

ELEVATED LIPOPROTEIN (a) WITHIN THE PEDIATRIC POPULATION

Noor Alshami¹, Omar Qayum¹, Geetha Raghuvier²

¹ UMKC School of Medicine, Kansas City, Missouri

² Children's Mercy Hospital, Kansas City, Missouri

INTRODUCTION

- Cardiovascular disease (CVD) is a public health problem and the leading cause of death globally
- Risk factors such as a family history of premature CVD and lipid abnormalities are used as screening tools to evaluate the need for early intervention
- Lipid abnormalities that confer risk include elevated low-density lipoprotein cholesterol (LDL-C), decreased high-density lipoprotein cholesterol (HDL-C), elevated triglycerides (TG), and/or elevated lipoprotein (a) [Lp(a)].
- Elevated Lp(a) is believed to accelerate atherosclerosis and has not been well studied in children.
- This study aims to examine the relationship between elevated Lp(a), family history of premature CVD, and lipid abnormalities within a high-risk pediatric population.

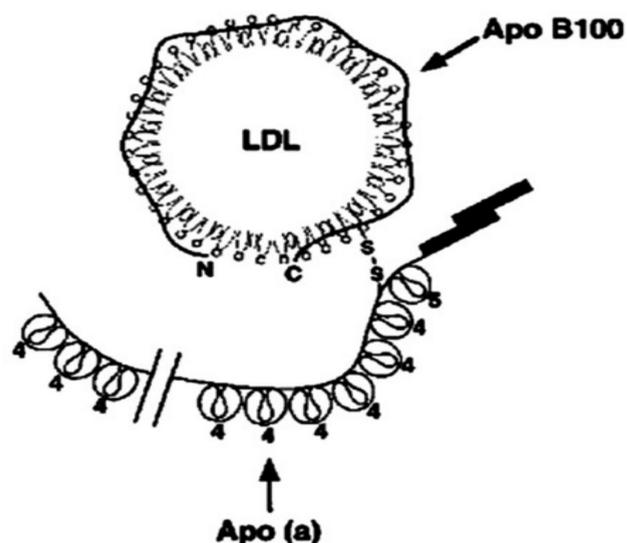


Figure: Simplified molecular structure of lipoprotein(a)¹

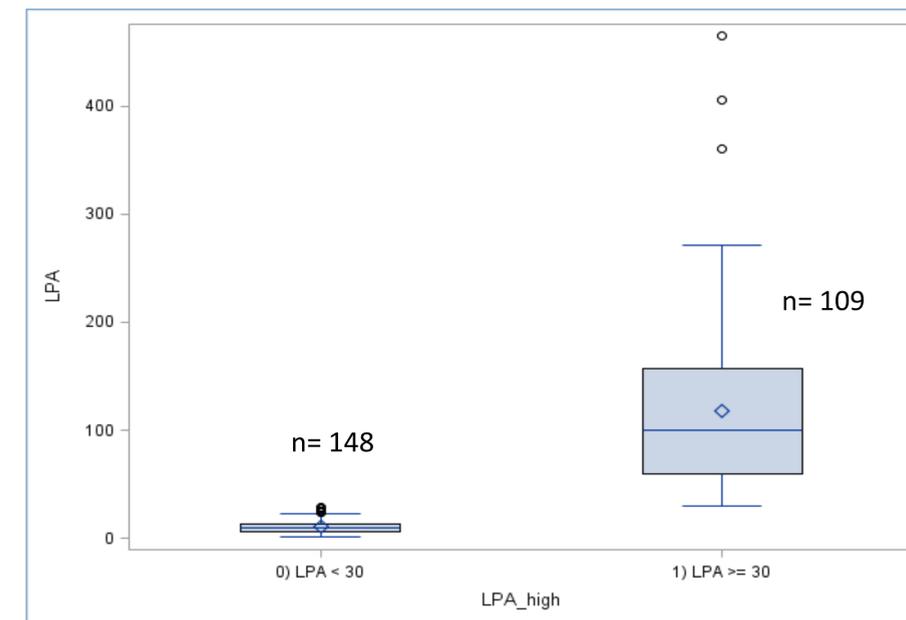
METHODS

- This is a single-center, retrospective study that obtained data for 257 children who met criteria to be followed in Children's Mercy Hospital Preventive Cardiology Clinic.
- **Independent variable:** Lp(a) level, defining two groups:
 - High-risk case group with Lp(a) \geq 30mg/dL
 - Lower risk control group with Lp(a) < 30mg/dL
- **Dependent variables:**
 - Family history of premature CVD or death (<50 years of age)
 - Dyslipidemia
 - LDL-C > 130mg/dL
 - HDL-C < 45mg/dL
 - TG > 200mg/dL

RESULTS

- There was a significant association between elevated Lp(a) and positive family history of CVD (p=0.02), higher HDL-C (p=0.01), and lower TG (p<0.00).
- After adjusting for age, gender, BMI and, tobacco use, the odds of having a high Lp(a) decreased 0.4% per 1-unit increase in TG (OR 0.996, 95% CI [0.993-0.999]).

	Case Group (n=109)	Control Group (n=148)	P-Value
Family History of premature CVD	60 (55.6%)	61 (41.2%)	0.02
HDL-C (mg/dL)	48.8 \pm 14.5	44.3 \pm 12.9	0.009
TG	143 \pm 93.7	207.6 \pm 175.0	< 0.001



CONCLUSION

- These findings reveal a relationship between elevated Lp(a), family history of premature CVD, and specific lipid abnormalities in this high-risk population.
- In addition, low TG were shown to be predictive of elevated Lp(a).
- This study may contribute toward wider adoption of Lp(a) as a screening tool for identification of children at higher-risk of developing CVD prematurely.

REFERENCES

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