



Obesity associated hypertension in children

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In concert with the increasing prevalence of obesity in children, pediatric hypertension has undergone an epidemiological shift. The association between obesity and hypertension in children has been reported in numerous studies among a variety of ethnic and racial groups, with virtually all studies finding higher blood pressure and/or higher prevalence of hypertension in obese compared with lean children. Irrespective of race, gender, or age, the risk of elevated blood pressure was significantly higher for children in the upper compared with the lower of BMI. The early clinical course of obesity hypertension appears to be characterized by a preponderance of isolated systolic hypertension (systolic hypertension without diastolic hypertension). There is compelling evidence that overweight status and elevated blood pressure are closely related and synergistically increase cardiovascular risk. The link between obesity and hypertension may be mediated in part by sympathetic nervous system (SNS) hyperactivity. This state of hyperactivity may include cardiovascular manifestations such as increased heart rate and blood pressure variability, neurohumoral manifestations such as increased levels of plasma catecholamines, and neural manifestations such as increased peripheral sympathetic nerve traffic. The presence of ongoing obesity-related outcomes such as hypertension, diabetes mellitus or impaired glucose tolerance, and dyslipidemia may increase the rationale for more aggressive therapy. Ultimately, multiple therapeutic strategies may be necessary to achieve the desired goal.