**Relation of quality of life, exercise capacity, and ventricular function in adults with repaired tetralogy of Fallot**


Cardiac Children’s Foundation, Taiwan(1), Department of Pediatrics, National Taiwan University Hospital, Taipei, Taiwan.(2), Department of Psychiatry National Taiwan University Hospital, Taipei, Taiwan.(3), Department of Surgery National Taiwan University Hospital, Taipei, Taiwan.(4)

**Introduction**

Tetralogy of Fallot is the most common cyanotic congenital heart disease all over the world. Although early postoperative survival was excellent, patients with repaired tetralogy of Fallot (rTOF) were at risk for long-term complications related to heart failure and arrhythmia. In National Taiwan University Hospital, the long-term survival rates for rTOF was 95.8%, 92.7%, and 90.5% at 10-year, 20-year, and 30-year after surgical correction. Aside from cardiac mortality as the major cause of late deaths (52%), we found that unnatural deaths, including suicide, accounted for 26% of late deaths, and was significantly higher than that of the general Taiwanese population. This finding highlights the potential threat of psychosocial problems in this patient population.

**Methods**

From the database of National Taiwan University Hospital, quality of life (QoL) was assessed in 144 adults with rTOF, and 138 of them (age: 31.4±10.1 years, male: 46%) had valid data for further analysis. Compared to the general population, rTOF had generally lowered QoL scores in physical and psychological domains (P < 0.001 and P = 0.024, respectively). In contrast, QoL in environmental domain was better in rTOF (P = 0.003).

**Results**

Among these patients, 92 received cardiopulmonary exercise test (CPX) immediately after the assessment of QoL. Patients’ self-estimated exercise capacity before CPX correlated well with overall QoL satisfaction (r = 0.659, P < 0.001) as well as physical QoL Z score (r = 0.518, P < 0.001). However, all these measures failed to predict actual exercise capacity as evaluated by peak oxygen consumption. Furthermore, we found that QoL had no relationship with either right or left ventricular function (end-diastolic volume, end-systolic volume, and ejection fraction) as assessed by cardiac magnetic resonance imaging in a subset of patients (n = 78).

**Conclusions**

Therefore, self-reported QoL and physical functioning poorly predicts actual exercise performance or ventricular function in patients with rTOF. Although QoL should be incorporated in the evaluation of patients’ functional performance late after TOF repair, objective measurements of exercise and ventricular function remain essential and mandatory for decision making in the clinical follow-up of rTOF patients.