SAT0509

BODY MASS INDEX AND DISEASE ACTIVITY IN PORTUGUESE AND BRAZILIAN JUVENILE IDIOPATHIC ARTHRITIS PATIENTS: RESULTS FROM RHEUMATIC DISEASES PORTUGUESE REGISTER – REUMA.PT

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Background: The influence of body mass index (BMI) on Juvenile Idiopathic Arthritis (JIA) disease activity is poorly understood. In adults with Rheumatoid Arthritis, obesity has been associated with higher disease activity, while in JIA patients, a previous study has failed to find any association.

Objectives: To investigate the relationship between BMI and JIA disease activity.

Methods: This is an international, multicenter, observational, cross-sectional study. JIA patients (according to ILAR criteria) aged ≤ 18 years, registered at Reuma.pt in Portugal and Brazil were included. Data was analysed upon records from the first registered visit. Age- and sex-specific BMI percentiles (P) were calculated based on WHO growth standard charts and categorized into underweight (P<3), normal weight (3≤P≤85), overweight (85<P≤97) and obesity (P>97). Disease activity was assessed by Juvenile Arthritis Disease Activity Score (JADAS-27). Univariate linear regression was used to examine the association of JADAS-27 with BMI categories. Two multivariate regression models were performed a) adjusting for age, gender, race, country, disease duration and JIA category (model 1); b) adjusting for those covariates plus use of DMARDs (model 2).

Results: 255 patients included, mean age 10.1±4.7 years, mean disease duration 6.3±4.9 years; 62% female; 85% Caucasian. Thirty-two percent were persistent oligoarticular, 9% extended oligoarticular, 34% polyarticular RF+, 6% systemic, 13% enthesitis-related arthritis, 5% psoriatic arthritis and 1% undifferentiated arthritis. The prevalence of underweight, normal weight, overweight and obesity was 7.5%, 65.9%, 15.7% and 11%, respectively. In the univariate linear regression, underweight was significantly associated with higher JADAS-27, compared to normal weight (B=-9.563, *p*<0.001), overweight (B=-10.661, *p*<0.001) and obesity (B=-7.422, *p*=0.004). Lower age (B=-0.299, *p*=0.012), shorter disease duration (B=-0.396, *p*=0.001), black race (B=6.852, *p*=0.033), RF+ polyarthritis (B=7.101, *p*<0.001), living in Brazil (B=5.357, *p*=0.002) and the absence of DMARD therapy (B=4.831, *p*<0.001) were also associated with higher JADAS-27.

In the model 1 of multivariate analysis, the same variables, except the country, remained significantly associated with higher disease activity. When DMARD therapy was added to the model (model 2), RF+ polyarthritis (B=4.447, *p*=0.001) and living in Brazil (B=4.728, *p*=0.013) were associated with higher JADAS-27. Patients with normal weight (B=-9.964, *p*<0.001), overweight (B=-10.316, *p*<0.001) and obesity (B=-9.502, *p*=0.001) had significantly lower activity disease, compared to underweight patients, as well as those under DMARD therapy (B=-4.858, *p*<0.001).

Conclusion: Despite the lack of adjustment for corticosteroids use, there seems to be an independent association between underweight and higher

Table 1. Relationship between JADAS-27 (dependent variable) and demographic and clinical characteristics of JIA patients.

	Univariate analysis			Multivariate analysis					
	B	95% CI	p-value	B	95% CI	p-value	B	95% CI	p-value
Age, years	-0.299	[-0.532 - (-0.066)]	0.002	-0.378	[-0.613 - (-0.143)]	0.002			
Disease duration, years	-0.396	[-0.625 - (-0.167)]	0.001	-0.245	[-0.465 - (-0.024)]	0.039			
Gender (female)	0.104	[-0.217 - 0.382]	0.528						
Country (Portugal)	-0.357	[-0.675 - (-0.038)]	0.002				-4.728	[-8.427 - (-1.030)]	0.013
Ethnicity									
White european*									
White non-european	-0.620	[-0.849 - (-0.390)]	0.078						
Black	6.852	[0.545 - 13.159]	0.033	5.967	[0.225 - 11.708]	0.042			
Biracial	-5.985	[-14.831 - 2.860]	0.184						
Romani	8.340	[-0.340 - 16.919]	0.157						
Asiatic	-0.860	[-11.053 - 9.332]	0.868						
JIA subtype									
Persistent oligoarthritis*									
Extending oligoarthritis	-1.408	[-0.365 - (-2.540)]	0.004						
RF-positive polyarthritis	7.101	[4.557 - 9.644]	<0.001	5.471	[3.303 - 7.640]	<0.001	4.447	[1.968 - 6.925]	0.001
Systemic-onset	2.853	[-1.785 - 7.490]	0.227						
Enthesitis-related arthritis	2.226	[-1.199 - 5.651]	0.202						
Psoriatic arthritis	2.856	[-2.079 - 7.791]	0.252						
Undifferentiated arthritis	8.833	[-3.049 - 20.714]	0.144						
BMI									
Underweight*									
Normal weight	-9.563	[-13.664 - (-5.462)]	<0.001	-9.706	[-13.678 - (-5.735)]	<0.001	-9.964	[-14.364 - (-5.565)]	<0.001
Overweight	-10.661	[-15.382 - (-5.940)]	<0.001	-10.382	[-14.949 - (-5.816)]	<0.001	-10.316	[-15.540 - (-5.092)]	<0.001
Obesity	-7.422	[-12.458 - (-2.386)]	0.004	-7.819	[-12.660 - (-2.978)]	0.002	-9.502	[-14.912 - (-4.092)]	0.001
DMARD use	-4.831	[-6.055 - (-3.607)]	0.002						
DMARD use	-2.660	[-4.227 - (-1.093)]	0.143						
Any DMARD use	-4.831	[-6.055 - (-3.607)]	<0.001				-4.858	[-7.319 - (-2.396)]	<0.001

