

## 2. Summary

**Background:** In cardiac resynchronization therapy (CRT), vital terms like “optimal pacing configuration”, “effect” or “responder” still remain inconsistently specified.

**Aim:** Whether B-type natriuretic peptide (BNP) is able to early recognize differences among types of CRT ventricular pacing with the view of better CRT terms specification.

**Method:** 25 patients on chronic biventricular pacing (BiVP) were randomized to a period of either the tested (right) ventricular pacing (RVP) or the control (reactivated BiVP) with a cross-over on the next day. The initial pacemaker setting was restored at the end of each period. The series of BNP was assessed (2 prior; 6 after the reprogramming) on each of two consecutive days. The left ventricular pacing (LVP) was tested 1-month later in the similar manner. The early effect of BiVP was established using confrontation between both controls.

**Results:** In contrast to both LVP, BiVP, certain BNP differences were noted during RVP phase. Compared with the control, in which the levelled BNP trend was seen, the RVP exhibited the sustained BNP increase ( $P=0.008$ ). Compared with baseline BNP, the increased BNP reached significance at 3hour of RVP ( $+8.7\%;P=0.0002$ ), more pronounced at 4hour ( $+17.6\%;P=0.00002$ ), whilst during the control BNP remained unchanged. The BNP change seems to be predictable (using baseline BNP, or left ventricular diameter). The BNP variability was also tested.

**Conclusion:** BNP is able to early distinct types of CRT ventricular pacing with the increase during less

favourable one. Thus BNP may be useful in optimizing CRT issues.