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Titel des Beitrags: Peak oxygen uptake, ventilatory efficiency and QRS-duration predict event free survival in patients late after surgical repair of tetralogy of Fallot.

Abstract: Patients with repaired tetralogy of Fallot (ToF) have an increased long-term risk of cardiovascular morbidity and mortality. Risk stratification in this population is difficult. Initial evidence suggests that cardiopulmonary exercise testing (CPET) may be helpful to risk-stratify patients with repaired ToF. We studied 875 patients after surgical repair for ToF (358 females, age 25.5 ± 11.7 year, range 7-75 years) who underwent CPET between 1999 and 2009. During a mean follow-up of 4.1 ± 2.6 years after CPET, 30 patients (3.4%) died or had sustained ventricular tachycardia (VT). 225 patients (25.7%) had other cardiac related events (emergency admission, surgery, or catheter interventions). On multivariable Cox regression-analysis, %predicted peak oxygen uptake (V\textsubscript{O2} %) (p=0.001), resting QRS duration (p=0.030) and age (p= 170 ms had a 11.4-fold risk of death or sustained VT. Ventilatory efficiency expressed as V\textsubscript{E}/V\textsubscript{CO2} slope (p= 31.0, peak V\textsubscript{O2} %= 170 ms were the cut-off points with best sensitivity and specificity to detect an unfavorable outcome. CPET is an important predictive tool that may assist in the risk stratification of patients with ToF. Subjects with a poor exercise capacity in addition to a prolonged QRS duration have a substantially
increased risk for death or sustained ventricular tachycardia, as well as for cardiac-related hospitalizations.