ICD and CRT are more effective in Asian HF patients?

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According to large-scale prospective randomized trial, an implantable cardioverter-defibrillator (ICD) is effective for decrease of all-cause mortality in patients with heart failure (HF) with ejection fraction (EF) ≤ 35% despite optimal medical therapy. The current guidelines for HF management recommend an ICD for these patients. According to large-scale prospective randomized trial, a cardiac resynchronization therapy (CRT) is effective for improvement of EF and decrease of mortality in patients with HF with EF ≤ 35% and left bundle branch block despite optimal medical therapy. The current guidelines for HF management recommend a CRT for these patients. However, because the most prospective randomized trials were conducted for American and European patients, the effects of ICD and CRT in Asian patients are not well known.

According to the previous large-scale prospective randomized trials in the US and Europe, ICD for primary prevention of sudden cardiac death could reduce all-cause mortality by 21% and 27% in patients with non-ischemic and ischemic HF, respectively. Annual appropriate and inappropriate ICD therapy rates were 5.1–17.0% and 2.4–8.9%, respectively. Data of large-scale prospective randomized trials and mortality change by ICD in Asian patients are lack. Annual appropriate and inappropriate ICD therapy rates were 6.1% and 3.2% in Korean patients, 15% and 7.8% in Japanese patients, 14.1% and 9.4% in Chinese patients from retrospective studies.

According to the previous large-scale prospective randomized trials in the US and Europe, CRT could reduce all-cause mortality by 34% in patients with HF with reduced EF and wide QRS complex. If CRT response is defined as reduction of left ventricular end-systolic dimension ≥ 15%, CRT response rate in American and European patients were 77.8%. Data of large-scale prospective randomized trials and mortality change by CRT in Asian patients are lack. CRT response rates were 44–72.3% in Korean patients, 58–64.5% in Japanese patients, 46.4–78.6% in Chinese patients from retrospective studies.

In conclusion, effects of ICD and CRT in Asian (Korea, Japan and China) patients with HF with

reduced EF are comparable with those in American and European patients. Large-scale prospective randomized trials for Asian patients are needed for confirmation of this conclusion.