Validation of a newly generated CRT-score to predict the response to cardiac resynchronization therapy
Mostafa Nawar, Gehan Magdy, Aly Abo Elhoda, Sarah Sultan

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±11.56 years, 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.