

Abstract No. **58**

Category: **Valvular Heart Disease**

Title: **Predicting Infective Endocarditis in Patients With Staphylococcus aureus Bacteremia. Validation of two Prediction Scores in a Colombian Cohort**

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Abstract:

Background: Infective endocarditis (IE) is a potentially fatal complication of Staphylococcus aureus bacteremia (SAB). It is debated the routine use of echocardiography in patients with SAB. The objective of our study was to validate two prediction scores (PREDICT and VIRSTA) for risk of IE in patients with SAB.

Methods: A retrospective cohort study of patients with SAB in a reference hospital in Medellin, Colombia, between 2013-2015. We collected demographic, laboratory and microbiologic data, including those variables of PREDICT and VIRSTA scores. IE was diagnosed according to modified Duke criteria. Discriminative performance was compared by the area under the receiver operating characteristics curve (AUC-ROC) and calibration was assessed by the Hosmer-Lemeshow goodness-of-fit test. The operative characteristics of both prediction scoring rules were calculated.

Results: We identified two hundred ninety-two patients with SAB (Table 1). Twenty-seven percent had a methicillin resistant strain and 49% were hospital-acquired. The main sources of infection were central/hemodialysis catheter (39%), followed by soft tissue infection (27%) and superficial phlebitis (11%). Echocardiography was performed in 60% of patients, mainly transthoracic (74%). The rate of IE was 6.8% (n=20). The VIRSTA score was 7.5 (5.5 – 9.5) vs 2 (1-4) and the PREDICT score at day 5 was 1.5 (0-3) vs 1 (0-2), in patients with and without IE, respectively. The area under the ROC was 0.89 for VIRSTA and 0.63 for PREDICT at day 5. The operative characteristics and calibration of the scores are presented in Table 2. The negative predictive value was 99.3% and 95.0% for the VIRSTA and PREDICT at day 5, respectively.

Conclusions: The VIRSTA score presented the best performance in our population. In patients with a score ≥ 2 the negative predictive value is near 100%, which suggest that the routinely use of echocardiography in all patients with SAB is inappropriate. The use of this score would have permitted the avoidance of 155 echocardiographies. Consequently, its implementation may reduce huge costs to the health system.