



## Congenital Heart Disease

### POST OPERATIVE INHALED NITRIC OXIDE USE AND EARLY OUTCOMES AFTER FONTAN SURGERY COMPLETION

Poster Contributions  
Posters Hall\_Hall A  
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**Background:** Prolonged length of hospital stay (PLOS) is associated with higher mortality and complications after cardiac surgery. One of the risk factors of PLOS after Fontan is high mean pulmonary artery pressure. Inhaled nitric oxide (iNO) is a potent pulmonary vasodilator frequently used in the perioperative period. In December 2017, as part of a quality improvement (QI) initiative, we started a protocol including the routine use of iNO in the first 24 hours after Fontan surgery. We aim to compare early post-operative outcomes before and after this protocol.

**Methods:** Sixty patients who had Fontan palliation from June 2015 to August 2019 were retrospectively reviewed. First 30 patients (Group 1) were prior to the routine use of iNO. The other 30 patients (Group 2) received iNO per protocol. Baseline demographic, anatomical description, hemodynamics and outcomes were compared.

**Results:** Both groups had similar demographic and clinical characteristics. Most patients had hypoplastic left heart variant (55%). All patients had extracardiac Fontan. In Group 1, 5 (16%) had fenestration vs 18 (60%) in Group 2. Pre-Fontan hemodynamics were similar in both groups ( $p=0.3$ ) with median Glenn pressure of 12 (11, 14) vs 11 (10, 13) mmHg; ventricular end diastolic pressure of 9 (7, 19) vs 10 (8, 11) mmHg; transpulmonary gradient 4 (3, 5) vs 4 (3, 4) mmHg and systemic saturation of 84% (80, 85) vs 83% (81, 84) in Group 1 and 2, respectively. Both groups had a median length of stay of 12 days, and length of chest tube placement of 7 days. There was no difference in major complications ( $p=0.6$ ); each group had 1 cardiac arrest, 3 with arrhythmia requiring intervention and 1 delayed sternal closure. Nine patients in each group had unplanned cardiac catheterization before discharge. Six (20%) in Group 1 vs 5 (17%) in Group 2 had pleural effusion requiring new chest tube placement. In Group 2, 1 had chest exploration for bleeding and 1 for left pulmonary artery thrombectomy. Readmission within 1 month occurred in 3 (10%) in Group 1 vs 4 (13%) in Group 2 ( $p=0.5$ ).

**Conclusion:** The routine use of iNO in early post-operative period did not reduce length of stay, chest tube duration, rate of complications, unplanned cardiac catheterization or surgery.