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Follow-up echocardiography in dextro-Transposition of the great arteries (d-TGA) - It's time to switch our practice

STUDY DESIGN

Design: Single-centre retrospective analysis

STUDY QUESTION

SETTING: A tertiary Paediatric Cardiology unit in the USA.

PATIENTS: 149 patients with a diagnosis of d-TGA who underwent an arterial switch operation (ASO) from January 1984 - January 2015 and had adequate follow-up data available. These included diagnoses of d-TGA without any other anomalies with an intact ventricular septum (d-TGA IVS) and d-TGA with other anatomical anomalies (complex d-TGA). Patients who presented with clinical symptoms and signs were excluded, as this study was solely to evaluate routine echocardiography in asymptomatic patients.

INTERVENTION: Routine screening echocardiography follow-up for a median length of 7.6 years with a median number of 12 echocardiograms per patient.

OUTCOMES: The primary outcome measured was the need for intervention, measured as a percentage of interventions needed following routine echocardiograms. The potential interventions were 1) medication increase 2) cardiac catheterisation 3) surgical intervention 4) hospital admission.

MAIN RESULTS

These are summarised in table 1 below.

DIAGNOSIS	NUMBER OF ECHOCARDIOGRAMS	NUMBER OF ECHOCARDIOGRAMS REQUIRING INTERVENTION (%)
d-TGA IVS	1086	7 (0.64%)
Complex d-TGA	706	13 (1.84%)

Table 1: Number of routine echocardiograms with findings requiring intervention.

CONCLUSION: There is no benefit to annual follow-up echocardiography in asymptomatic patients with surgically corrected d-TGA IVS. There may be benefit to frequent echocardiography in patients with more complex anatomy.

ABSTRACTED FROM: Shivaram P, Padiyath A, Bai S, et al. Utility of Follow-Up Annual Echocardiograms in Patients With Complete Transposition of the Great Arteries After Arterial Switch Operations. American Journal of Cardiology 2018. amjcard.2018.08.044

COMMENTARY

Echocardiography remains the mainstay of paediatric cardiology follow-up for structural congenital heart defects. This study aims to shed some light on the necessity for the large volumes of echocardiograms that are performed on patients with repaired d-TGA.

The retrospective study conducted by Shivaram et al. was a well conducted review with a unique population of patients who were attending asymptotically for routine review following ASO to assess for complications that would require intervention.¹

Current recommended follow-up for d-TGA IVS includes echocardiograms at 1,3,6,12 months, annually thereafter during childhood and 2 yearly in adulthood.² This is

stark difference in comparison to what is recommended by this paper.

Follow-up guidelines thus far in this population have previously not been thoroughly researched. Current guidelines for follow-up were based on a paper from 2006, which published no data (nor any reference to any data) to establish the necessity of the guidelines it was recommending.³

This study provides evidence that routine echocardiography in uncomplicated d-TGA may be unnecessary, and reducing the frequency of follow-up echocardiograms or introducing risk stratification methods could safely save time and resources. With more complex d-TGA anatomy, which has an associated greater risk of complications, there is insufficient evidence at present to alter the current recommendation of annual echocardiograms.

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