

Improving Results of Heart Transplantation for the failing Fontan

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Background: The mortality of patients undergoing heart transplantation for the failing Fontan has been reported to range from 10% to 50%. We noted that the results at our institution appeared to have improved with earlier referral of patients. The purpose of this review is to evaluate the outcome of recent patients undergoing heart transplantation after a failed Fontan and compare those findings to earlier results.

Methods: Of 260 patients undergoing heart transplantation at our institution from 1990 – 2016, 37 had a failed Fontan as an indication for operation. Twenty-one were status-post primary Fontan, 15 were status-post Fontan conversion (7) or revision (8), and 1 was post Fontan takedown. Mean age at the first Fontan was 5.4 ± 5 years, mean age at transplant was 14.2 ± 10 years. Interval from first Fontan to transplant was 8.7 ± 7.1 years. The patients were divided into two groups: those operated on between 1990 – 2011 (Group 1) and those operated on from 2012 – 2016 (Group 2).

Results: There were 18 patients in Group 1 and 19 patients in Group 2. The mean age at heart transplantation in Group 1 was 16.7 ± 12.6 , in Group 2 it was 11.9 ± 7.4 , $p = 0.04$. The median number of prior operations in both groups was 4. Cardiopulmonary bypass times were similar in Group 1 (299 ± 70 minutes) versus Group 2 (273 ± 55 minutes; $p=0.35$). However, ischemia time was longer in Group 2 with ischemia time in Group 1 being 174 ± 54 minutes and ischemia time in Group 2 being 214 ± 80 minutes ($p=0.03$). There were 5 operative mortalities in Group 1 and 3 late deaths. There have been no operative mortalities or late deaths in Group 2 ($p = 0.01$).

Conclusion: The operative mortality of heart transplantation for a failing Fontan was previously reported to be quite high. In the recent era with earlier referral of these patients for heart transplantation the mortality has been substantially improved. Earlier referral of patients with a failing Fontan improves the outcomes for this difficult group of patients.