

THE EXPERIENCE OF 120 NORWOOD OPERATIONS IN THE CHILDREN'S HOSPITAL No.1 IN ST. PETERSBURG, RUSSIA

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Introduction: Children's City Hospital № 1 St. Petersburg has the largest experience in the treatment of patients with HLHS in the Russian Federation. The highest mortality observed after first stage of multi-stage treatment of hypoplastic left heart. One of the main causes of postoperative complications which can lead to unsatisfactory results is unbalanced hemodynamic, which directly depends on the modification of this operation.

Objective: The aim of our study was to analyze the evolution in the use of various techniques Norwood procedures and its results.

Methods: In cardiac surgery department of Children's hospital in St. Petersburg from 1996 to 2012 carried out 120 Norwood procedures. All operations was performed with using a cardiopulmonary bypass, cardioplegia, hypothermia and circulatory arrest. Mean patients age at surgery was 2.5 days (from 2 to 8 days).

Norwood procedure was performed in the following modifications:

- 1) reconstruction of the aorta with patch graft and modified BT-shunt (Gore-Tex),
- 2) reconstruction of the aorta with patch graft and Sano shunt,
- 3) reconstruction of the aorta by direct anastomosis (R. Mee) and the BT-shunt ,
- 4) R. Mee modification and Sano shunt with Gore-Tex,
- 5) modification of R. Mee procedure and Sano shunt by using valved homograft.

Results: Overall mortality was 20%. The second stage was performed in 85 patients and third stage – in 30.

Conclusion: When performing operations using the system-pulmonary shunt complications in the postoperative period, usually were associated with hemodynamic imbalance. Using this technique required a short period of time of perfusion and circulatory arrest. Postoperative complications in modification Sano group, in large part was associated with heart failure due to myocardial injury of single ventricle. Despite the lack of mortality in this group, it was marked by long duration stay in the ICU, which was caused by myocardial trauma, but hemodynamics in the presence of valves in the pulmonary circulation created a more manageable system of circulation in general.