Abstract: 927

His Bundle Pacing plus LV lead in heart failure patients candidate to CRT

Authors:
L Marcantoni¹, M Zuin², G Pastore³, E Baracca³, C Picariello², S Aggio², S Giatti², A Maddalozzo², K D'elia², M Carraro², D Lanza², P Galasso², L Roncon³, F Zanon³, ¹General Hospital of Rovigo, electrophysiology - Rovigo - Italy, ²General Hospital of Rovigo, Cardiology - Rovigo - Italy, ³General Hospital of Rovigo, Electrophysiology - Rovigo - Italy,

Topic(s):
Cardiac Resynchronization Therapy

Citation:
Introduction: His-bundle pacing (HBP) can recruit latent His-Purkinje tissue in BBB patients resulting in QRS narrowing/normalization thus shortening the LV electrical delay. Pacing from LV can complete this delay's reduction. Recently HBP has been evaluated as an alternative of CRT with positive results.

Objective:The purpose of this study was to assess the clinical, echo and QRS response to permanent HBP added to standard LV pacing in CRT-indicated patients.

Methods: we retrospectively analyzed 27 patients (mean age 76±7 years; 19 males) with standard indication for cardiac resynchronization therapy. Basal mean QRS duration was 155±29 ms, basal mean EF 30±5% and basal mean NYHA class 2.8±0.5. AV-block was present in 7 (26%) patients. All patients received the lead in the hisian area (15 S-HBP and 12 NS-HBP) and the LV lead via coronary sinus (0 MPP). 14 patients (52%) had ischemic cardiopathy; 22 patients (81%) had hypertension, 13 patients (48%) had diabetes and 5 (18%) patients had severe kidney disease. A CRT-D device with coil in the RV apex or septum was implanted in 4 patients; in these cases HB lead was plugged into the atrial port. The remaining patients received CRT-P devices with HB lead plugged in the RV port. We set V-V interval to 0 ms.

Results: All the patients were checked yearly with in-clinic visit and echo. Mean follow-up was 4.2±2.8 years. At the end of follow up mean QRS duration was 131.4±22 ms (P 0.03); mean EF 39±10% (P 0.003). 9 (33%) patients were classified as "super-responders" with final EF =45%. In two cases EF decreased. Median VP was >99%. 11 patients showed an high burden of AT/AF (>50%). The mean longevity of the devices was 4.1±1.5 years. During the first year of follow-up 4 patients (15%) patients experienced heart failure episodes.

Conclusion: HBP associated to LV pacing in HF patients showed a positive effect in cardiac remodelling. 71% patients resulted "responders"and 33% "super-responders" with a final EF=45%. QRS duration and clinical outcomes significantly improved.
Abstract:

His Bundle Pacing plus LV lead in heart failure patients candidate to CRT

Authors:

L Marcantoni1, M Zuin2, G Pastore3, E Baracca3, C Picariello2, S Aggio2, S Giatti2, A Maddalozzo2, K D'elia2, M Carraro2, D Lanza2, P Galasso2, L Roncon2, F Zanon3

1 General Hospital of Rovigo, electrophysiology - Rovigo - Italy, 2 General Hospital of Rovigo, Cardiology - Rovigo - Italy, 3 General Hospital of Rovigo, Electrophysiology - Rovigo - Italy

Topic(s):

Cardiac Resynchronization Therapy

Citation:

Introduction: His­bundle pacing (HBP) can recruit latent His­Purkinje tissue in BBB patients resulting in QRS narrowing/normalization thus shortening the LV electrical delay. Pacing from LV can complete this delay's reduction. Recently HBP has been evaluated as an alternative of CRT with positive results.

Objective: The purpose of this study was to assess the clinical, echo and QRS response to permanent HBP added to standard LV pacing in CRT-indicated patients.

Methods: we retrospectively analyzed 27 patients (mean age 76±7 years; 19 males) with standard indication for cardiac resynchronization therapy. Basal mean QRS duration was 155±29 ms, basal mean EF 30±5% and basal mean NYHA class 2.8±0.5. AV-block was present in 7 (26%) patients. All patients received the lead in the hisian area (15 S-HBP and 12 NS-HBP) and the LV lead via coronary sinus (0 MPP). 14 patients (52%) had ischemic cardiopathy; 22 patients (81%) had hypertension, 13 patients (48%) had diabetes and 5 (18%) patients had severe kidney disease. A CRT-D device with coil in the RV apex or septum was implanted in 4 patients; in these cases HB lead was plugged into the atrial port. The remaining patients received CRT-P devices with HB lead plugged in the RV port. We set V-V interval to 0 ms.

Results: All the patients were checked yearly with in-clinic visit and echo. Mean follow-up was 4.2±2.8 years. At the end of follow up mean QRS duration was 131.4±22 ms (P 0.03); mean EF 39±10% (P 0.003). 9 (33%) patients were classified as "super-responders" with final EF = 45%. In two cases EF decreased. Median VP was >99%. 11 patients showed an high burden of AT/AF (>50%). The mean longevity of the devices was 4.1±1.5 years. During the first year of follow-up 4 patients (15%) patients experienced heart failure episodes.

Conclusion: HBP associated to LV pacing in HF patients showed a positive effect in cardiac remodelling. 71% patients resulted "responders" and 33% "super-responders" with a final EF=45%. QRS duration and clinical outcomes significantly improved.

His lead + LV lead in CS LATERAL VEIN

Spontaneous QRS duration 160 ms
LV delay during HIS OFF 210 ms
LV delay during HIS ON 120 ms