Outcomes for extensive infective endocarditis: One, no one, and one hundred thousand

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Several advancements have been made over the past two decades in the field of infective endocarditis (IE), with regard to both antibiotic stewardship and new evidence on the optimal indications and timing for surgical treatment. Nevertheless, patients undergoing cardiac surgery for IE still bear poor outcomes, with a high risk of postoperative mortality and enhanced likelihood of long-term sequelae and recurrence of the disease. Moreover, these patients are often characterized by low socioeconomic status, and they thus face the additional burden of an uncertain and unconventional postoperative path. In this frame, extensive infective endocarditis (EIE) is a subtype of IE which involves the valvular annulus and can extend to the intervalvular fibrous body, thus representing a notorious surgical challenge.

In this issue of the Journal, Huuskonen et al. presented an interesting retrospective, single-center investigation of outcome in patients undergoing surgery for IE versus EIE.

In spite of the relatively small sample size (162 and 35 consecutive IE and EIE patients, respectively) and the limited follow-up (3.9 ± 2.9 years), the authors must be commended for their excellent short-term outcomes and for providing various points of interest to the readership.

First, the authors’ report has confirmed some findings in the characterization of EIE versus non-EIE patients. Notably, the prevalence of diabetes was significantly higher in the EIE group, which is inline with previous findings on diabetes predicting poorer outcomes in this patients population. The authors also demonstrated left ventricular ejection fraction and estimated glomerular filtration rate to be statistically significant predictive factors for poor outcomes in such patients, which is also consistent with prior investigations.

Second, Huuskonen et al. identified the female gender to be a protective factor for overall mortality. This runs contrary to prior findings—though the related body of evidence is mixed. The gender-outcome relationship is further complicated by both the fact the incidence of IE demonstrates a significant male predominance and the finding that women are less likely to undergo surgery for IE.

Third, the 30-day mortality rates reported by the authors were 9% in the EIE group and 7% in the non-EIE group. For 5-year mortality, the respective rates were 60% for EIE patients and 71% for non-EIE patients. These numbers are inline with previously reported mortality figures, even though it is admittedly difficult to compare mortality rates across different reports considering that different investigations have defined their cohorts differently, thus jeopardizing the possibility to compare outcomes in a methodologically accurate way.

The authors articulated this point very nicely in their discussion by stating that the large variability in reported mortality rates reflects differences in patient characteristics and the complexity of the surgical approach. This perhaps warrants the need for future research efforts in standardizing the metrics for IE outcomes.

A limitation of this case series, which is accurately acknowledged by the authors, is the potential for selection bias in patients chosen for operative treatment. There is indeed known variability between centers and even individual physicians when it comes to which patients are offered operative treatment. Factors such as endocarditis in people who use drugs (PWUD), recurrent endocarditis, the involvement of a multidisciplinary team, and prior treatment courses of antibiotics are important factors that may confound patient outcomes. Unfortunately, the authors do not mention the actual etiology of IE in their cohorts of patients, and information on any...
additional adjuncts as well as the type of multidisciplinary care these patients may have received is lacking. We believe that patients with IE should be approached in a tailored, patient-specific way—as supported by the evidence of improved mortality benefit with multidisciplinary care involving cardiac surgeons, cardiologists, infectious disease specialists, and addiction medicine specialists in case of IE in PWUD.19-21

In conclusion, Huuskonen et al. must be praised for their publication shedding additional light on a debated topic and demonstrating similar outcomes in IE patients with or without the involvement of the valvular annulus and the intervalvular fibrous body. In his novel "One, no one and one hundred thousand," the Italian writer (and Nobel Prize for Literature in 1943 22) Luigi Pirandello investigated human nature by beginning from the principle that each and every individual is viewed differently by any other individuals and concluding that everyone is therefore actually hundreds, if not thousands of different people. Similarly, a single disease entity such as IE is in fact a complex set of different pathologic features, characterized by different etiologies and affecting different types of patients. Accordingly, the therapeutic approach to this "one" disease—with its "one hundred thousand" manifestations—must take into account the interpatient variability and thus lay its foundation on multidisciplinary, comprehensive care.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

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