

Editorial



OPEN ACCESS

Received: Aug 24, 2019

Revised: Sep 18, 2019

Accepted: Sep 23, 2019

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Conflict of Interest

The author has no financial conflicts of interest.

The contents of the report are the author's own views and do not necessarily reflect the views of the *Korean Circulation Journal*.

Do We Know the Normal Blood Pressure Level in Korean Children and Adolescents?

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► See the article “Blood Pressure Reference Values for Normal Weight Korean Children and Adolescents: Data from The Korea National Health and Nutrition Examination Survey 1998–2016: The Korean Working Group of Pediatric Hypertension” in volume 49 on page 1167.

According to the official Korean data of the individual rates of awareness, treatment, and control have been increased from 25%, 22%, and 5% in 1998 to 65%, 61%, and 44% in 2016 by the report of Korean Society of Hypertension.¹⁾ Despite of having improved of Korean hypertension control rates to approximately 40% based on the national survey of Korean populations, more than half of uncontrolled patients with hypertension, higher in the younger populations including children and adolescents, still insinuates an important potential issues for future cardiovascular disease, which needs to be explored.²⁾³⁾

The definition of pediatric hypertension is based on the normative distribution of blood pressure (BP) in the population and defined as systolic BP (SBP) and/or diastolic BP (DBP) \geq 95th percentile.⁴⁾ Diagnosis is complicated because the reference values are sex-, age-, and height-specific.⁴⁾ In addition, the classification of BP in adolescents fluctuates between guidelines.⁴⁾⁷⁾

Due to increasing childhood obesity, hypertension is becoming one of the most common health conditions in children and adolescents.⁷⁾ So, for the diagnosis of pediatric hypertension, the normal range of BP should be clarified in children and adolescents.

The 2016 European Society for Hypertension guidelines use a definition for individuals 16 years or older that is based on the absolute cutoff used for adults, \geq 140/90 mmHg.⁵⁾ In contrast, the Clinical Practice Guideline, which was revised from the Fourth Report, defined hypertension in patients 13 years or older as \geq 130/80 mmHg, which corresponds to the American Heart Association guidelines' definition.⁶⁾

Kim et al.,⁷⁾ reported the valuable data of BP measurements in Korean children and adolescents aged 10–18 years were performed in the Korean National Health and Nutrition Examination Survey from 1998 to 2016. BP was measured using a mercury sphygmomanometer. Sex-, age-, and height-specific SBP and DBP percentiles were calculated in the non-overweight children (n=10,442).⁷⁾

They demonstrated that the 50th, 90th, 95th, and 99th percentiles of SBP and DBP tables and graphs of non-overweight children and adolescents aged 10–18 years were presented

by age and height percentiles. In addition, the SBP and DBP at the 95th percentile were well correlated with height. The BP tables presented by height contained BP values from 124 to 190 cm for boys and from 120 to 178 cm for girls. Males had higher SBP and DBP.⁷⁾

This study also presented the patients' height according to the sex-, age-, and height percentiles (Tables 6 and 7). Physicians can apply these height data to characterize a patient's height percentile and diagnose hypertension if SBP and/or DBP are \geq 95th percentile.⁷⁾

Meanwhile, BP levels in adolescence vary between different ethnic populations.⁸⁾ In their study, the values of SBP at the 95th percentile for 10-year-old boys were 1–4 mmHg higher and the values of DBP at the 95th percentile were 2–3 mmHg lower than the new BP tables in the 2017 Clinical Practice Guidelines. On the other hand, the values of SBP at the 95th percentile for boys of the same age were 7–8 mmHg higher and the values of DBP at the 95th percentile were 5–10 mmHg higher than the Chinese BP tables.⁹⁾

This report will be helpful in diagnosis and treatment of hypertension in Korean children and adolescents to benefit toward achieving and maintaining BP below the target level to improve lifelong cardiovascular outcome.

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