Outcome of His bundle pacing in patients with atrioventricular and interventricular dyssynchrony

Jemelee Hernandez
Sein Khine
Nee Hooi Tan
Chi Keong Ching

Introduction: His bundle pacing (HBP) aims to provide a physiologic pattern of ventricular activation to reduce atrioventricular dyssynchrony and the clinical complications of increased right ventricular pacing burden. It is also an attractive rescue strategy to decrease interventricular dyssynchrony in patients not eligible for cardiac resynchronization therapy. However, barriers to its wider use include operator’s learning curve, prolonged procedure and fluoroscopy time, rapid battery depletion and early lead revision. The objective of this study is to determine the acute clinical and procedural outcomes of His bundle pacing in patients with atrioventricular and interventricular dyssynchrony.

Methods: This is a descriptive study on patients who underwent His bundle pacing from August 2018-April 2019. Clinical factors including indication, ECG, left ventricular function, and procedural data including device check were obtained from review of records.

Result: Eight (8) patients were included in the study with a mean age of 71 ± 13 years and 75% were male. The indications for His bundle pacing include (1) permanent atrial fibrillation (AF) with tachycardia-bradycardia syndrome (n=5); (2) sinus node dysfunction (n=2) with the His lead inserted at the right ventricular port; and (3) permanent AF in rapid ventricular response with nonischemic cardiomyopathy with subsequent AV node ablation for which the His lead was placed at the left ventricular port. The mean ejection fraction prior to the procedure is 56 ± 14 % and the mean QRS duration prior to implant was 104 ± 13 ms with only one patient having right bundle branch block. The mean procedure time was 116 ± 39 minutes.

Conclusion: His bundle pacing is a safe and feasible alternative technique to minimize right ventricular pacing and maintain a physiologic narrow QRS with selective and nonselective capture in patients with atrioventricular and interventricular dyssynchrony.