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ANTHROPOMETRIC ASSESSMENT AND LIPID METABOLISM BIOMARKERS OF PARENTS OF PEDIATRIC PATIENTS WITH CHRONIC RHEUMATIC DISEASES

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BACKGROUND

Chronic rheumatic diseases in children and adolescents increase cardiovascular risk. Thus, knowing biomarkers of lipid metabolism and the lifestyle of patients and their parents will allow the development of prevention strategies. The aim of this work is to describe the body mass index, physical activity and lipid metabolism biomarkers of parents of children and adolescents with chronic rheumatic diseases and compare them with those of their children.

MATERIALS AND METHODS

Cross-sectional study with 91 parents and their respective children diagnosed with juvenile idiopathic arthritis (n = 30 / 33.0%), juvenile systemic lupus erythematosus (n = 41 / 45.0%) and juvenile dermatomyositis (n = 20 / 22.0%). Anthropometric data, physical activity, total cholesterol (TC) and fractions (LDL-C and HDL-c), non-HDL cholesterol (non-HDL-c) and triglycerides (TG) were evaluated.

RESULTS

Most parents were female, as were their children (89.8 and 83.5% respectively). The average age of parents was 40.5 ± 7.4 years. The disease length was 4.5 ± 3.4 years and active disease was observed in 56% of patients. Eighty percent of overweight children/adolescents also had parents with the same nutritional diagnosis; 87.9% of the parents had waist-to-height ratio > 0.5 . No statistically significant associations were observed when analyzing parents' physical activity compared to their children (Cramer's V test = 0.089, p = 0.694). However, 56% of less active children/adolescents also had parents with a similar classification for physical activity. The prevalence of dyslipidemia of children/adolescents and parents was 83.5 and 82.4%, respectively. Parents and children/adolescents mostly had low HDL-c (52.8 and 64.8% respectively). There was no association between the frequency of dyslipidemia in general and for TC, LDL-c, HDL-c, and non-HDL-c of parents and their children. Concerning TG, 41.5% of parents with high TG had children with the same classification, with a weak association (Cramer's V test = 0.238; p = 0.024).

Parents' demographic characteristics, lifestyle, nutritional status and biochemical data are shown in Table 1.

Table 2 shows the lifestyle, nutritional status, pubertal staging and biochemical data of children and adolescents with rheumatic diseases.

Table 1. Demographic characteristics, lifestyle, nutritional status, and biochemical data of the parents.

		Total (n = 91) n (%)	Poly JIA (n = 30) n (%)	JSLE (n = 41) n (%)	JDM (n = 20) n (%)
Gender	Female	76 (83.5)	25 (83.3)	34 (82.9)	17 (85.0)
Socioeconomic classification	C	50 (55.0)	17 (56.7)	24 (58.6)	9 (45.0)
CVD risk in the family	Yes	12 (13.2)	4 (13.3)	7 (17.1)	1 (5.0)
Physical activity classification	Irregularly active/ sedentary	52 (57.1)	18 (60.0)	23 (56.1)	11 (55.0)
BMI classification	Thinness	1 (1.1)	0 (0.0)	0 (0.0)	1 (5.0)
	Normal	29 (31.9)	10 (33.3)	14 (34.1)	5 (25.0)
	Overweight	61 (67.0)	20 (56.7)	27 (65.9)	14 (70.0)
Waist/height ratio	Altered	80 (87.9)	26 (86.7)	37 (90.2)	17 (85.0)
Total cholesterol (mg/dL)	High	23 (25.3)	7 (23.3)	11 (26.8)	5 (25.0)
LDL-c (mg/dL)	High	23 (25.3)	8 (26.7)	11 (26.8)	4 (20.0)
HDL-c (mg/dL)	Low	59 (64.8)	18 (60.0)	29 (70.7)	12 (60.0)
Triglycerides (mg/dL)	High	19 (20.88)	6 (20.0)	9 (22.0)	4 (20.0)
Non-HDL-c (mg/dL)	High	46 (50.5)	17 (56.7)	19 (46.3)	10 (50.0)
Dyslipidemia	Yes	75 (82.4)	23 (76.7)	35 (85.4)	17 (85.0)

Table 2. Nutritional status, lifestyle, pubertal stage, and biochemical data of children and adolescents with rheumatic diseases.

		Total (n = 91) n (%)	Poly JIA (n = 30) n (%)	JSLE (n = 41) n (%)	JDM (n = 20) n (%)
BMI classification	Thinness	9 (9.9)	4 (13.3)	1 (2.4)	4 (20.0)
	Normal	57 (62.6)	22 (73.4)	23 (56.1)	12 (60.0)
	Overweight	25 (27.5)	4 (13.3)	17 (41.5)	4 (20.0)
Height for age	Below adequate	4 (4.4)	3 (10.0)	1 (2.4)	0 (0.0)
Physical activity classification	Less active	84 (92.3)	27 (90.0)	39 (95.1)	18 (90.0)
Waist/height ration	Inadequate	31 (34.1)	6 (20.0)	20 (48.8)	5 (25.0)
Pubertal stage	Prepubertal	28 (30.8)	15 (50.0)	7 (17.1)	6 (30.0)
	Pubertal	12 (13.2)	5 (16.7)	2 (4.9)	5 (25.0)
	Postpubertal	51 (56.0)	10 (33.3)	32 (78.0)	9 (45.0)
Total cholesterol (mg/dL)	Borderline/high	30 (33.0)	9 (30.0)	15 (36.6)	6 (30.0)
LDL-c (mg/dL)	Borderline/high	19 (20.9)	4 (13.3)	12 (29.3)	3 (15.0)
HDL-c (mg/dL)	Borderline/low	48 (52.8)	14 (46.6)	20 (48.8)	14 (70.0)
Triglycerides (mg/dL)	Borderline/high	46 (50.6)	12 (40.0)	23 (56.1)	11 (55.0)
Non-HDL-c (mg/ dL)	Borderline/high	30 (32.7)	8 (26.7)	15 (36.6)	7 (35.0)
Dyslipidemia	Yes	76 (83.5)	21 (70.0)	36 (87.8)	19 (95.0)

CONCLUSION

The present study emphasizes the high prevalence of overweight, dyslipidemia, physical inactivity and central adiposity in the parents of children and adolescents with chronic rheumatic diseases. There was a weak association between TG by parents and their children; but the same was not observed for BMI classification, other fractions of the lipid profile and for physical activity. The findings point to the importance of parental involvement in nutritional intervention strategies.

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