ventricular assist devices (cf-LVADs) are most often implanted. In The Netherlands, duration on MCS has increased because of an increasing waiting list for heart transplantation due to lack of donor hearts. Consequently, experience is built on longer term support. We present the long term results from our hospital.
Purpose: To provide insight in long term mechanical circulatory support.
Methods: Of all patients (pts) who received MCS between March 2006 and January 2016, data were prospectively collected in a central database, including baseline clinical characteristics as well as complications defined according to INTERMACS. Data were extracted for statistical analysis.
Results: 203 cf-LVADs were implanted in our hospital. 67 pts were transplanted and 7 pts explanted. Actuarial survival at 5 years is 68% (figure 1).Death was most often caused by neurological complications and sepsis. Gastro-intestinal bleeding and intracerebral complications (hemorrhage and stroke) both occurred 0.15 times per patient year. Twenty-seven replacements were performed, most often due to pump thrombosis or technical defects.
Conclusion: MCS in patients with end-stage HF has a 5-year survival of 68%. It is a promising therapy that might be a good alternative for heart transplantation in selected patients. However, further optimization of the therapy as well as management of long term complications is required.

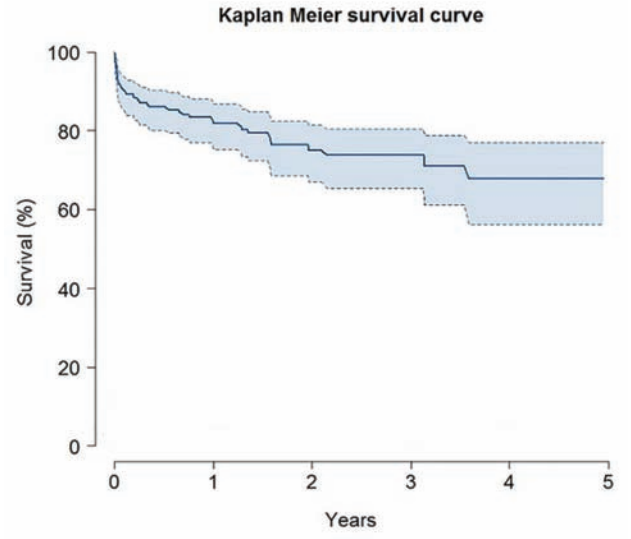

Figure 1. Kaplan Meier curve

P1602

Evolution of mitral regurgitation in Berlin Heart EXCOR LVAD patients less than 10kg

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Background: Left ventricular assist device (LVAD) is an important treatment option for bridging pediatric patients to heart transplant. LVAD allows left ventricular (LV) unloading with an improvement in mitral regurgitation (MR). However, a significant MR may persist in some patients with LVAD.
Purpose: The aim of this work is to evaluate the evolution of mitral regurgitation in pediatric patients less than 10Kg undergoing LVAD implantation.
Methods: Echocardiographic data of 15 pediatric patients less than 10Kg undergoing Berlin Heart EXCOR LVAD implantation were retrospectively collected before implantation and one, three and six months after LVAD to asses LV unloading and MR evolution.
Results: HF etiology was idiopathic dilated cardiomyopathy (79%) and non compacted LV myocardium (21%). Mean time of LVAD staying was 115.45 ± 84.33 days. The incidence of MR was in 8 patients at the baseline and 4 patients at the three and six months follow up. At the univariate analysis of patients with and without significant MR at the implantation, age, mitral valve annulus, left atrial size and vena contracta were predictive for residual significant MR after LVAD implantation. LV unloading provided by the LVAD was more evident till the first month follow-up and decreased at the three and six months follow up. Nine patients (60%) were successfully transplanted, two (13%) are still on LVAD and four (26%) died for major complication.
Conclusion: MR persistence is a possible complication also in pediatric LVAD recipient. The possibility of concomitant valve surgery is controversial, especially in low weight children. A patient-tailored LVAD setting optimization could potentially improve the haemodynamic benefits of LVAD and, in particular, LV unloading and MR.

