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Primary Repair of Common Arterial Trunk: Is It Safe After Four Months of Age?

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Introduction

Repair of common arterial trunk (CAT) is usually performed before 4 months of age. Late repair has been associated with unfavorable outcome. However, limited contemporary data support this finding. We assessed short-term outcome after CAT repair beyond 4 months of age, and investigated risk factors for poor outcome.

Methods

All patients undergoing CAT repair beyond ("late") 4 months of age (oversea referrals) from 1995 to 2015 were included.

Early Outcomes and potential risk factors for prolonged intensive care unit (ICU) stay (>7 days) and treated post-operative pulmonary hypertension (PAH) (NO and/or other PAH-specific therapies) were assessed by means of logistic regression.

As a reference-value for CAT normal early outcome, results of concomitant regular age repair (before ("early") 4 months of age) were used.

Results

Patients "late" (n=34) presenting had at median age of 10 months (range 4m.-11y.). Preoperatively, median arterial oxygen saturation (SaO₂) was 90% (range 75-96%) and pulmonary vascular resistances (PVR) (n=10, 29%) 8.9 WU (range 3.8 - 19.2 WU). A valved conduit for right ventricular outflow tract reconstruction and complete closure of all septal defects were performed in all patients n=34 (100%).

When juxtaposed to "early" repair (n=132) results, "late" repair patients did not demonstrate any difference in mortality and postoperative PAH rates, while ICU and ventilation time were significantly shorter in this group.

In multivariate analysis, age at surgery, preoperative PVR and catheterization were not predictor for mortality, postoperative PAH, or prolonged ICU stay. SaO₂ was a significant predictor for postoperative PAH and prolonged ICU stay, respectively (OR=0.85, 95%CI 0.72-0.99, p=0.04) (OR=0.84, 95%CI 0.73-0.97, p=0.02).

Survival after hospital discharge was 100% (median follow up time 2.2 years, 62% complete).

Conclusion

Early timing for CAT repair should not be revised given the naturally-selected character of the studied cohort.

For these patients, late repair is feasible without increased/prohibitive morbidity and mortality rates. Preoperative SaO₂, as main predictor for adverse outcome, is pivotal-decisive for operability assessment.

PVR can be reliably estimated by SaO₂.