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

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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=0.65), 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.
**Figure 1:** Kaplan Meier Survival Analysis Stratified by Moderate\textsuperscript{a} and Severe\textsuperscript{b} Primary Graft Dysfunction.

\textsuperscript{a} Per ISHLT consensus guidelines, moderate PGD defined as Inotrope Score >10. (Inotrope score = dopamine (\times 1) + dobutamine (\times 1) + amrinone (\times 1) + milrinone (\times 15) + epinephrine (\times 100) + norepinephrine (\times 100) with each drug dosed in \( \mu g/kg/min \))

\textsuperscript{b} Per ISHLT consensus guidelines, severe PGD defined as need for mechanical circulatory support