

The impact of establishing a regional infective endocarditis (IE) network on pre-operative IE-related complications and on post-operative outcome

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On behalf of Thuringian endocarditis network

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Background: Infective endocarditis (IE) requires a high degree of suspicion and advanced level of multidisciplinary management. In 2015, the European guidelines recommended the formation of an endocarditis-team (ET) for optimal treatment of IE. In 2011, we already established an ET within the hospital that was only consulted on demand for certain patients. Since 2015, ET has been increasingly involved in the management of almost all patients with IE. In addition, we established in 2015 a statewide endocarditis- (E) network for the referring hospitals.

Purpose: We investigated the effect of E-network on reducing referral latency and pre-operative IE-related complications. We also investigated the adherence to the ET management recommendations in our hospital and its impact on post-operative stroke and mortality.

Methods: We retrospectively analyzed data from patients operated for IE in our center between 01/2007 and 03/2018. We conducted univariate analysis using Chi-square or Fisher's exact test, Multivariate logistic regression models for in-hospital mortality and post-operative stroke, and Kaplan-Meier estimate of 5-years survival.

Results: Among 630 patients operated for IE in our center, 409 (65%)

underwent surgery in the 1st era before 12/2014. *S. aureus* IE was more frequent in the second era (34% vs 25%, $p < 0.001$). The median time from the onset of symptoms to referral in the 2nd era was halved compared to the first one [7 days (IQR 2–19) vs 15 days (IQR 6–35)]. Patients in the 2nd era were admitted with less IE-related complications, i.e. less preoperative stroke (14% vs 27%, $p < 0.001$), less heart failure (45% vs 69%, $p < 0.001$), less cardiac abscesses (24% vs 34%, $p = 0.018$), less acute renal insufficiency requiring hemodialysis (8% vs 14%, $p = 0.026$). The lack of ET management recommendations was an independent predictor for in-hospital mortality (adjusted OR: 2.13, 95% CI: 1.27–3.53, $p = 0.004$) and post-operative stroke (adjusted OR: 2.23, 95% CI: 1.12–4.39, $p = 0.02$), and was associated with worse 5-years survival (59% compared to 40%, log rank < 0.001).

Conclusion: Endocarditis-network led to earlier referral of patients, which resulted in less IE-related complications on admission. Lack of ET management recommendations was an independent predictor for post-operative stroke, in-hospital mortality and was associated with worse 5-years survival.

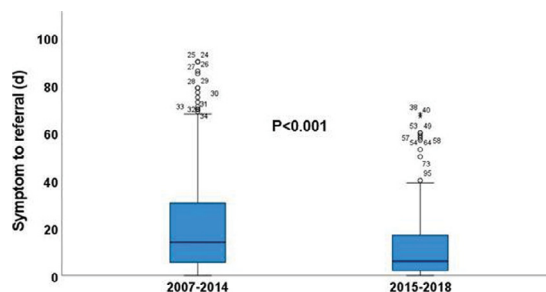


Figure 1

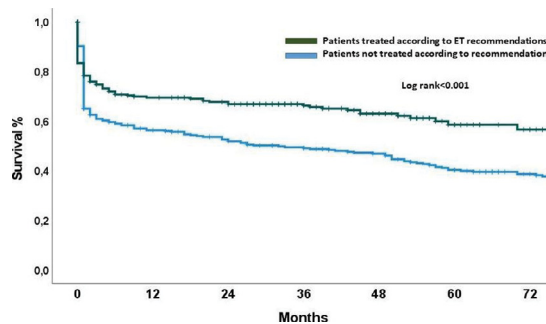


Figure 2