

Primary Graft Dysfunction after Pediatric Heart Transplant: A Single Center Experience

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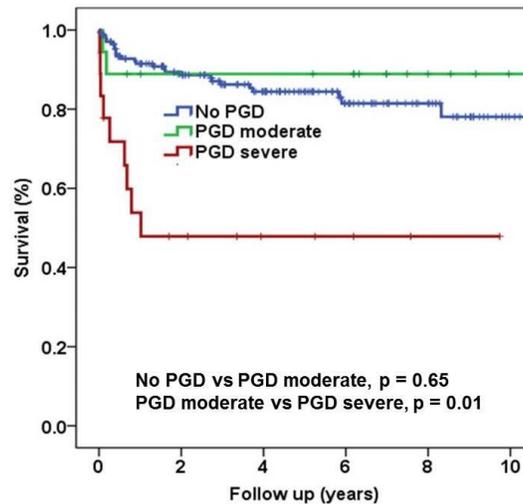
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Background: Primary graft dysfunction (PGD) is a complication after heart transplantation (OHT) and a significant cause of mortality, particularly in infant recipients. Lack of standardized definition of PGD in the pediatric population makes the prevalence and impact unclear.

Methods: ISHLT PGD consensus guidelines, which include inotrope scores and need for mechanical circulatory support (MCS), were applied to 208 pediatric OHT recipients from 1/2005- 5/2016. PGD was defined as: moderate PGD – inotrope score >10 on post-operative day 1 (24-48 hours), and severe PGD - MCS within 24 hours (in the absence of detectable rejection).

Results: PGD occurred in 36 patients (17%); 18 of which had severe PGD (8.5%). Multivariate risk factors for PGD included a positive crossmatch (PCM) (OR 7.23, 95% 1.9:29.8, $p < 0.01$) and cardiopulmonary bypass time (CPBT) (OR 10.13/10 min, 95% 10.05:10.2, $p < 0.01$), but not age, weight, ischemic time, or primary diagnosis. Risk factors for severe PGD also included PCM (OR 7.87, 95% 1.26:55.4, $p = 0.03$) and CPBT (OR 10.3/10 min, 95% 10.05:10.2, $p = 0.03$). Patients with PGD had decreased overall survival (69% vs 85%, $p = 0.03$), with lowest survival in the severe PGD cohort (50%). Survival was comparable between moderate PGD and those without PGD (89% vs 85%, $p = 0.65$). Patients with PGD vs no PGD had a longer hospital stay (mean 34 vs 10 days, $p < 0.01$); which was also the true when moderate PGD was compared to no PGD (mean 29 vs 10 days, $p = 0.013$).

Conclusion: In the current era, infants do not have increased risk of PGD. Need for MCS, but not high dose inotropes, is associated with increased mortality.



Patients at risk

No PGD	122	87	51	29	6
PGD moderate	11	11	10	4	3
PGD severe	7	4	3	3	2

Figure 1: Kaplan Meier Survival Analysis Stratified by Moderate^a and Severe^b Primary Graft Dysfunction.

^a Per ISHLT consensus guidelines, moderate PGD defined as Inotrope Score >10. (Inotrope score = dopamine (×1) + dobutamine (×1) + amrinone (×1) + milrinone (×15) + epinephrine (×100) + norepinephrine (×100) with each drug dosed in µg/kg/min)

^b Per ISHLT consensus guidelines, severe PGD defined as need for mechanical circulatory support