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Risk factor for Heart failure admissions in adults with congenital heart disease in monocentric tertiary center

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Adult with CHD are now more important than children with CHD, and this population is a rapidly growing population. Heart failure (HF) is a serious complication in the long-term follow-up, and is one of the main causes of death. Therefore, a substantial increase in hospitalizations because of HFin ACHD is observed, requiring specialized care and making this problem an important public health issue

Aims: we aimed to characterize HF in ACHD and its management in a tertiary center. We also wanted to identify risk factors of first HF-admission.

Methods: We retrospectively assessed the medical records of 408 admissions of ACHD in our center. Risk factors for HF-admission were assessed using regression logistic models.

Results: 408 patients were admitted during a median follow up period of 14 months. HF criteria were met by 29 patients (7,1%). ACHD with HF were significantly older than other ACHD patients admitted (median age was 43 vs 33 years, p=0.001). They had more complex CHD (62%), they were mainly patients with history of RV outflow tract surgery, single ventricle and PAH (p=0.007). The aetiologies of HF were myocardial dysfunction (n=15), valvular disease (n=5), pulmonary hypertension (n=4), arrhythmia (n=3) and infective endocarditis (n=2). Mean hospital stay of ACHD patients with HF was longer (13 days vs 5 days, p<0.0001). Ten percent (3/29) died at a mean period of 23 days after their admission, one patient required circulatory support, and 2 patients were listed for heart transplantation. Independent risk factors for HF-admission were history of stroke (OR: 7,6 95%CI[2,4-23,8], p), abnormal rhythm conduction (OR: 4,2 95%CI[1,5- 11,6], heart failure (OR=4,7 95%[1,6-13,7], p<0.01)) , and atrial arrhythmia (OR: 3,5 95%CI[1,4 to 9,2). Number of cardiac surgeries was not a risk factor of HF. At admission systemic ventricle ejection fraction was the factor the most strongly associated with HF

Conclusions: Mortality risk is substantially increased after HF-admission, which emphasizes the importance to identify patients at high risk of HF-admission. These patients might benefit from closer follow-up and earlier medical interventions. This may add in care of patients with ACHD in the community and streamline care at tertiary centers.