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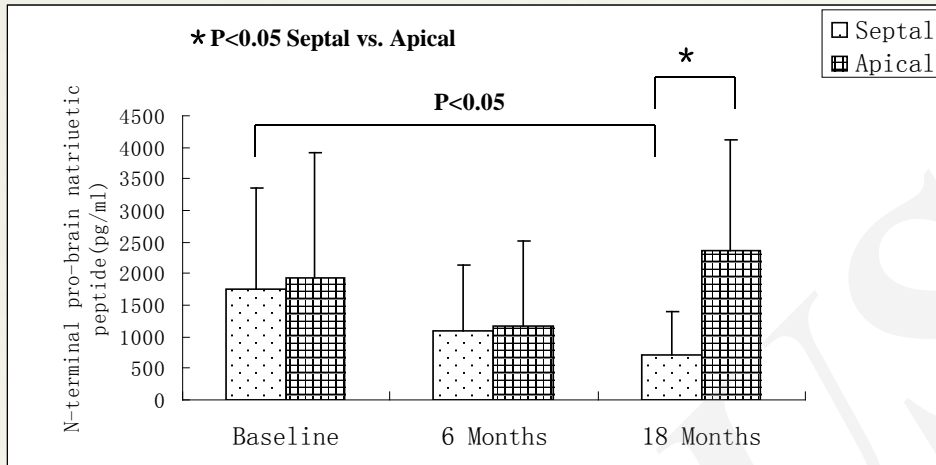
# Is right ventricular mid-septal pacing superior to apical pacing in patients with high degree atrio-ventricular block and moderately depressed left ventricular function?

**Key words:** Mid-septal pacing, apical pacing, impaired heart function

# Summary

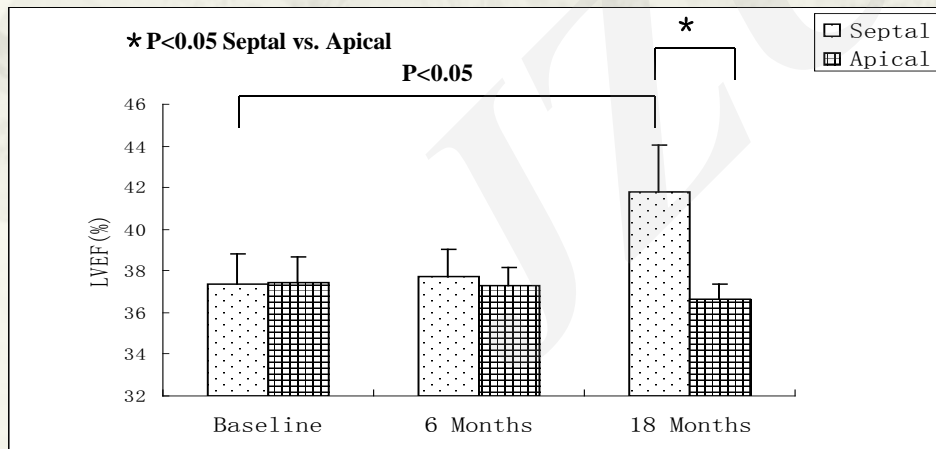
- \* **Background:** We investigated whether right ventricular mid-septal pacing (RVMSP) is superior to conventional right ventricular apical pacing (RVAP) in improving clinical functional capacity and left ventricular ejection fraction (LVEF) for patients with high-degree atrio-ventricular block and moderately depressed LV function.
- \* **Methods:** Ninety-two patients with high-degree atrio-ventricular block and moderately reduced LVEF (ranging from 35 to 50%) were randomly allocated to RVMSP (n=45) and RVAP (n=47). New York Heart Association (NYHA) functional class, echocardiographic LVEF, and distance during a 6-min walk test (6MWT) were determined at 18 months after pacemaker implantation.
- \* **Results:** Compared with baseline, NYHA functional class remained unchanged at 18 months, 6MWT (485m vs 517m) and LVEF (36.7% vs 41.8%) were increased, but BNP levels were reduced (2872 pg/ml vs 800 pg/ml) in the RVMSP group compared with those in the RVAP group, especially in patients with LVEF 35-40% (for all comparisons,  $P < 0.05$ ). However, clinical function capacity and LV function measurements were not significantly changed in patients with RVAP, despite the pacing measurements being similar in both groups, such as R-wave amplitude and capture threshold.
- \* **Conclusions:** RVMSP provides better clinical utility, compared with RVAP, in patients with high-degree AV-block and moderately depressed LV function whose LVEF levels ranged from 35 to 40%.

