

**Improvement of early postoperative outcome after total cavopulmonary connection by early extubation strategy**

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**Objectives:** Short cardiopulmonary bypass time and short duration of mechanical ventilation are important aspects of optimizing the early postoperative course after total cavopulmonary connection. In our study, we investigated the influence of early postoperative extubation strategy in our cohort of Fontan patients during the past two decades.

**Methods:** We performed a retrospective study including 249 consecutive patients who were selected for total cavopulmonary connection in our institution from 1995-2017. Early postoperative course was evaluated by analysis of early postoperative hemodynamic parameters and early outcome after surgery in terms of mortality and length of hospital stay. For analysis, the patient cohort was subdivided into a "fast-track" extubation group (<6 hours ventilation, n=87) and a prolonged ventilation group (>6 hours ventilation, n=162) and outcome was compared according to preoperative patient's characteristics, duration of cardiopulmonary bypass and duration of mechanical ventilation.

**Results:** Duration cardiopulmonary bypass did not correlate with duration of mechanical ventilation ( $p=0.1$ ), was not associated with length of hospital stay in univariate analysis ( $p=0.13$ ) and did not differ between both groups ( $p=0.5$ ). Fontan patients in the fast-track group had significantly improved early postoperative hemodynamics with higher arterial pressure and lower pulmonary artery pressure at 6, 24 and 48 hours postoperatively ( $p=0.02-0.005$ ). In multivariable analysis, longer mechanical ventilation was independently associated with length of hospital stay.

**Conclusions:** Early weaning from mechanical ventilation results in improved early Fontan hemodynamics while early outcome is unrelated to duration of cardiopulmonary bypass indicating that early extubation is an important strategy for improving early results after Fontan.