.2)] and re-start of cDMARD [tapering 0/80 (0), withdrawal 1/59 (1.7%)].

Overall response to re-treatment was 75/80 (93.8%) and 53/58 (91.4%) among tapering and withdrawal, respectively. In 12/139 (8.6%) patients bDMARD was

changed, achieving remission in 11/12 (91.7%) cases. No factors were associated with response to re-treatment and there were no differences between re-treatment strategies and re-achieving remission ($p=0.596$).

Conclusion: Response to re-treatment was high (92.7%), no risk factors were identified. Most frequent retreatment strategy was re-start of standard bDMARD dosage in 76/139 (54.7%) followed up by restart of previous effective bDMARD dosage in 39/139 (28.1%).

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3525

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HAVE THE CHILDREN WITH JUVENILE IDIOPATHIC ARTHRITIS AN EXCESS OF ADIPOSITY?

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Background: In recent years, several studies show contradictory results regarding body composition in juvenile idiopathic arthritis. Adiposity in Rheumatoid Arthritis and Psoriatic Arthritis has been associated to inflammatory activity, but it is not clear what happens in JIA.

Objectives: To describe the body composition and anthropometric parameters of patients with JIA compared with healthy controls and analyze associated risk factors in JIA patients.

Methods: Observational cross-sectional study in spanish children aged 4-15 years with JIA compared with healthy controls matched for age and sex. We recorded epidemiological variables anthropometric parameters, clinical data and validated physical activity questionnaires. Body composition was measured using dual-energy x-ray absorptiometry (DXA), and included total mass (kg), fat mass (g), lean mass (g), and lean mass of legs, arms and trunk, or in physical activity questionnaire (p = 0.582). The factors associated with obesity in patients with JIA were: time with biological drug (OR [95% CI] = 1.12 [1.01-1.04]; $p = 0.042$) and sedentary lifestyle (OR [95% CI] = 3.50 [1.18-7.35]; $p = 0.023$); while the factors associated with the fat mass index were: age (β [95% CI] = 0.30 [0.16-1.41]; $p = 0.014$), inflammatory activity (JDAS) (β [95% CI] = 0.44 [0.16-1.08]; $p = 0.009$) and physical activity (β [95% CI] = -0.22 [-0.10, -0.28]; $p = 0.031$).

Results: We analyze 160 subjects: 80 patients with JIA and 80 healthy controls. The baseline characteristics of both groups are shown in Table 1. No differences were found between both groups in BMI ($p=0.936$), fat mass ($p = 0.449$), lean mass ($p = 0.793$) and in fat and lean mass of legs, arms and trunk, or in physical activity questionnaire ($p = 0.582$). The factors associated with obesity in patients with JIA were: time with biological drug (OR [95% CI] = 1.12 [1.01-1.04]; $p = 0.042$) and sedentary lifestyle (OR [95% CI] = 3.50 [1.18-7.35]; $p = 0.023$); while the factors associated with the fat mass index were: age (β [95% CI] = 0.30 [0.16-1.41]; $p = 0.014$), inflammatory activity (JDAS) (β [95% CI] = 0.44 [0.16-1.08]; $p = 0.009$) and physical activity (β [95% CI] = -0.22 [-0.10, -0.28]; $p = 0.031$).

Table 1. Baseline characteristics of patients with JIA and controls

Variable	JIA (n=80)	Controls (n=80)	P-value
Sex, girls n (%)	56 (70.0)	57 (71.3)	0.862
Age, mean (SD)	10.7 (3.2)	10.2 (3.2)	0.893
Disease duration (years) JIA, mean (SD)	6.5 (3.7)		
JIA subtype			
Systemic, n (%)	9 (11.3)		
Oligoarticular persistent, n (%)	38 (47.5)		
Oligoarticular extended, n (%)	13 (16.3)		
Rheumatoid Factor-positive polyarticular, n (%)	1 (1.3)		
Rheumatoid Factor-negative polyarticular, n (%)	19 (23.8)		
CRP (mg/l), mean (SD)	4.8 (9.5)		
ESR (mm/h), mean (SD)	8.8 (7.3)		
JADAS27, mean (SD)	2 (4.0)		
CHAQ, mean (SD)	0.17 (0.4)		
Treatment			
DMARDs (synthetic), n (%)	42 (52.5)		
DMARDs (biological), n (%)	24 (30.0)		
Anti IL-1, n (%)	4 (16.7)		
Anti IL-6, n (%)	2 (8.3)		
Anti TNF- α , n (%)	18 (75.0)		
Treatment duration			
DMARDs synthetic, (months), mean ($\pm$ SD)	51 (37.5)		
DMARDs biological, (months), mean ($\pm$ SD)	19.7 (28.4)		
DMARDs total (months), mean ($\pm$ SD)	55.8 (38.0)		
Cumulative corticosteroids dose, median (range)	11.3 (0.12-870)		

Abreviaturas; JIA: juvenile idiopathic arthritis; SD: standart deviation; CRP: C-reactive protein; VSG: erythrocyte sedimentation rate; JADAS27: Juvenile Arthritis Disease Activity Score; CHAQ: Childhood Health Assessment; DMARD: disease-modifying anti-rheumatic drug.