Prevalence, profile, causes and prognostic factors of surgical rejection in patients with left-sided infective endocarditis

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Background: Despite the benefits of cardiac surgery in infective endocarditis, a high proportion of patients with surgical indication are not operated, which worsens their prognosis profoundly. Several attempts have been done to study this group of patients, but many aspects remain unclear so far.

Purpose: To analyze the prevalence, to describe in detail their characteristics, to determine the reasons for the denial and the prognostic factors of these patients in the widest series to date of patients with surgical indication but not operated.

Patients and methods: We included in an ongoing multipurpose database, all patients with definite left-sided infective endocarditis admitted in three Spanish tertiary hospitals from 2005 to 2022. We describe the clinical, epidemiological, microbiological, echocardiographic characteristics of patients with surgical indication according to the European guidelines who did not undergo surgery and compared with those patients operated on. We also analyzed the reasons of the denial and finally, through a univariate and multivariate analysis, determine the independent factors of in-hospital mortality of these patients.

Results: Of a total of 1105 patients with left-sided infective endocarditis of our series, 893 had surgical indication (81%) and 219 did not undergo surgery (19.8%). The main reason for surgical rejection was very high risk determined by an endocarditis team (56%), followed by stroke (25%), death before surgery (15%) and patient rejection (0.7%). The most frequent surgical indication of patients who were not operated was uncontrolled infection (50.4%). Patients not operated were older (73 vs 63; p<0.001), more frequently female (38.8% vs 29.5%; p=0.01), diabetic (34.7% vs 24.4%, p=0.003) and chronic renal failure (27.4% vs 11.3%; p<0.001). At admission they had more stroke (21.5% vs 12.1%; p=0.001) and septic shock (13.2% vs 6.9%; p=0.03). Staphylococcus aureus (34.7% vs 16.5%; p<0.001) and echocardiographic vegetations (92.7% vs 85.3%; p=0.005) were more frequent whereas Streptococcus viridans (8.2% vs 17.7%; p=0.001) and severe valvular regurgitation (64.8% vs 74.6%; p=0.005) were less frequent. In hospital mortality of patients not operated was 63.9%, significantly higher than operated patients (23%; p<0.001). The only independent risk factor of in-hospital mortality in patients with surgical indication who did not undergo surgery was persistent infection (HR 3.689; CI 95% 1.75-7.78).

Conclusions: A very high proportion of patients with definite left-sided infective endocarditis had surgical indication according to the European guidelines, but a quarter of them were not operated. Very high surgical risk was the main reason for the denial. They were older, had more comorbidities and a more aggressive microbiological profile. Mortality of these patients was three times higher than operated patients.