Abstract: P525

Short-term effects of apical right ventricular pacing on right and left ventricular function

Authors:
N Poroyliev¹, D Markov¹, E Kinova¹, A Goudev¹, ¹University Hospital Tsaritsa Yoanna, Cardiology - Sofia - Bulgaria,

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Background: Permanent pacing is the only effective treatment for patients with symptomatic sinus node disease (SND) and atrioventricular block (AVB). Speckle tracking echocardiography (STE) provides direct information on LV and RV contractile performance, which may serve as a more sensitive measurement of ventricular systolic function than LVEF.

Purpose: To assess right and left ventricular function during RV apical stimulation.

Methods: We included 53 consecutive patients. LV and RV function were assessed with 2D echocardiography, TDI and STE. The patients were divided according to the percentage of cumulative ventricular pacing <40% (Group 1) n=20 (38%) or >40% (Group 2) n = 33 (62%).

Results. After a mean follow-up of 8 months in Group 1 patients there was decline in GLS-RV -22.00% to -18.58% (p = .009) and RVFWS -21.66% to -19.11% (p = .034) but no significant change in GLS LV and LVEF. In Group 2 we observed significant decline in GLS LV strain -20.37% to -17.49% (p = .027), GLS-RV -20.01% to -18.34% (p = .048) and RVFWS -22.73% to -19.04% (p = .049), without worsening of LVEF (p=.104). In Group1 the ratio of E/e’m increased from 10.68 to 14.31 (p=.002) and in Group2 increased from 13.5 to 16.6 (p=.014), without significant increase of the RV filling pressures. There was a significant decline in TAPSE (21.65mm to 19.12mm, p=.001) and S’ (17.88cm/s to 12.33cm/s, p=.007) in patients from Group 1. The results in Group 2 were similar. We found significant decrease in TAPSE (21.7mm to 19.5mm, p=.004) and S’ (13.6cm/s to 12.1cm/s, p=.029). There was no significant correlation between parameters at baseline and follow-up in Group 1 except for a negative correlation between LVEF and GLS LV in Group 2 patients (r=.767; p=.000).

Conclusion: Permanent pacing caused subclinical worsening of LV and RV function during 8 months of follow-up.