BACKGROUND

There are several traditional risk factors for heart disease including:
- Increasing age
- Tobacco smoke exposure
- Hypertension
- Dyslipidemia
- Obesity
- Family history of premature coronary artery disease
- Diabetes

Carotid artery intima media thickness (CIMT) and vascular distensibility indices are subclinical non-traditional markers of atherosclerosis and precede clinical cardiovascular events.1

Elevated high sensitivity C-reactive protein (hsCRP), and vitamin D deficiency are associated with cardiovascular events in men and women with elevated C-reactive protein.2

Inflammatory changes that have been detectable in obese children and is accompanied by inverse correlation between hsCRP levels and vascular distensibility indices.3

METHODS

Prospective, case controlled study.

**Case group:** Inclusion criteria - obese children (BMI ≥85th percentile for age and sex) aged 9-11 years old.

**Control group:** Inclusion criteria - age and gender matched to the case group within 3 months of birthdate, BMI < 85th percentile for age and sex, no history of systemic disease or active infections, no active medications and no history of tobacco smoke exposure.

Data collection includes history, anthropometric, demographic, and laboratory data, CIMT measurements, vascular distensibility and indices.

**Power analysis:** Based on the primary outcomes variable, CIMT and an assumption that the control group mean CIMT=0.34 mm, case group mean CIMT=0.37 mm and standard deviation is 0.035 mm.2

**LIMITATIONS**

This study is currently ongoing so only 11/22 case group data is shown below. The control group data is not available yet.

**ANTICIPATED OUTCOMES**

- Higher hsCRP levels in obese children compared to control children.
- Direct correlation between hsCRP levels and CIMT.
- Inverse correlation between hsCRP levels and vascular distensibility indices.
- Vitamin D level and hsCRP levels maybe inversely correlated and this may result in a synergistic, adverse effect on CIMT and vascular distensibility indices.

**REFERENCES**