

Study of congenital heart diseases amongst children with Down's syndrome

Sir,

We read the interesting study by Banoth *et al.*^[1] By using two-dimensional (2D) echocardiography with colour Doppler, Banoth *et al.*^[1] studied the pattern of congenital heart defects (CHDs) amongst Indian paediatric patients with Down's syndrome (DS). They found that endocardial cushion defects (ECDs) were detected in 29.7% of the patients.^[1] The reported figure of 29.7% looks lesser than the near 50% figure reported worldwide.^[2] Apart from the limitation of conducting the study in a single centre, we believe that the following two factors could explain the variation in the prevalence of ECDs estimated by Banoth *et al.*^[1] with that reported worldwide.^[2]

First, the astute realisation of the basic anatomy and associated lesions in ECDs is a cornerstone to the accurate diagnosis. The major components of ECDs recruit absence of the atrioventricular (AV) septum, inlet outlet disproportion, abnormal location of the left ventricular papillary muscles and abnormal configuration of the AV valves and cleft in the left AV valve. All these components are predicated by a sprung AV junction.^[3] Indeed, anatomic varieties in ECDs are being reported increasingly, suggesting that the condition is more prevalent than thought previously.^[4] We believe that there are noticeable variations in the awareness of the echocardiographers on the anatomic elements of ECDs, especially the atypical forms. This point is expected to be reflected in their skills in diagnosing ECDs.

Second, 2D echocardiography with colour Doppler was employed in Banoth *et al.*'s study^[1] to diagnose various types of CHD. With the advanced technology and recognition of the anatomic varieties of ECDs, the standard 2D echocardiography is no longer the standard

tool for the functional and morphological assessment of this lesion, especially the malformations of AV valve(s). It is expected that by using 2D echocardiography, a good number of ECD cases could be missed. Alternatively, 3D echocardiography offers a unique realistic *en-face* view of various cardiac valves and septal defects, including ECD, and facilitates accurate assessment of the heart anatomy, dynamics and function.^[5]

Financial support and sponsorship
Nil.

Conflicts of interest

There are no conflicts of interest.

Mahmood Dhahir Al-Mendalawi

Department of Paediatrics, Al-Kindy College of Medicine,
University of Baghdad, Baghdad, Iraq

Address for correspondence: Dr Mahmood Dhahir Al-Mendalawi,
Professor, Department of Paediatrics, Al-Kindy College of Medicine,
University of Baghdad, P. O. Box 55302, Baghdad Post Office,
Baghdad, Iraq.
E-mail: mdalmendalawi@yahoo.com

Submitted: 28-Oct-2022 **Accepted:** 04-Jan-2023 **Published:** 16-Feb-2023

REFERENCES

1. Banoth PP, Badur M, Priyadarshini B, Cheni MA. Study of congenital heart diseases among children with Down's syndrome. *J Clin Sci Res* 2022;11:211-5.
2. Calkoen EE, Hazekamp MG, Blom NA, Elders BB, Gittenberger-de Groot AC, Haak MC, *et al.* Atrioventricular septal defect: From embryonic development to long-term follow-up. *Int J Cardiol* 2016;202:784-95.
3. Smallhorn JF. Cross-sectional echocardiographic assessment of atrioventricular septal defect: Basic morphology and preoperative risk factors. *Echocardiography* 2001;18:415-32.
4. Anderson RH, Wessels A, Vettukattil JJ. Morphology and morphogenesis of atrioventricular septal defect with common atrioventricular junction. *World J Pediatr Congenit Heart Surg* 2010;1:59-67.

Correspondence

5. Surkova E, West C, Flick C, Ilagan L, Gatzoulis MA, Senior R, *et al.* Added value of three-dimensional transthoracic echocardiography in assessment of an adult patient with atrioventricular septal defect. *Echocardiography* 2019;36:809-12.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
Quick Response Code: 	Website: www.jcsr.co.in
	DOI: 10.4103/jcsr.jcsr_226_22

How to cite this article: Al-Mendalawi MD. Study of congenital heart diseases amongst children with Down's syndrome. *J Clin Sci Res* 2023;12:76-7.