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Metabolic Outcomes of Children and Adolescents with Obesity Upon First Obesity Clinic Visit

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Introduction:

Childhood obesity is a growing public health concern linked to multiple cardiometabolic complications. These complications may already be present at the first clinical assessment; however, data describing their prevalence and severity in the referred paediatric population remained limited.

Objectives:

To describe metabolic outcomes in children and adolescents with obesity at first referral to a tertiary obesity clinic.

Methods:

This retrospective cross-sectional study reviewed medical records of 45 patients aged 3–17 years with obesity seen from January to July 2025 in Universiti Malaya Medical Centre Paediatric Obesity Clinic. Anthropometric, biochemical, and clinical data were collected reflecting five main cardiometabolic complications including elevated blood pressure, dyslipidaemia, diabetes mellitus, metabolic associated steatohepatitis (MASH) and metabolic syndrome.

Results:

At referral (mean age: 11.7 ± 3.1 years), median BMI z-scores was 2.52 (2.10 - 2.68). Elevated blood pressure was present in 68.9%, dyslipidaemia in 48.7%, prediabetes in 22.2%, and high NAFLD risk (AST/ALT ratio <1) in 63.6% of those tested. High TG–HDL-C ratio (≥ 1.11) was found in 48.7%, and 13.3% fulfilled ≥ 2 metabolic syndrome criteria, with 8.9% diagnosed with metabolic syndrome. All cardiometabolic complications associated with higher BMI z-scores with complication appeared at median BMI z-scores of 2.50 (2.13 - 2.69).

Conclusions:

Children and adolescents with obesity referred to tertiary care already exhibit substantial metabolic risk, highlighting the need for early screening and intervention.

Keywords: Childhood obesity, metabolic syndrome, dyslipidaemia, NAFLD, MASH