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EDITORIAL COMMENTARY

Body Frame–Based Hypertension Risk Assessment—Has the Time Come?

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Hypertension is one of the most common noncommunicable disorders affecting children and adolescents, with a prevalence of 4% [1]. Long-term adverse health effects and the asymptomatic nature of hypertension highlight the need for its early identification with community-based screening programs. The complexities in blood pressure assessment and interpretation are significant impediments to the goal [2]. This has led to the suggestion of using surrogate anthropometric markers to identify children and adolescents at risk for hypertension. Body mass index, wrist and waist circumference, and waist–height ratio have been proposed as hypertension surrogates; practical issues in assessment and a lack of age-independent cutoffs limit their widespread use [3–6].

In this issue of the Journal, Vispute et al. report their study comparing the predictive value of two body-frame measures (height-to-wrist circumference ratio and elbow breadth) in identifying Indian children and adolescents at risk of hypertension [7]. The authors identified greater accuracy of height-to-wrist circumference ratio with an impressive dose-response association between hypertension prevalence and frame size. The height correction enhanced the hypertension predictive accuracy of wrist circumference compared to a previous study by the authors [4]. Based on these observations, the authors proposed an age- and gender-independent cutoff of 10.6 for identifying Indian children and adolescents at risk for hypertension between 9–18 y of age.

The availability of an easy-to-measure hypertension risk predictor with age- and gender-independent cutoff is an important step towards devising a community-based hypertension screening strategy. The proposed cutoff, however, needs validation in more extensive studies across settings before adoption. An ideal screening strategy for hypertension should identify the most hypertensive subjects while minimizing the burden of falsely flagged individuals needing a second step evaluation. The proposed cutoff would have missed 29% of hypertensive subjects in the study population while flagging three individuals with normal blood pressure for every one identified with hypertension. The high negative predictive value of the cutoff observed in the study needs validation as it may be lower in populations with higher hypertension prevalence. The limited accuracy of single-setting blood pressure recording in identifying hypertension due to the significant intraindividual blood pressure variation should also be considered while extrapolating the findings of the study.

The study represents an important step towards developing a surrogate marker for screening hypertension risk in children and adolescents; the proposed cutoffs, however, need validation and cost-benefit assessment in larger multicentric studies before widespread implementation.

Declarations

Conflict of Interest None.

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