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Interstage-Monitoring of patients with shunt dependent lung perfusion in view of the ventricular type and in context of Interstage-Mortality

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Introduction

Interstage-Monitoring is a surveillance program that can help to detect vulnerable patients after shunt implantation. In comparison of patients with univentricular heart of the right and left ventricular type and biventricular heart there might be a difference in the appearance of unexpected complications such as weight faltering, deviations of the desired oxygen saturation and acute shunt occlusion.

Methods

Retrospective analysis of patient data (such as demographic data, data regarding the perioperative period, shunt type, monitoring parameters, monitoring events, laboratory parameters) in 59 patients who had shunt dependent pulmonary perfusion.

Results

Interstage-Monitoring can help to detect signs of shunt complications. There is a specifically vulnerable group in the study population: patients with a univentricular heart of right ventricular type. In comparison to patients with a univentricular heart of left ventricular type or a biventricular heart, these patients had a shorter Interstage-period in total ($p = 0,001$, $\alpha = 0,05$), since their discharge from the hospital was delayed due to a more complex postoperative course and longer stay on intensive care. There was a significant difference between the groups according to their NT-proBNP levels at the end of the interstage period ($p = 0.038$, $\alpha = 0.05$). Differences of oxygen saturation and body weight were not significant. Mortality occurred only in the group of patients with a univentricular heart of the right type and in the early stage of the Interstage-Monitoring.

Conclusion

Patients with a univentricular heart of the right type have higher complications and mortality risk during the interstage period, but Interstage-Monitoring is an effective surveillance program and can reduce Interstage-Mortality. The relevance of NT-proBNP as a marker for risk stratification needs further investigation but correlates with the risk level.