Echocardiographic nomograms and *Z*-score for term Indian neonates

Mahmood Dhahir Al-Mendalawi
Department of Paediatrics, Al-Kindy College of Medicine, University of Baghdad, Baghdad, Iraq.
E-mail: mdalmendalawi@yahoo.com

Submitted: 07-Apr-2023 **Accepted:** 16-Apr-2023 **Published:** 16-Aug-2023

Sir,

In the January–February 2023 issue of the *Annals of Pediatric Cardiology*, Singh *et al.*[1] formulated nomograms with *Z*-scores for a set of echocardiographic elements for term Indian neonates weighing 2–4 kg at birth, within the first 5 days of life. Apart from the limitation that, as stated by Singh *et al.*,[1] the formulated nomograms do not apply to small for gestational age and large for gestational age, we believe that the following two points might limit the clinical applicability of these nomograms in research and clinical field.

First, Singh *et al.*[1] estimated different echocardiographic parameters in relation to body surface area (BSA) based on Haycock's formula.[1] It is important to note that there are various formulas to measure BSA, such as Boyd, Fujimoto and Watanabe, Mosteller, Gehan and George, and Haycock. Importantly, there is a noticeable difference in the performance of each BSA calculation method in a given pediatric population.[2,3] As there is yet no evaluation of the aforementioned formula to assess BSA in the Indian pediatric population, the reference of Singh *et al.*[1] to Haycock's formula in the study methodology rather than other formulas is debatable.

Second, Singh *et al.*[1] mentioned that the studied cohort recruited 51.4% of boys and 48.6% of girls. Importantly, there are gender-specific differences in certain echocardiographic dimensions. In a Japanese study, significant gender differences were found in the left ventricular posterior thicknesses at end-systole and end-diastole and intra-ventricular septal thicknesses at end-systole and end-diastole.[4] In another American study, boys of all ages were noticed to have larger heart valve dimensions. Even after accounting for differences in body sizes, the differences in these dimensions were found to be statistically significant for three of the four heart valves. The difference was attributed to boys having a higher circulatory volume in comparison with girls.[5] Regretfully, the gender-specific nomograms for the studied population were not identified by Singh *et al.*[1]

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Singh V, Satheesh S, Ganapathy S, Nair NS, Mondal N, Selvaraj R, *et al.* Echocardiographic nomograms and Z-scores for term Indian neonates. Ann Pediatr Card 2023;16:11-7.
2. Orimadegun A, Omisanjo A. Evaluation of five formulae for estimating body surface area of Nigerian children. Ann Med Health Sci Res 2014;4:889-98.
3. Amit LM, Song YW. Formulae evaluation for estimating body surface area of Korean children. J UOEH 2018;40:19-32.
4. Nagasawa H, Arakaki Y. Identification of gender differences in the thickness of the left ventricular wall by echocardiography in children. Cardiol Young 2002;12:37-43.
5. Zilberman MV, Khoury PR, Kimball RT. Two-dimensional echocardiographic valve measurements in healthy children: Gender-specific differences. Pediatr Cardiol 2005;26:356-60.

Access this article online

Quick Response Code:

Website: https://journals.lww.com/aopc

DOI: 10.4103/apc.apc_48_23

How to cite this article: Al-Mendalawi MD. Echocardiographic nomograms and *Z*-score for term Indian neonates. Ann Pediatr Card 2023;16:159.