Validation of a newly generated CRT-score to predict the response to cardiac resynchronization therapy

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ABSTRACT

BACKGROUND

Cardiac resynchronization therapy (CRT) is an indispensable mode of treatment for the increasing number of patients with severe systolic heart failure .(1) A new CRT-score was recently generated in Alexandria University to predict responders to CRT.(2) The CRT score includes QRS duration ≥150 ms, LBBB morphology ,non-ischemic cardiomyopathy (ICM), sinus rhythm ,preserved RV function with TAPSE ≥15 mm, female gender, the absence of history of renal disease and significant chronic obstructive pulmonary disease (COPD). Each parameter was assigned to a single point except QRS duration ≥150 ms was assigned to 2 points of maximum 9 points.

METHODS

The study included 50 consecutive heart failure (HF) patients eligible for CRT implantation with New York Heart Association (NYHA) functional class II or III and LVEF ≤35%. Routine device and clinical follow-up were performed at baseline and at 6 month intervals. Response was defined as combined improvement of NYHA class and reduction in left ventricular end-systolic diameter >15%.

RESULTS

Fifty patients were included [76% men ,mean age 60.66±11.56years ; 96% NYHA class III, 25 patients had ICM, 98% of patients had LBBB, 43 patients had QRS duration ≥150msec. Baseline left ventricular ejection fraction (LVEF) was 27.36±5.01%; left ventricular end systolic diameter was 68.82±12.39 mm. CRT was successfully implanted in all patients ; CRT response was achieved in 43 patients (86%), the mean LVEF improved from 27.3 ±5.01 to 38.71 ±10.91 (P <0.001), the. The CRT response rate has been markedly significant according to the CRT-score. Patients with score ≥ 6 had response rate of 95.3 % vs 4.7 % if the score < 6 (P = 0.002, sensitivity = 95.35 and specificity =71.43).

CONCLUSION

The newly generated CRT score is a good predictor to improve the appropriate use of CRT and to increase the CRT response rate. PCI is a safe treatment option for ACS in VEP and Trans Radial PCI appears to be a safer treatment option compared with trans-femoral PCI.