

Spanish Collaborative Group in Pediatric Ventricular Assisted Device: Experience with the Berlin Heart Excor

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Introduction: Ventricular Assisted Device (VAD) is an option in severe heart failure in pediatric patients as bridge to recovery or heart transplantation. Lengthy waiting lists are an issue in young patients, and long term devices need to be specifically evaluated in children, focused on avoiding complications, improving transplant survival or recovery without sequelae. Here we review our national experience with the Berlin Heart (BH) Excor Pediatric Device.

Methods: From 2006 to January 2011 all patients and all institutions with implants, 5 public Spanish children's hospitals, enrolled in a collaborative group.

Results: 22 patients from 1 month to 15 years age (mean 3,1 year), 9 (41%) infants, with a weight from 3,5 to 60 kg (mean 14,8 kg), with 12(55%) less than 10 kg were included. 16 (73%) were cardiomyopathies (4 myocarditis) and 6 (27%) postoperative congenital heart disease (4 univentricular with 2Fontan, 1 Shone Syndrome and 1 ALCAPA). ECMO was previously used in 11 (50%) with a mean duration of 10 days (range 2 to 17). 1 patient was assisted with Levitronix VAD previously. Left VAD was the initial assistance in 13 (59%) and in 2 of them switch to BiVAD. Atrial cannulation was required in 2 cases (9%) and transitory interposition of an oxygenator in one. Mean duration of assistance was 61 days (median of 36 days and range of 7days to 7 months). The complications found were: severe hemorrhagic (50%), thromboembolic (18%), infectious (36%), neurologic (45%), thrombus and replacement device (18%). 13 patients (59%) were transplanted, 8 (36%) death. Higher death rate were found in structural disease (3/6=50%) and previous ECMO (5/12= 63%). One patient continues with the VAD. Explantation due to recovery was not achieved. Finally 12 patients were discharged from ICU and 11 (50% from total and 84% post transplant) survived.

Conclusion: In our collaborative experience BH is a VAD that provides medium-to long-term support in infants and children as bridge to heart transplant, with posterior high survival. Complications and death during the assistance remain an issue, especially in structural heart disease and previous ECMO patients.