

Retrospective Analysis of Thrombosis and Bleeding Events in the Children with implanted Ventricular Assist Device

Ulger Z.(1), Elibol P.(1), Karapinar D.Y.(2), Engin C.(3)

Ege University Department of Pediatric Cardiology, Izmir, Turkey(1); Ege University Department of Pediatric Hematology, Izmir, Turkey(2); Ege University Department of Cardiovascular Surgery, Izmir, Turkey(3)

Introduction and objectives: When the drug therapies do not work in the heart failure, mechanical support like ventricular assist devices are used. They improve quality of life, reduce the hospital stay and provide bridging heart transplantation safely. The aim of this study is to evaluate the bleeding/thrombosis complications in our left ventricle assist device implanted patients.

Methods: The left ventricle assist device implanted children who are followed up between June 2009-August 2018 were enrolled for the study. Patients were evaluated retrospectively using their demographic datas, preimplantation characteristics and especially bleeding/ thrombosis complications.

Results: Participants were twenty-six children who are aged under eighteen years; they are divided into two groups. One group has the patients to whom Berlin Heart Excor pulsatile assist device was implanted; the other group has the patients to whom HeartWare continuous assist device was implanted. 57.5% participants (n=15) were male, 42.3% were female (n=11). Median age was 185.0 months (min 28-max 295 months). All the subjects were diagnosed as dilated cardiomyopathy. 10 of them (38.5%) had underlying diseases which were glycogen storage disease type IV(n=1; 3.8%), Becker muscular dystrophy (n=2; 7.7%), non-compaction cardiomyopathy (n=4; 15.4%), transposition of great arteries (n=1; 3.8%) and arrhythmogenic right ventricular dysplasia (n=2; 7.7%). 14/26 had thrombosis event at least once; whether critical or not (53.8%); 8/26 had bleeding event at least once; whether life-threatening or not (30.8%). 10 out of 26 never had an event. 32 important events recorded as 34.6% pump thrombosis, 30.8% stroke, 11.5% intracranial bleeding, 3.1% MI and 6.2% intraventricular thrombosis. 16 events were not life threatening (33.3%). Statistically difference is not found between two device groups according to complications ($p=0.199$).

Conclusion: The results cannot be generalized in consequence of unequal dispersion of the groups. Nearly the same outcomes are obtained compared to other multi centered studies. To lessen the complications as thrombosis and bleeding, yet there is not a consensus used for the management of pediatric ventricular assist device implanted children. In order to balance status between bleeding and thrombosis the personal characteristics of patients should be well known, drug doses should be followed closely.