Predictors of mortality in patients with right-side and cardiac device-related infective endocarditis, the esc-eorp euro-endo registry

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Background/Introduction: Mortality in right-sided infective endocarditis (RSIE) and cardiac device-related IE (CDRIE) rates have increased mainly due derived complications and heterogeneity of the disease. A better understanding of associated risk factors to mortality in these entities are required in order to develop an efficient therapy.

Purpose: The aim of this study was to assess 30-day mortality rate and variables associated in RSIE and CDRIE.

Methods: The ESC-EORP EURO-ENDO registry is a prospective multicenter observational study of patients presenting with definite or possible IE in Europe and ESC-affiliated/non-affiliated countries. Patients were included from January 2016 to 31 March 2018 in 156 centers from 40 countries. Clinical data, blood test analysis and multi-modality imaging tests (echocardiography, computed tomography, PET-CT, magnetic resonance) were collected. Primary endpoint was 30-day mortality. Univariable analysis was performed to assess variables associated with 30-day mortality.

Results: Among 269 patients with RSIE, 24 patients (9.8%) died during the first 30-day of IE diagnosis. Cut-off value for best vegetation size related to 30-day mortality was vegetation length >19mm, with a HR = 2.88 (95% CI 1.26–6.58, p=0.01) and a Harrell's Concordance of 0.632. Factors associated with 30-days mortality by univariable analysis were: vegetation size >19mm (OR = 2.99, 95% CI [1.31–6.84], p=0.009), previous stroke or transient ischemic attack (OR = 5.10, 95% CI [1.19–21.88], p=0.029), HIV infection (OR = 3.52, 95% CI [1.03–12.10], p=0.046), chronic renal failure (OR = 2.66, 95% CI [1.06–6.71], p=0.038), congestive heart failure at admission (OR = 2.34, 95% CI [1.00–5.47], p=0.050) and severe regurgitation (OR = 3.77, 95% CI [1.56–9.09], p=0.003).

On the other side, among the 227 patients with CDRIE, 24 patients (8.8%) died during the first 30-day of IE diagnosis. Factors associated with an increase in 30-day mortality by univariate analysis were: age per 10 years (OR = 1.49, 95% CI [1.02–2.18], p=0.039), heart failure history (OR = 3.88, 95% CI [1.39–10.80], p=0.009), congestive heart failure on admission (OR = 5.80, 95% CI [2.31–14.55], p<0.001) and cardiogenic shock on admission (OR = 13.37, 95% CI [3.75–47.64], p<0.001). An increase in left ventricular ejection fraction (LVEF) per 10% was a protective factor (OR = 0.66, 95% CI [0.49–0.90], p=0.008).

Conclusions: Patients with RSIE and CDRIE had a not negligible 30-day mortality rate (9.8% and 8.8%, respectively). Factors associated with RSIE and CDRIE mortality are different; while in the right side location, the mortality was related with vegetation size and comorbidities, in the case of CDRIE, the mortality was mainly associated to the presence of heart failure.