

23<sup>rd</sup> Annual Congress on

## PEDIATRICS &amp; NEONATOLOGY

November 05-06, 2018 Bangkok, Thailand

**Apelin: A novel predictor of obesity-related complications in children****Maged A El Wakeel**

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**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.

**Result:** 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.

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