Abstract: **P2764**

Medical management of *Staphylococcus aureus* infective endocarditis: unexpectedly favourable outcomes in an aggressive disease

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On behalf: Infective Endocarditis Team

Topic(s):
Infective Endocarditis – Clinical

Citation:

Introduction: Early surgical intervention (ESI) for infective endocarditis (IE) is associated with improved outcomes. *Staphylococcus aureus* endocarditis (SAE) is associated with particularly high rates of tissue destruction, morbidity and mortality. However, the question as to whether ESI is mandated in all SAE continues to be debated, in both native (NVE) and prosthetic (PVE) endocarditis.

Methods: Retrospective review of all IE cases presenting to our institution from October 2015 to January 2019. IE was diagnosed following imaging and microbiological protocols as per ESC guidance, and data were extracted for those with SAE. Patients with isolated cardiac implantable electronic device IE or bacteraemia secondary to indwelling long-term venous catheter infection were excluded (non-valvular IE).

Results: Valvular IE was diagnosed in 411 patients overall; NVE in 286 (69.6%) and PVE in 125 (30.4%). *S aureus* was isolated in 111 patients (28.1%), of whom 5 had a Methicillin-resistant strain. SAE was confirmed in a similar proportion of NVE and PVE cases [83/111 (74.8%) and 28/111 (25.2%), respectively]. Surgical intervention was mandated in 35/83 with NVE (42.2%) and 11/28 (39.3%) with PVE, lower than in our overall cohort (55.9% and 48.8%, respectively).

In-hospital SAE mortality was 16.2% overall (18.4% medical vs 13.0% surgical), and contributes a significant proportion to overall mortality (29% to medical & 26% to surgical mortality). Figure 1 identifies the cause of death per mode of treatment, highlighting the aggressive nature of *S aureus* infection (abscess, disseminated infection and septic shock; n=8), the importance of advanced non-cardiac comorbidity precluding intervention (n=3) and ongoing intravenous drug use in those with PVE (n=4). However, medical management was successful in 57.8% (38/63) of NVE and 60.7% (17/28) of PVE cases, both in hospital and to a minimum follow-up of 3-months.

Conclusion: *Staphylococcus aureus* is virulent and highly pathogenic, driving severe sepsis and advanced tissue destruction in SAE. Despite this, medical management can be successful when following international guidance, but requires co-ordinated care driven by a multidisciplinary IE team at a cardiothoracic centre.
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Figure 1. S aureus endocarditis (SAE) mortality categorised by mode of intervention
Highlighting recognised key risk factors for poor outcome, especially overwhelming sepsis with and without source control, the key role of non-cardiac comorbidity and the importance of identifying the extent of cardiac abscess formation pre-operatively. CV – Cardiovascular; IVDU – Intravenous Drug Use; PVE – Prosthetic Valve Endocarditis.