

Ventricular assist device as a bridge to heart transplantation in children with an end-stage heart failure - own experience.

Chodor B., Przybylski R., Pacholewicz J., Pawlak S., Sliwka A., Lapa P., Grzybowski A., Wierzyk A., Bialkowski J.

Silesian Center for Heart Diseases, Zabrze, Poland

Introduction: Extremely high mortality in children awaiting heart transplantation (OHT) in numerous centers triggered the development of ventricular assist device (VAD) application program. The majority of potential heart transplant recipients develop severe circulatory failure requiring continuous catecholamine infusion and following VAD use.

Aim: Presentation of our own experience regarding VAD application in children with end-stage heart failure.

Material and methods: From November 2009 to December 2011 VAD was used as a bridge to heart transplant in 6 children. Their clinical records were analyzed retrospectively. There were 4 males and 2 females with average age of 10,25 (1,5 – 17) yrs old, average weight - 25,9 (8,2-54,0) kg. Every patient was diagnosed with dilated cardiomyopathy. In two of them VAD type Polcas-Religa (FRK, Zabrze, Poland) was used. One of them required left ventricle assist device (LVAD) and the second - biventricular assist device (BiVAD), Remaining four patients received Berlin-Heart (Mediproduct, GmbH, Berlin, Germany) LVAD. The mean assist time was 148 days (12 to 888 days). During the VAD therapy motoric rehabilitation was implemented.

Results: Significant body mass increase was observed during VAD application: mean-9,25 kg (range: 4-17kg) and improvement in general condition (motoric and psychological). In one patient with BiVAD major complications were observed - bleeding from the cannulas' site, ischemic stroke, systemic infection (sepsis). In four patients OHT was performed in our center. Mean time of VAD applications before OHT was 209 days. In three of them good outcome was observed. Mean follow-up after OHT is 281 days. One death occurred in early post-transplant period. In 2 children VAD is still used, they are awaiting a donor heart. In one patient after OHT standard biopsies show grade 3A ISHLT cellular rejection, which is treated according to the protocol.

Conclusions: Our preliminary observations confirm effectiveness of VAD application as a bridge to OHT in patients with end-stage heart failure. Improved clinical condition with body gain of children during VAD use facilitates subsequent OHT.