Pediatr Ther 2018, Volume 8
DOI: 10.4172/2161-0665-C5-064

Apelin: A novel predictor of obesity-related complications in children

Maged Atta Fawzy El Wakeel
National Research Centre, Egypt

Background & Aim: The rapidly increasing prevalence of childhood obesity has become a major burden on health worldwide, giving an alarm to healthcare clinicians and researchers. Adipocytes act as an active endocrine organ by releasing a plenty of bioactive mediators (adipokines) that play a vital role in regulating metabolic processes. Apelin is a newly discovered adipokine that is expressed in adipocytes. The present work aimed to study the association between serum apelin and childhood obesity and its related complications as hypertension and hyperglycemia.

Method: 50 obese and 45 non-obese age and sex matched children were enrolled in our study with mean age of (9.5±2.1) and (8.7±1.3) respectively. Anthropometric measurements, blood pressure were assessed in all studied participants; we also determined the lipid profile, serum insulin, Fasting Blood Glucose (FBG) level, HOMA-IR and serum apelin.

Results: Obese children had higher levels of FBG, HbA1c, serum insulin, HOMA-IR, triglycerides, total cholesterol and Low-Density Lipoprotein (LDL) and Diastolic Blood Pressure (DBP Z-score); compared to controls (all $p<0.05$). Apelin was significantly higher in obese children versus controls and correlated positively with BMI Z-Score ($p=0.008$), DBP Z-Score ($P=0.02$), cholesterol, TG (both $p=0.02$), serum insulin ($p=0.003$), FBG and HOMA-IR (both $p=0.001$). Linear regression analysis showed that FBG was the most effective factor predicting the level of serum apelin ($p=0.04$).

Conclusion: This work supports the hypothesis that apelin may have a pivotal role in the pathogenesis of obesity-related complications in children including hypertension and insulin resistance and a higher risk of occurrence of metabolic syndrome.

maged_elwakeel@yahoo.com