

TRANSTHORACIC ECHOCARDIOGRAPHY GUIDANCE PERCTANEOUS PDA CLOSURE IN PEDIATRIC POPULATION

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BACKGROUND

Patent ductus arteriosus (PDA) is a common congenital cardiac lesion and the treatment of choice is transcatheter occlusion by device which is usually done under fluoroscopy guidance, with transesophageal echocardiography and transaortic imaging in adult patients.

In pediatric patients, transthoracic echocardiography (TTE) provide excellent images for PDA and may replace the use of fluoroscopy to guide PDA closure at least in certain situations.

AIM (OBJECTIVE)

To highlight the feasibility of device closure under guidance of TTE in order to be applied in sick patients (esp. neonate) which are not suitable to transfer to cardiac catheter laboratory or to those with contraindications to contrast and /or radiation applications.

METHOD

18 patients from July 2013 to May 2015 underwent TTE guidance device closure of PDA. Conscious sedation was used in 17 patients. One patient was sick and ventilated in the ICU. There were 11 female and 7 male. Antegrade approach was used in 8 patients with partial fluoroscopy, while Retrograde approach used in 10 patients without fluoroscopy.

RESULTS

Median age was 7 months (4-23 months), median weight was 8 kg (3.2kg-11kg), 2 patients with renal impairment, 2 patients with Leukemia , Median procedure time was 30 minutes (13-45 min.), median fluoroscopy was 2.2 minutes (0-13 min.) , PDA size were small in 13 and moderate in 5. Immediate successful closure was achieved in all. The Devices were ADOI, ADOS, ADOII, Occlutech PDA occluder, and AVP2.

One patient has device embolization after release of the device with retrograde approach. Successful retrieval under fluoroscopy was performed followed by deployment of larger device with complete closure.

CONCLUSION

Transcatheter PDA Device closure under transthoracic echocardiography guidance was feasible and recommended in selected patients and in certain situations, hoping that after overcoming the learning curve it could totally replace fluoroscopy.