



# Correlation of Lipoprotein(a) levels and family history of cardiovascular disease in a sample of overweight/obese children and adolescents

No conflict of interest

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## Introduction

Children with positive familiar history (FH) of cardiovascular disease (CVD), consist a subpopulation in higher risk for early life cardiovascular events. Obesity represents a major risk factor for coronary heart disease and premature death. Recently published studies integrate high levels of lipoprotein(a)(Lp(a)) into the group of cardiovascular risk factors.

The aim was to investigate a possible correlation between Lp(a) levels and FH of CVD in a sample of overweight/obese (ow/ob) children and adolescents and compare them with normal weight controls.

## Methods

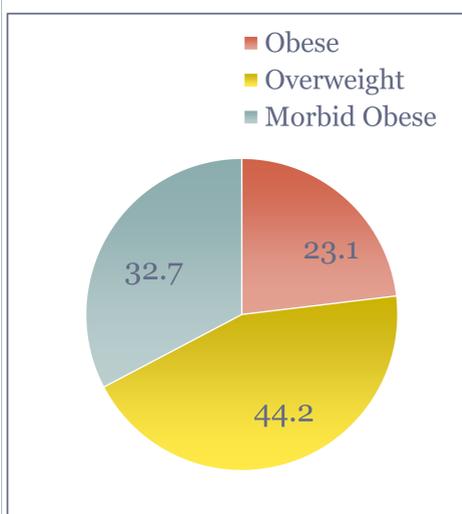
Data were collected from 147 ob/ow children and adolescents (66 boys, 81 girls) who attended the paediatric obesity clinic of a tertiary centre, and 59 healthy controls (25 boys, 34 girls) with normal body mass index (BMI) for age. From all participants a FH of CVD, a 12-hour-fasting morning lipid profile including Lp(a) were obtained, and a full physical examination was performed. Statistical analysis was performed with IBM SPSS 23, statistical significance set at p value <0.05.

## Results and Conclusions

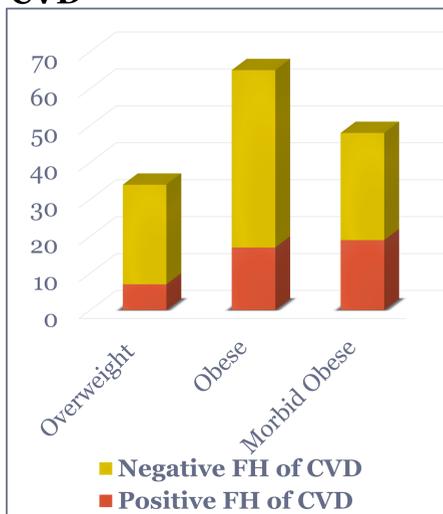
Mean age of ow/ob was 10 years ( $\pm 2.8$ ), 10.2 ( $\pm 0.9$ ) of controls. In the ow/ob group 23.1% were overweight, 44.2% obese, 32.7% had morbid obesity (tabl. 1). The mean Lp(a) value in the ow/ob was statistically significant ( $p < 0.05$ ), 31.3mg/dl ( $\pm 40.8$ ), and 24.2 mg/dl ( $\pm 34.2$ ) in the controls (tabl. 2). The ow/ob children and adolescents with positive FH of CVD had Lp(a) levels  $>30$ mg/dl, mean value 34.8mg/dl ( $\pm 37.4$ ), the rest with negative FH of CVD had a mean Lp(a) 29.8mg/dl ( $\pm 42.1$ ), statistically significant difference ( $p < 0.05$ ) (tabl. 3). The association between level of obesity (overweight, obese, morbidly obese) and FH of CVD was also statistically significant ( $p < 0.05$ ).

In the ow/ob children and adolescents of our study raised L(a) levels were found to positively correlate with FH of CVD. Determining Lp(a) levels is important for evaluating obesity in paediatric populations as abnormal Lp(a) levels correlate with higher risk of cardiovascular events in early life. When high Lp(a) levels are found, a more intense intervention is recommended to establish normal weight and at the same time to establish healthier eating habits and a daily exercise routine.

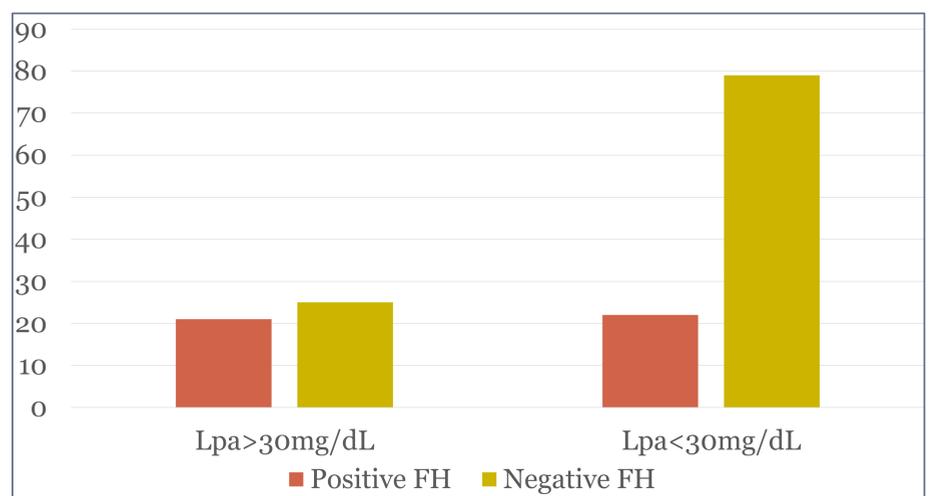
**Table 1. Grade of obesity**



**Table 2. Lp(a) and FH of CVD**



**Table 3. Lp(a) levels and FH of CVD**



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