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IMPACT OF LEFT VENTRICULAR SCAR BURDEN AND CARDIAC SYNCHRONY ON CRT EFFICACY: A SINGLE-CENTRE RETROSPECTIVE OBSERVATIONAL STUDY

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Background Whether left ventricular scar burden and cardiac synchrony could impact CRT efficacy has not been well described.

Objective This study was to assess the impact of left ventricular scar burden and cardiac synchrony on CRT efficacy.

Methods We retrospectively analysed the left ventricular scar burden and cardiac synchrony post-CRT assessed by SPECT in 30 CRT patients. They were divided into CRT-response group (18 patients) and CRT-non-response group (12 patients). The CRT response was defined as the improvement of left ventricular ejection fraction (LVEF) more than 5% or no admission to hospital during the first 6 months after CRT. The CRT non-response was defined as the improvement of left ventricular ejection fraction (LVEF) less than 5% or at least one time admission to hospital during the first 6 months after CRT. The LV scar burden and cardiac synchrony was determined by single-photon emission CT myocardial perfusion (SPECT). The cardiac synchrony parameters include phase SD and bandwidth. EF was detected by echocardiography.

Result There was significant difference in cardiac synchrony and scar burden between two groups. The average of phase SD and bandwidth was 26.6 and 84.2 in response group, and 57.9 and 177.8 in non-response group ($p < 0.01$). The scar burden was 26.9 and 41.1 in response group and non-response group, respectively ($p < 0.05$).

Conclusion CRT efficacy is associated with cardiac synchrony and myocardial scar burden assessed by SPECT, which may provide identification of CRT responders.