VALIDATION OF CLINICAL CRITERIA SET TO GUIDE TRANSSESOPHAGEAL ECHOCARDIOGRAPHY IN THE MANAGEMENT OF PATIENTS WITH STAPHYLOCCUS AUREUS BACTEREMIA

Poster Contributions
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Authors: Bharath Palraj, Larry Baddour, James Steckelberg, Walter Wilson, Muhammad Sohail, Mayo Clinic, Rochester, MN, USA

Background: Staphylococcus aureus (SAB) is one of the leading causes of bacteremia. It is important to accurately identify patients with infective endocarditis (IE). IDSA Guidelines recommend transesophageal echocardiography in all patients with SAB to exclude endocarditis. Recently, simple criteria sets to predict endocarditis in SAB were proposed. We therefore sought to validate it in our cohort of SAB patients.

Methods: We performed a retrospective review of all adults (age≥18) hospitalized at Mayo Clinic with SAB from July 1, 2006 through June 30, 2010. IE was defined using modified Duke Criteria. The clinical criteria set (prolonged bacteremia of >4 days, presence of cardiovascular implantable electronic device (CIED), hemodialysis, vertebral, and non-vertebral osteomyelitis) was applied to all patients. Patients who had any of these criteria were categorized as high risk for IE. The sensitivity and negative predictive value (NPV) of the clinical criteria set in predicting IE were calculated.

Results: A total of 804 SAB cases (23.26% community-acquired, 56.59% community-onset healthcare associated and 20.15 % hospital-acquired) were identified. 65.67% of patients underwent trans-esophageal echocardiography (TEE) and 33.08% had trans-thoracic echocardiography (TTE). 3-month or longer follow-up data was available in 90.54 % of patients. The frequency of IE was 18.18% in community-acquired SAB, 9% in community-onset healthcare associated SAB and 6.2% in nosocomial SAB. The criteria set had sensitivity of 90.32%, 94.44% and 88.89 % among patients with community acquired, community-onset health care acquired, nosocomial SAB respectively. The negative predictive value of the criteria set for predicting IE was 95.38%, 98.88% and 98.8% among patients with community acquired, community-onset health care acquired, nosocomial SAB respectively.

Conclusions: A simple clinical criteria set can be used to accurately identify patients who are at very low risk of IE and these findings support an analysis of the application of these clinical criteria in prospective investigations.