

# Predictive accuracy of current electrocardiographic criteria for predicting site of origin of outflow tract ventricular arrhythmias

Autores: Nuno Cabanelas M.D\*; Diego Penela M.D; Juan Acosta M.D; Laura Cipolletta M.D; Juan Fernández-Armenta M.D; Lluís Mont M.D, PhD; António Berruezo M.D, PhD

Instituição: Arrhythmias Unit, Hospital Clinic de Barcelona, Barcelona, Spain; \*Serviço de Cardiologia do Hospital Distrital de Santarém

**Introduction:** Current ECG criteria to predict a right or left origin of outflow tract ventricular arrhythmias (OTVA) are derived from studies in populations without structural heart disease. We aim to evaluate the accuracy of previously described set of criteria in an unselected patient population.

**Methods:** 61 consecutive patients who underwent catheter ablation of OTVA were selected. ECG's were analysed and the sensitivity (Se) and specificity (Sp) of five criteria calculated: R-wave duration index; R/S amplitude ratio; precordial R-wave transition before/after V3; V2 transition ratio; ectopic beat R-wave transition occurring earlier/later than sinus beat R-wave transition.

**Results:** Average age was  $56.80 \pm 16.79$  years old. Male sex prevalence was 58-6%. 50% of the population had structural heart disease, 29.3% with ejection fraction lower than 30%. R-wave duration index  $\geq 50\%$  had 79.4% Se and 84.4% Sp; R/S amplitude ratio  $\geq 0.3$  had 79.4% Se and 84.4% Sp; precordial R-wave transition before V3 had 61.8% Se and 91.3% Sp; V2 transition ratio  $\geq 0.6$  had 90.9% Se and 81.1% Sp; ectopic beat R-wave transition occurring earlier than sinus beat R-wave transition had 93.9% Se and 83.8% Sp for predicting a left site of origin. Among patients with precordial R-wave transition in V3 (n=14), this last criterion had Se of 90.9% and Sp of 83.3%.

**Conclusions:** Proposed ECG criteria for discrimination between left versus right OTVA have a lower accuracy when applied to a unselected population. In patients with

V3 transition, ectopic R-wave transition before non-ectopic R-wave transition is an useful criterion to predict a left origin.