



EDITORIAL COMMENT

High blood pressure in pediatric care: Early diagnosis and treatment can reduce the risk of cardiovascular events in adulthood



Pressão arterial elevada em cuidados pediátricos: o diagnóstico precoce e a terapêutica podem reduzir o risco de eventos cardiovasculares na idade adulta

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The prevalence of high blood pressure (BP) in children has increased considerably as sedentary lifestyles and weight/obesity problems have grown in children.¹ High BP is very likely to continue throughout childhood and adolescence, leading to premature cardiovascular events in adulthood. There is an urgent need to identify children at risk and offer them early intervention.^{1,2}

Pediatric hypertension is difficult to identify accurately. Variations in surveillance strategies, diagnostic definitions and BP assessment methods account for epidemiological inaccuracies.

In children and adolescents, the prevalence of high BP is estimated to be between 2-5% and the prevalence of prehypertension between 4-15%. Several authors have established a relationship between body mass index and blood pressure levels, with a statistically significant higher prevalence (11-30%) of elevated BP in overweight and obese children and adolescents.^{2,3}

The Portuguese National Child and Youth Health Program recommends the assessment of BP in all children over the age of three at routine doctor appointments. BP should be

measured under the age of three in the presence of risk factors or diseases associated with high blood pressure.

Ambulatory blood pressure monitoring (ABPM) should be measured in pediatric patients with a likely diagnosis of high BP, since values obtained over 24 hours have higher reproducibility and a better correlation with target organ damage. ABPM also enables white coat BP or masked high BP to be studied, the latter being associated with progression to sustained high BP.⁴

In 2008, the American Heart Association (AHA) issued the first consensus recommendations for performing and interpreting ABPM in children. They have been updated several times and all advocate more frequent use of ABPM in children and adolescents with suspected high BP.^{5,6}

ABPM should be interpreted according to percentile tables, such as those produced by the European Hypertension Society (updated in 2016).⁷ ABPM is the gold standard to confirm the diagnosis of high BP, particularly in overweight and obese children and adolescents with cardiovascular risk factors.

One of the most valuable parameters when evaluating children with high BP is arterial pulse wave velocity (PWV). This is a non-invasive method that characterizes arterial stiffness and predicts adverse cardiovascular events. PWV is essential in the study of the pediatric population with high BP.⁸ In the June issue of the journal, E. Cilsal presents a study of 30 children with newly diagnosed high blood pres-

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sure, highlighting the importance of early diagnosis and the highly probable relationship between high BP and cardiovascular diseases in adulthood. The author reports that the onset of cardio-vascular damage can be at a young age with an increase in left ventricular mass, progressing to left ventricular hypertrophy. This small series gives further insight into the subject and describes the analysis of heart rate variability, which showed decreased parasympathetic activity in children with high BP.⁹ Further studies are necessary.

All children with ABPM-confirmed high blood pressure should undergo echocardiography to screen for congenital heart disease as a potential underlying cause, including coarctation of the aorta, and to assess left ventricular mass and cardiac output.¹⁰

Early detection of high BP in children is paramount and preventive measures need to be established. As stated by the AHA in 2016, it is only by promoting cardiovascular health in all children that can we decrease the risk of cardiovascular disease in adulthood.¹¹

Conflicts of interest

The author has no conflicts of interest to declare.

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