INTRODUCTION

Prevalence rate of Metabolic Syndrome in children vary and depends on the criteria used. 
National Cholesterol Education Program’s (NCEP) or Adult Treatment Panel III (ATP III) definition (for children 12–18 years): Individuals with more than or equal to 3 of the following are considered at risk for MS:
• Age and sex specific waist circumference more than or equal to 90th percentile, fasting plasma glucose more than 110 mg/dL,
• Triglycerides more than or equal to 110 mg/dL,
• HDL cholesterol less than or equal to 40 mg/dL,
• BP more than or equal to 90th percentile for age and sex.

The International Diabetes Federation’s (IDF) definition: presence of central obesity and any two of the four factors:

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<thead>
<tr>
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<th>10 to &lt;16 years</th>
<th>≥16 years</th>
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<tbody>
<tr>
<td>Obesity (WC)*</td>
<td>≥90th percentile</td>
<td>≥94 cm (males) ≥80 cm (females)</td>
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<tr>
<td>Triglycerides</td>
<td>≥150 mg/dL</td>
<td>≥150 mg/dL</td>
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<tr>
<td>HDL cholesterol</td>
<td>&lt;40 mg/dL</td>
<td>&lt;40 mg/dL (males) &lt;50 mg/dL (females)</td>
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<td>Blood pressure</td>
<td>SBP ≥130 mm Hg, or DBP ≥85 mm Hg</td>
<td>SBP ≥130 mm Hg, or DBP ≥85 mm Hg or Treatment of previously diagnosed hypertension</td>
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<td>Fasting plasma glucose</td>
<td>≥100 mg/dL, or known T2DM</td>
<td>≥100 mg/dL, or known T2DM</td>
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Those aged 6 to <10 years with a family history of MS, T2DM, dyslipidemia, cardiovascular disease, hypertension and/or obesity were also evaluated for metabolic syndrome. Eighteen out of 130 children (13.84%) met the criteria for metabolic syndrome as per IDF definition in this age group.

Children were also evaluated for MS as per the modified definition proposed by NCEP/ATPIII. As per this definition, 63 out of 158 (39.8%) children in the age group of 12-18 yr met the criteria for pediatric metabolic syndrome.

RESULTS

As per IDF definition, 64 out of 240 (26.66%) children in the 10 to 18 year age group met the criteria for pediatric metabolic syndrome.

CONCLUSION

Overall, 39.8% and 26.66% children met the NCEP/ATPIII & IDF criteria respectively. The low incidence of MS with IDF definition may be due to the cut-off value used for blood pressure as systolic BP ≥130 or diastolic BP ≥85 mmHg for all age groups. The WC percentiles proposed for Indian children are useful in identifying children with metabolic syndrome. Early detection and management is vital in halting the progression of this syndrome pathway in children.

OBJECTIVES

To assess the risk of metabolic syndrome (MS) in children and adolescents as per the recommendation based on the age and sex-specific reference curves for Waist Circumference (WC) for Indian children by Khadilkar et al.

METHODS

A total of 370 children (200 girls, 170 boys) aged 6 to 18 years coming for regular checkups to our center from January 2016 to March 2019 with WC >70th percentile were enrolled. All children were assessed for metabolic syndrome risk factors with respect to BMI, BP measurements, and levels of fasting triglycerides, high-density lipoprotein (HDL) cholesterol, low density lipoprotein (LDL), and fasting plasma glucose were recorded for all patients.