

### Outcomes and prognosis of Total Cavopulmonary Connection performed at adult age

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**Purpose :** The aim of this study was to investigate the clinical features, assess the clinical course and outcomes, and identify predictive factors for mortality in patients undergoing total cavopulmonary connection (TCPC) at adulthood.

**Methods:** Single center retrospective analysis of all patients who underwent TCPC at 18 years of age or older, between 1990 and 2015. Patients were classified according to a previous atrio-pulmonary connection (TCPC-Conv group), previous palliative surgery (TCPC-Pall group) or absence of previous surgery or bidirectional Glenn anastomosis only (TCPC-NoPall group). Vital status, clinical events during follow up, functional status at last medical visit and quality of life were recorded.

**Results:** Thirty five adult patients underwent total cavo-pulmonary connection, 19 in TCPC-Pall group, 7 in TCPC-NoPall group, 9 in TCPC-Conv group. Median follow up was  $7\pm 6,7$  years. Actual survival was 80, 73,2 and 68,3% at respectively 1, 5 and 10 years. There was no significant difference in mortality between surgical groups (22% in TCPC-Conv, 14% in TCPC-NoPall, 42% in TCPC-Pall,  $p=0,3$ ). Early mortality was 17%. Mortality was significantly higher in patients in which a fenestration was performed at the time of surgery (100% vs. 22,5%,  $p=0,005$ ) and albumin blood levels at last follow up was significantly lower among deceased patients (mean 31.3 g/l versus 41.9 g/l,  $p= 0.04$ ). TCPC resulted in mean NYHA improvement in every groups (TCPC-Conv:  $2,5\pm 0,5$  vs.  $1,5\pm 0,8$   $p=0,01$ ; TCPC-NoPall:  $2,7\pm 0,7$  vs.  $1,7\pm 0,9$   $p=0,004$ ; TCPC-Pall:  $2,6\pm 0,6$  vs.  $1,9\pm 0,8$   $p=0,02$ ). The frequency of arrhythmia episodes decreased from 60.6% to 22.2% at latest follow-up ( $p= 0.5$ ), but preoperative PLE in conversion group did not resolved.

**Conclusion:** Total cavo-pulmonary connection in adults can provide a benefit in long-term survival and symptoms improvement in selected patients. However high postoperative mortality may lead to renunciation or foreseeing postoperative care in high-risk patients as fenestration did not improve outcome