**ICD and CRT – Benefit and Guideline**

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Sudden cardiac death (SCD) remains a significant threat to the long-term survival of patients with HF. The Framingham Heart Study showed that HF is associated with a 2.6- to 6.2- fold increased risk of SCD. The randomized trials that showed a significant benefit of implantable cardioverter defibrillator (ICD) in reducing all-cause mortality in NICM patients were SCD-HeFT and DEFINITE Trial. Most international guidelines use a cut-off inclusion criterion for eligibility of ICD implantation with left ventricular ejection fraction ≤35%. According to current clinical guidelines, class I indications for ICD implantation for primary prevention of SCD in patients with HF include (1) patients with LVEF ≤35% due to prior MI who are at least 40 days post-MI and are in NYHA class II or III; (2) patients with NICM who have an LVEF ≤35% and who are in NYHA class II or III; (3) and patients with LV dysfunction due to prior MI who are at least 40 days post-MI, have an LVEF ≤30%, and are in NYHA class I.

The electrical conduction disturbances play an important role in the progression of HF. In those with left bundle branch block (LBBB), the normal sequence of electrical activation is reversed leading to significant electromechanical coupling delay. A LBBB pattern on the admission ECG conferred a 10% increased risk of death and a 32% increase in HF rehospitalization in long-term follow-up. In a Swedish Heart Failure Registry, QRS prolongation ≥120 ms was present in 31% of patients with HF. The meta-analysis also showed that cardiac resynchronization therapy (CRT) was associated with a delay progression of HF symptoms and a significant improvement in exercise tolerance. European Society of Cardiology (ESC) Guidelines state that CRT is a class IA indication for NYHA class II HF patients with LVEF ≤35% and QRS duration ≥150 ms.