DEVICE CLOSURE OF LARGE PERIMEMBRANOUS VENTRICULAR SEPTAL DEFECTS (MORE THAN 6 MM) USING THE LEPU MEMOPART SYMMETRIC MEMBRANOUS VSD OCCLUDER: SHORT AND MIDTERM RESULTS

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Aim:

The aim of this study is to evaluate the safety and efficacy of transcatheter device closure of moderate to large perimembranous ventricular septal defects 6 mm using LEPU MEMOPART SYMMETRIC MEMBRANOUS VSD OCCLUDER in pediatric patients at short and mid-term follow-up.

Materials and methods:

We prospectively studied 50 patients with large perimembranous VSDs (6mm) between August 2019 and May 2021 who underwent percutaneous closure at our centre. Transthoracic echocardiography (TTE) and electrocardiogram were done before and after the procedure. All patients were subjected to follow-up evaluation at 48 hours, 1, 3, 6, 12 months and annually thereafter with TTE and electrocardiogram.

Results:

A total of 50 patients (30 males and 20 females) underwent transcatheter closure of large perimembranous VSD 6mm. Mean age of patients was 26 months (range 5–180 months) and mean weight was 13.4 (range 5.3–28 kg). 25% had large PM VSD with inlet extension. The mean defect diameter on color flow mapping on TTE was 9.4 (7-14 mm) the pulmonary to systemic blood flow (Qp/Qs) was 2.1 (range 2.0 to 2.6). The device diameter ranged from 7-16 mm (median = 9 mm). The procedure was carried out successfully in 96% of patients with no reported mortality. Two patients with associated mild aortic valve prolapse developed mild aortic regurgitation so device could not be successfully deployed and referred for surgery. During the catheterization, there were only minor complications and at follow-up of 10 ± 5.1 (1-22 months), the closure rate was high of 96% and freedom from AV block was 100%. A minimal residual shunt seen as a thin streak on transthoracic color flow mapping persisted in 2 (4%) patients, which remained unchanged over a follow-up period. 5 (10%) patients had trivial AR and 8 (16%) patients had mild TR pre- procedure which did not worsen on follow up. Two

patients developed moderate TR which was mild TR pre-procedure not worsen on follow up. There were no other device related complications such as device migration, systemic thromboembolism, infective endocarditis, pericardial effusion or delayed conduction disturbances.

Conclusion:

The LEPU MEMOPART SYMMETRIC MEMBRANOUS VSD OCCLUDER offers excellent closure rates and low morbidity when used to close large Perimembranous VSDs. The device appears to be safe and effective in short and mid-term follow-up. Long term follow up is necessary to establish the effectiveness of these type of device in these particular subset of VSDs.