## Patients with poor LV function (LVEF 35-40%) had better clinical results after RVMSp compared with those with RVAP

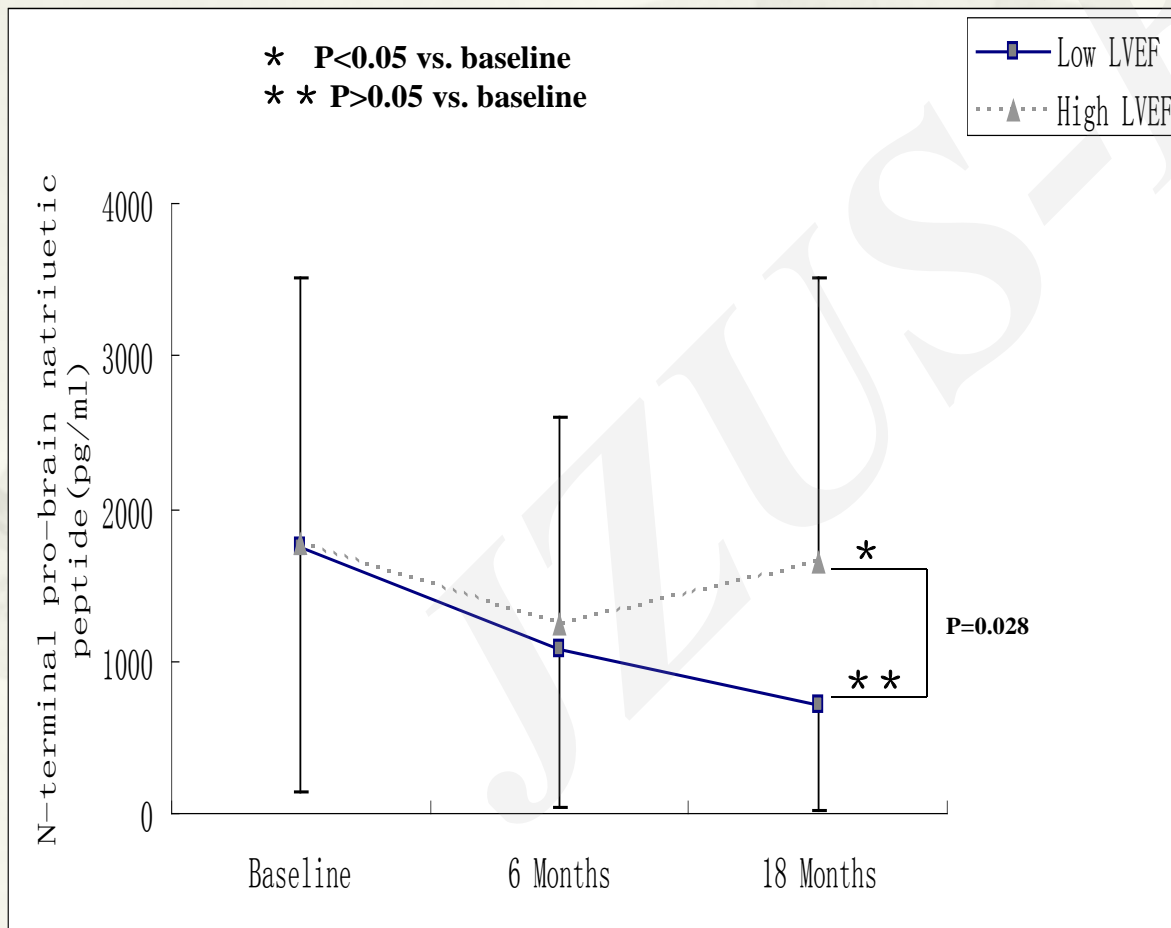


➤ Patients randomized to the RVMSp group with  $35\% < \text{LVEF} \leq 40\%$  at baseline have an obvious BNP which is decreasing during follow-up compared with those in the RVAP group ( $P < 0.05$ ).

➤ After 18 months' follow-up, patients with  $35\% < \text{LVEF} \leq 40\%$  at baseline allocated to RVMSp have a significant increase compared with RVAP ( $P < 0.05$ ).



**Even in the same septal-pacing condition, the lower LVEF group (LVEF 35-40%) had lower serum BNP levels compared with the high LV function group (LVEF 40-50%)**



➤ **Different levels of LVEF appear to be a key factor for the therapy of mid-septal pacing. The lower LVEF (35% <LVEF≤40%) group has a better BNP-decreasing effect than the higher LVEF (40% <LVEF≤50%) group based on the same mid-septal pacing conditions (P<0.05).**