

Cancer and Infective endocarditis: diagnosis and prognostic impact. Results of the ESC-EORP EURO-ENDO (European infective endocarditis) registry: a prospective cohort study

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Background: Little is known about the characteristics of infectious endocarditis (IE) in cancer patients, although their risk may be higher and their presentation non-specific.

Purpose: This study sought to assess the prevalence of cancer in patients with IE in the EURO-ENDO registry and to determine their baseline characteristics, management, outcomes in comparison to cancer-free patients with IE.

Methods: Data were collected from a prospective cohort of 3085 adult patients enrolled in 40 countries between January 2016 and March 2018 with a diagnosis of IE based on the ESC 2015 diagnostic criteria. Clinical, biological, microbiological and echocardiographic findings, use of other imaging techniques, medical therapy, complications, theoretical indications for surgery, in-hospital mortality, and 1-year mortality were analysed in IE patients with and without cancer.

Results: 359 (11.6%) cancer patients with IE were identified and compared with 2726 IE patients without cancer. IE was community-acquired in 225/361 (74.8%), and more often nosocomial (18.6%) in healthcare associated cases. IE was native in 209 (60.4%), prosthetic in 97 (28%) and device-related in 30 (8.7%) patients. Microorganisms involved were Enterococci in 72/303 (23.8%), methicillin-sensitive Staphylococci in 63/303 (20.8%), and Streptococcus gallolyticus in 33/303 (10.9%) patients. IE cancer patients received more long-term cortico-therapy and immunosuppressive treatment compared to cancer free IE patients (9.1% vs. 3.9%,

$P < 0.0001$ and 11.7% vs. 2.7%, $P < 0.0001$, respectively). Acute renal failure was the most frequent complication, observed in 25.9% of patients, followed by embolic events (21.7%). Congestive heart failure and cardiogenic shock occurred more frequently in cancer patients (18.1% vs. 13.4%, $P = 0.016$; 10.1% vs. 6.3%, $P = 0.011$, respectively).

Cancer IE patients were more frequently treated with amoxicillin (35.8% vs. 26.3%; $P = 0.0002$) and daptomycin (15.2% vs. 10.6%; $P = 0.0096$), but less frequently treated with vancomycin (34.6% vs. 44.9%, $P = 0.0003$). According to the ESC guidelines, theoretical indication for cardiac surgery was not significantly different between groups (65.5% vs. 69.8%, $P = 0.091$), but was effectively less performed when indicated in cancer IE patients during hospitalisation (65.5% vs. 75.0%, $P = 0.0018$).

Compared to cancer-free IE patients, in-hospital and 1-year death occurred in 23.4% vs. 16.1%, $P = 0.006$, and 35.7% vs. 23.1%, $P < 0.001$, respectively. Predictors of mortality by multivariate analysis were creatinine > 2 mg/dL, congestive heart failure and unperformed cardiac surgery (when indicated).

Conclusion: We report the largest contemporary series of patients with IE and cancer. The prevalence of cancer in IE patients is common and associated with a worse outcome. Patients with IE and cancer have different clinical characteristics than the general population and should require a specific management.