

**OUTCOMES OF CARDIAC PACING IN THE ADULT FONTAN POPULATION**

Moderated Poster Contributions

Congenital Heart Disease and Pulmonary Hypertension Moderated Poster Theater, Poster Hall, Hall C
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Session Title: Things That Matter in Adult Congenital Heart Disease

Abstract Category: 9. Congenital Heart Disease: Adult

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Authors: *Geoffrey Huntley, Heidi Connolly, Sameh M. Said, Carole Warnes, Christopher McLeod, Alexander C. Egbe, Mayo Clinic, Rochester, MN, USA***Background:** Cardiac pacing can be challenging after a Fontan operation, and there are limited data about pacing in adults with Fontan palliation.**Methods:** A retrospective review of adult Fontan patients followed at Mayo Clinic between 1994 and 2014 was conducted in order to determine the risk factors for pacing and occurrence of device-related complications (DRC) and pacemaker reinterventions. DRC was defined as lead failure, lead recall, lead thrombus/vegetation, or device related infection. Cardiovascular adverse event (CAE) was defined as venous thrombosis, stroke, death, or heart transplant.**Results:** Out of 439 adult Fontan patients, 166 (38%) required pacing (79 and 87 had pacemaker implantation in childhood and adulthood, respectively). At initial implantation, 114 patients (69%) received epicardial leads, and 52 patients (31%) received endocardial leads. Initial pacing mode was atrial (n=52, 31%), ventricular (n=30, 18%), and dual chamber (n=84, 51%). Risk factors for pacing included atrial arrhythmia (hazard ratio [HR] 2.21, 95% confidence interval [CI] 1.33-5.11, $P=0.04$) and reoperation (HR 1.98, CI 1.16-6.12, $P=0.02$). There were 129 reinterventions (lead failure 39, lead recall 6, generator change 62, defibrillator upgrade 4, cardiac surgery 18). Excluding generator changes, the reintervention rate was 3.3% per year. There were 48 DRCs (lead failure 31, lead recall 6, lead thrombus/vegetation 5, and infection 6), yielding a DRC rate of 2.4% per year. Pacemaker implantation in childhood was a risk factor for DRC (HR 2.01, CI 1.22-5.63, $P=0.03$). There were 70 CAE (venous thrombosis 5, stroke 11, transplant 8, and death 46), yielding a rate of 3.5% per year. DRC, CAE, and reintervention rates were comparable between epicardial and endocardial leads.**Conclusions:** More than one-third of adult Fontan patients referred to the Mayo Clinic required pacing. Atrial arrhythmias and reoperations were risk factors for pacemaker implantation. Outcomes of epicardial and endocardial leads were comparable.