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LIPID PROFILE IN CHILDREN WITH INSULIN-DEPENDENT DIABETES MELLITUS

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Background. Pediatric patients with type 1 diabetes (T1DM) have an increased prevalence of dyslipidemia, which contributes to their high risk of cardiovascular diseases (CVD).

Aim. This recherche aims to study the lipid profile changes in T1DM in children aged 10 to 18 years.

Material and Methods. Cases of type 1 diabetes mellitus aged 10 - 18 years were enrolled in this study and were 44 (duration of T1D ≥ 5 years; insulin therapy). A group of control matched for age and gender (n = 46) was selected by simple random sampling. Demographic data were retrieved from case files, and fasting lipid profile and HbA1c levels were determined for all subjects. Lipid abnormalities were defined based on the Expert Panel on Integrated Guidelines for Cardiovascular Health Risk Reduction in Children and Adolescents.

Results. Ninety subjects aged 10-18 years were studied (mean age:14.0 ±4.0 years, for both research groups). There were 20 (45.5%) girls, and 24 (54.5%) boys in the group with T1DM, and 29 (63.0%) girls, and 17 (37.0%) boys in the group with non-T1DM. The mean duration of diabetes was 6.34 ± 2.28 years.

The mean±SD of total cholesterol (TC), triglycerides (TG), high-density lipoprotein (HDL-C), and low-density lipoprotein (LDL-C) were: TC=5.6±0.3mmol/l, for T1DM vs. 4.7±0.4 mmol/l for non-T1DM (p<0.001); LDL-C=1.6±0.4 mmol/l, for T1DM vs. 1.0±0.2 mmol/l for non-T1DM (p<0.001); HDL-C = 0.8±0.2 mmol/l, for T1DM vs. 0.7±0.2 mmol/l for non-T1DM (p=0.3); TG=2.03 ± 0.2 mmol/l, for T1DM vs. 1.5 ±0.2 mmol/l for non-T1DM (p<0.001).

Variables	Category	Dyslipidemia (n (%))	Elevated TC (≥5.2 mmol/l) (n (%))	Elevated TG (≥1.47 mmol/l) (n (%))	High LDL-C (≥3.35 mmol/l) (n (%))	Low HDL-C (<0.9 mmol/l) (n (%))
Age	10-14 y (n-25 pct)		25 (100%)	25 (100%)	-	20 (80.77%)
	15-18 y (n-19 pct)		19 (100%)	19 (100%)	-	15 (83.4%)
A1C	OGC (n-8 pct)		8 (100%)	8 (100%)	-	6 (87.5%)
	PGC (n-36 pct)		36 (100%)	36 (100%)	-	30 (81.01%)

Characteristics	T1DM+, male, M ± SD	T1DM+, female, M ± SD	T1DM-, male, M ± SD	T1DM-, female, M ± SD
Total cholesterol, mmol/l*	5.69±0.28	5.61±0.19	4.55±0.32	4.8±0.3
TG, mmol/l*	2.03±0.2	1.95±0.2	1.52±0.12	1.49±0.14
LDL-C, mmol/l*	1.71±0.6	1.73±0.42	0.99±0.18	1.0±0.12
HDL-C, mmol/l*	0.74±0.12	0.78±0.15	0.72±0.16	0.73±0.2
Non-HDL-C, mmol/l*	4.95±0.31	4.83±0.26	3.84±0.42	4.06±0.32

Conclusion. It was concluded that the lipid abnormalities (total cholesterol, TG, LDL-C) were significantly higher in diabetic patients than in the control group. Early diagnosis of modification of the lipid profile can be used as a preventive measure for the development of CVD in the pediatric population with T1DM.

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