Introduction: Ductal stenting has emerged as a non-surgical alternative to surgical aorto-pulmonary shunt in patients with duct-dependent or decreased pulmonary blood flow. This study reports our experience with duct stenting in 68 patients with functional univentricular heart (FUH).

Method: We retrospectively analyzed 68 infants who had FUH in 136 patients underwent cardiac catheterization for duct stenting in our institute between 2004 and 2014.

Results: Median age was 20 days (3 days–8 months) and median weight was 3.4 (2.7 – 6.8) kg in 68 patients. 26 had pulmonary atresia with intact ventricular septum, 15 had tricuspid atresia or severe hypoplasia, 10 had unbalanced complete AVSD, 10 had double/single inlet ventricle and 7 had miscellaneous type of FUH. Ductus was arising from descending aorta in 43, arcus aorta, (vertical) in 16, innominate artery (atypical) in 6 and bilateral in 3. Implantation was successful in 66 of 68 (97%), unsuccessful due to acute ductal constriction in two. Implantation performed retrograde in 53, antegrade in 11 and both (bilateral duct stenting) in one. Oxygen saturation increased from 70±7.6% to 87±4.6%, immediate after the procedure. In one patient stent was migrated to descending aorta and underwent to surgery. One patient died after successful stent implantation probably due to pulmonary overflow. The follow-up period ranged from 3 months to 10 years (median 64 months). 48 infants reached to Glenn anastomosis without surgical intervention. Fontan completion was achieved in 19 of them. However, aorto-pulmonary shunt was required in 11 infants after 3 days to 7 months of the procedure, 2 were lost to follow up. Three patients died without intervention 4 days-6 months later during follow-up. The deaths were not related to the procedure. Stent redilation was performed in 14 patients due to decreasing of oxygen saturation in 3 to 10 months.

Conclusion: Stenting of the duct in infants with FUH is effective and safe alternative option as a bridge to second stage palliation. Mortality rate is comparable even better to conventional surgical shunt in FUH. Additional advantages of duct stenting to surgery are shortening hospital stay, eliminating problems of thoracotomy and reducing the number of operations.