Parameters	Baseline	1 month	3 months	6 months
Weight (Kg)	6.0 ± 1.9	6.5 ± 1.9	7.4 ± 2.0	7.9 ± 1.9
Left Atrium (mm)	25.4 ± 8.9	16.8 ± 3.7	19.4 ± 6.2	19.3 ± 5.8
Left Ventricular End Systolic Volume (ml)	46.5 ± 22.4	12.7 ± 10.4	24.3 ± 14.6	28.3 ± 17.3
Left Ventricular End Diastolic Volume (ml)	55.1 ± 23.2	18.9 ± 11.1	34.4 ± 17.6	40.6 ± 23.6
Mitral Valve Anulus (mm)	18.1 ± 6	15.3 ± 2.6	17.4 ± 5.4	18.6 ± 5.2
Vena Contacta (mm)	2.2 ± 0.9	1.9 ± 0.8	2.4 ± 1.0	3.0 ± 1.6
Right Ventricular Fractional Area Change	34.1 ± 9.7	34.1 ± 9.7	41.2 ± 13.6	36.0 ± 18.3

Evolution of echocardiographic parameters

P1605

Soluble ST2 levels in end-stage heart failure and during LVAD support

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Background: The interleukin 33 (IL-33)/supressor of tumorigenicity 2 (ST2) pathway might play an important role in the progression of heart failure (HF) and is related to cardiac fibrosis. Although the exact source of the ST2 protein is not clarified, increased serum levels (sST2) are associated with adverse outcome in HF. In this study sST2 measurements were performed sequentially in patients with end-stage heart failure, before and after LVAD support. Furthermore we analyzed whether sST2 levels during HF were related to clinical parameters. Method: Serial serum measurements of sST2 were performed in EDTA plasma prior to LVAD and 1, 3 and 6 months after LVAD-implantation in 38 patients, using the high-sensitive Presage ST2 assay. Several clinical factors were analyzed for their relation with sST2 levels.
Results: sST2 levels were significantly elevated in end-stage HF just before LVAD implantation (74.2 ng/ml (IQR 54.7 -116.9; normal < 30 ng/ml) and decreased substantially during LVAD support, to 29.5ng/ml (IQR 24.7-46.6)($p < 0.001$), normalizing in most patients. This normalization was complete at 3 months post-LVAD. The variation in sST2 levels at baseline could not be correlated to any of the clinical factors tested (gender, HF etiology, duration of HF, right ventricular function and renal function).
Conclusion: LVAD support results in a significant drop in sST2 levels with normalization within 3 months post implantation. This suggests that even in patients with end-stage HF, sST2 may be used as a biomarker to monitor therapy. The great variance in sST2 levels at baseline cannot be explained by differences in gender, HF etiology or duration, right ventricular function and renal function.

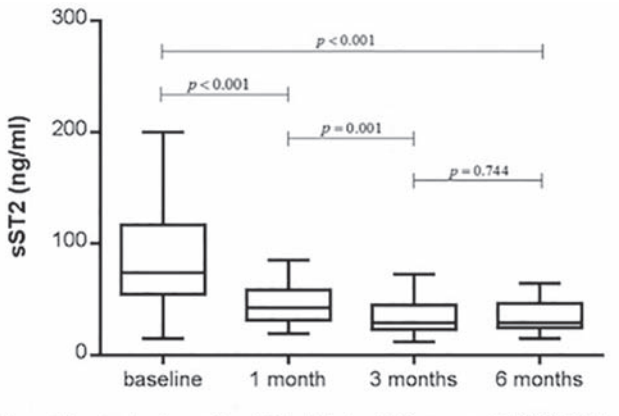

Figure 1. Boxplot showing median sST2 levels during LVAD support with IQR (25-75%), p <0.05 was considered significant.