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Correlation Between Pediatric Open Heart Surgery Outcomes and Arterial-mixed Venous Oxygen Saturation Differences

Mahmood Samadi[1], Majid Malaki[2*], Shamsi Ghaffari[3] , Roza Golshan Khalili[3]

[1]*Department of Pediatric Cardiology, Cardiovascular Research Center, Tabriz University of Medical Sciences, Tabriz, Iran*
[2]*Pediatric Health Research Center, Tabriz University of Medical Sciences, Tabriz , Iran*
[3]*Department of Pediatric Nephrology, Tabriz Children Hospital, Tabriz University of Medical Sciences, Tabriz, Iran*

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ABSTRAT

Introduction: Low Cardiac Output Syndrome (LCOS) contributes to postoperative morbidity and mortality. This article tries to find a predictive factor to interpret outcome after cardiac operation. **Methods**: In a cross-sectional study, 100 children with congenital heart disease undergoing cardiovascular surgery with cardiopulmonary bypass (CPB) without significant left-to-right shunt were selected. Arterial and central venous oxygen saturation values were measured via blood samples simultaneously obtained in 6-hr intervals for a total of 24-hr during postoperative period at hours 0, 6, 12, 18, and 24. Postoperative ventilation support (intubation period) and cardiovascular support were also obtained from the hospital records. Statistical analysis was later performed comparing the arterial-mixed venous oxygen saturation differences and durations of required ventilatory and cardiovascular support, both for the complicated and non-complicated patient groups. The data was processed with correlation Pearson and Mann-Whitney U tests in SPSS 15 software, *P* less than 0.05 was significant. **Results**: Mortality following cardiac operation is 6% and complications may happen in 45% of the cases. The highest Arterial-mixed venous oxygen saturation difference occurred immediately post operation (up to 57%). These measures were high up to 18 hours in complicated and non-complicated groups (36% vs. 31%) ($P< 0.05$). This factor cannot predict prolongation of intubation period in patients ($P > 0.05$). **Conclusion**: Arterial-mixed venous oxygen saturation difference may be high as much as 57% or as low as 23%.These different measures, being higher up to 18 hours in complicated to non-complicated groups after 18 hours, can be related to tissue ischemia during surgery and cannot be discriminative.

***Corresponding author:** Majid Malaki , E-mail: Madjidmalaki@gmail.com