Characteristics and outcomes of heart failure-related hospitalization in adults with congenital heart disease

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Background: Heart failure (HF) is the main cause of death in adult patients with congenital heart disease (ACHD). We aimed to characterize HF-related hospitalization of ACHD and to determine HF risk factors and prognosis in this population.

Methods: We prospectively included 471 ACHD admitted in our unit during 24 months. Clinical and biological data and HF management were recorded. Major cardiovascular events were recorded for HF ACHD.

Results: HF was the main reason for hospitalization in 13% (n=76/583 hospitalizations). HF ACHD were significantly older (median age 44 ± 14 vs. 37 ± 15 years old, p<0.01), with more complex congenital heart disease (p=0.04) and had more frequent pulmonary arterial hypertension (PAH) (29.1%, p<0.01), past history of HF (45.5%, p<0.01) and atrial arrhythmia (61.8%, p<0.01) than in patients without HF. Mean hospital stay of HF patients was longer (12.2 days vs. 6.9 days, p<0.01) and 25% of patients required intensive care. Twenty percent (11/55 HF-patients) died, 18% (n=10/55) were readmitted for HF, and 11% (6/55) had heart transplantation during the median follow-up of 18 months 95% CI[14-20]. In multivariate analysis, past history of HF (OR= 9.8 95%CI[5.7-16.8], p<0.01), PAH (OR=6.2 95%CI[3.5 - 10.7], p<0.01) and atrial arrhythmia (OR=3.6 95% CI[2.2 - 5.9], p<0.01) were the strongest risk factors of HF in ACHD. The risk of cardiovascular events was 19-fold higher after HF-related hospitalization.

Conclusions: HF is emerging as a leading cause of morbidity and mortality in ACHD population. Earlier diagnosis and more active management are required to improve outcomes of ACHD HF.