Surgical vs Percutaneous closure of PDA: How is the condition in preterms<2 kg


Erciyes University School of Medicine, Division of Pediatric Cardiology, Kayseri, Turkey(1), Erciyes University School of Medicine, Division of Cardiovascular Surgery, Kayseri, Turkey (2), Erciyes University School of Medicine, Division of Neonatology, Kayseri, Turkey (3)

Background and Aim:
There is no doubt about that symptomatic PDA should be treated as soon as possible but treatment method in preterms is a highly controversial topic. For long years it was used to be known as surgical ligation is the definitive treatment. As new devices come into the market, percutaneous techniques improve and interventionalists become more experienced; percutaneous closure gets more common in preterms.

In this study we aimed to compare efficacy and safety of PDA closure surgically versus transcatheter method in preterms less than 2 kg. Best of our knowledge this study is the first one that compares outcomes of surgery and percutaneous PDA closure in preterms.

Material and Method:
Between the dates July 1997 to October 2014 in our center PDA of 18 patients less than 2kg were closed percutaneously and 29 patients less than 2kg operated. A comparison was made between the data of the patients whose PDA were closed percutaneously (GroupA) and surgically (groupB)

Results:
The median patient age was 32 days, in groupA and 31 days in groupB. The median weight of the patients in groupA was 1603 gr and 1288 gr in groupB. The mean PDA diameter in percutaneous group was 2.8 ± 0.91 mm and 2.95 ± 0.45 mm in surgery group.

There was no statistically significance between 2 groups in terms of age, defect size and additional heart defects. Only weight of patients in percutaneous PDA closure group was significantly more than the surgery group (p: 0.004). Mean gestational age of the patients in groupA was 30 ± 1.8 weeks, in groupB was 28.6 ± 3.5 weeks. In groupA; all cases were closed successfully except one, having large window type PDA which was sent to surgery. There were no major complications reported. Left pulmonary arterial stenosis was detected in 4 patients which were all resolved in 6 months duration.

In groupB 2 major complications like: pneumomediastinum and chylothorax but no minor complications were reported. There was no statistically significance between complication and success rates between two groups.

Conclusion:
Percutaneous PDA closure is the candidate for taking the place of surgery in preterms. However, not applied routinely; can only be done in fully equipped large centers by experienced interventionalists.