

Effectiveness of Intraoperative Heparinization in Neonatal and Pediatric Patients with Congenital Heart Diseases: Focus in Heparin Resistance

Authors : Karakhalis N. B.

Abstract : This study aimed to determine the prevalence of heparin resistance among cardiac surgical pediatric and neonatal patients and identify associated risk factors. **Materials and Methods:** The study included 306 pediatric and neonatal patients undergoing on-pump cardiac surgery. Patients whose activated clotting time (ACT) targets were achieved after the first administration of heparin formed the 1st group (n=280); the 2nd group (n=26) included patients with heparin resistance. The initial assessment of the haemostasiological profile included determining the PT, aPPT, FG, AT III activity, and INR. Intraoperative control of heparinization was carried out with a definition of ACT using a kaolin activator. A weight-associated protocol at the rate of 300 U/kg with target values of ACT >480 sec was used for intraoperative heparinization. **Results:** The heparin resistance was verified in 8.5% of patients included in the study. Repeated heparin administration at the maximum dose of ≥ 600 U/kg is required in 80.77% of cases. Despite additional heparinization, 19.23% of patients had FFP infusion. There was reduced antithrombin activity in the heparin resistance group ($p=0.01$). Most patients with heparin resistance (57.7%) were pretreated with low molecular weight heparins during the preoperative period. **Conclusion:** Determining the initial level of antithrombin activity can predict the risk of developing heparin resistance. The factor analysis verified hidden risk factors for heparin resistance to the heparin pretreatment, chronic hypoxia, and chronic heart failure.

Keywords : congenital heart disease, heparin, antithrombin, activated clotting time, heparin resistance

Conference Title : ICCCS 2023 : International Conference on Cardiology and Cardiac Surgery

Conference Location : Dubai, United Arab Emirates

Conference Dates : December 25-26, 2023