

## Symposium 5

### Pediatric mechanical circulatory support in children and patients with congenital heart disease

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### [ISPHLT-SY5-5] Long term results of pediatric mechanical circulatory support as bridge to transplant in severe heart failure pediatric patients

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The number of pediatric patients who need mechanical circulatory support (MCS) as bridge to transplant (BTT) has been increasing. VAD implantation for pediatric heart failure patients has been standard strategies waiting for heart transplantation. However, the shortage of donor is still one of the most important issues, and it is still challenging patients can spend long term of waiting period with MCS safely. In this study, we report long term results of pediatric ventricular assist devices as BTT in Japan. Single center retrospective study includes 40 pediatric patients who were implanted with ventricular assist devices as BTT for end stage heart failure since 2012 to 2020. Etiology of heart failure includes DCM (54.5%), RCM (27.3%), dHCM (4.5%) and others (13.6%). 27 patients were implanted with EXCOR and the other 13 patients were implanted with implantable devices. Overall survival and successful rate for heart transplantation (HTx), device related complications were analyzed. Median support period was 685 (45-1145) days. 22 (55%) patients underwent HTx and only 3 patients died due to device related adverse event. Median support period during waiting for HTx with VAD was 541.5 (45-1085) days. Freedom from CV events in patients with implantable devices was 75% at 6 months and 60% at 1 year. Freedom from driveline infection against which surgical intervention needed was 100% at 6 months and 75% at 1 year. 1 of 13 implantable device-patients developed aortic insufficiency, and underwent surgical closure of aortic valve. All the implantable patients discharge home and went back to school activities with VAD. On the other hand, Freedom from CV event in patients with EXCOR was 70% at 6 months and 1 year respectively. 4 of EXCOR-patients had cannula site infection and surgical interventions were necessary in two of them. Left ventricular function of 9 EXCOR-patients recovered after implantation of LVAD and they could be successfully weaned off the devices without recurrence of heart failure. Waiting time for HTx with ventricular assist device is quite long in Japan, however long term results of pediatric mechanical circulatory support as BTT is satisfactory.