*Reference group

disease activity in JIA patients. Importantly, these results suggest that active disease can impair child's weight gain. Further studies are needed to confirm these findings and understand the underlying mechanisms of this association.

Disclosure of Interests: None declared

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SAT0510

NON-BACTERIAL OSTEITIS IN CHILDREN: PROGNOSTIC FACTORS

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Background: The incidence of non-bacterial osteitis (NBO), a rare autoimmune-inflammatory disease in childhood, has increased over the past few years. Early diagnosis and treatment, as well as an adequate follow-up, are necessary to prevent sequelae and complications. However, prognostic factors of the disease are unknown.

Objectives: To establish the prognostic factors of NBO.

Methods: A retrospective study of NBO, according to Jansson criteria, in children (<14 years) at a tertiary hospital from 2009 to 2018. Descriptive statistics were performed to examine clinical features, diagnoses, treatments and progress of the disease. Furthermore, bivariate analysis was performed in order to investigate factors involved in the remission of the disease (with/out treatment), the number of relapses and sequelae. We considered *p*<0.1 as significance level due to the small sample size.

Results: We reviewed 15 cases. Table shows the descriptive data. The likelihood of remission was found to be associated with the presence of X-ray findings apart from sclerosis/lysis, (80% vs 40%, *p* 0.07), a high white blood cell count (mm3) (11988.7 ± 3004.9 vs 8915.7 ± 3310.3, *p* 0.08) and ESR (mm) (58.3 ± 36.3 vs 26.8 ± 17.4, *p* 0.05) at diagnosis

Table. Descriptive analysis

EPIDEMIOLOGIC DATA	
Sex (female), n (%)	13 (86.7)
Age (years), mean (±SD)	9.5 (±1.7)
Delayed diagnosis (months), median (IQR)	3 (2-6)
Clinical presentation, n (%)	
Pain	15 (100)
Limited movement	13 (86.7)
Swelling	9 (60)
No. of lesions, median (IQR)	2 (1-5)
Bone lesion sites (n=43), n (%)	
Clavicles	8 (53.3)
Hip	7 (46.7)
Others	20 (26.7)
BIOLOGICAL TESTS	
Blood test	
White blood cells (mm3), mean (±SD)	10554.7 (±3424.8)
CRP (mg/L) at diagnosis, median (IQR)	9.2 (4.9-18.1)
ESR (mm) at diagnosis, mean (±SD)	43.7 (±32.5)
MRI (n=14), findings, n (%)	
Edema	12 (85.7)
Lysis and/or cortical disruption	5 (35.7)
Periosteal reaction	3 (21.4)
Bone biopsy (n=12); histopathology, n (%)	
Fibrosis	9 (75)
Inflammation	8 (66.7)
TREATMENT	
Antibiotics, n (%)	8 (53.3)
Duration (days), mean (±SD)	50.5 (±15.9)
NSAIDs, n (%)	14 (93.3)
Duration (days), median (IQR)	72 (19.5-219.5)
Corticoids, n (%)	9 (60)
Duration (days), median (IQR)	110 (60-195)
Methotrexate, n (%)	2 (13.3)
Duration (days), median (IQR)	547.5 (365-547.5)
Pamidronate, n (%)	8 (53.3)
No. of cycles, mean (±SD)	7.8 (±6.9)
Zoledronate, n (%)	4 (26.7)
No. of cycles, median (IQR)	3 (2,3-3)
TNF inhibitors, n (%)	3 (20)
Duration (days), median (IQR)	880 (300-880)
OUTCOME	
No. of relapses, median (IQR)	2 (0-6)
Follow-up time (years), mean (±SD)	4.5 (±2.8)
Current status, n (%)	
Remission without treatment	8 (53.3)
Remission with treatment	7 (46.7)
Sequelae, n (%)	
Localized deformation	2 (13.3)