Improved survival with dynamic optimization of CRT pacing using AdaptivCRT algorithm: Analysis of real-world patient data

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**ANALYSIS DESIGN**

A total of 1,814 patients who had no reported long-standing AF history were included in the analysis. Frailty survival models were used to evaluate the potential survival benefit of the AdaptivCRT algorithm, adjusting for patient heterogeneity and center variability.

**REDUCED RISK OF MORTALITY**

29% relative reduction in mortality is associated with the AdaptivCRT algorithm versus conventional CRT (after adjusting for other potential risk factors*).

*Age, LVEF, NYHA, and patient comorbidity status of diabetes and renal disease.

**REduced Risk of AF**

Compared to Standard CRT, the AdaptivCRT algorithm is shown to be associated with a consistent reduction of AF at multiple duration cutoff points.

Studies have shown that the most common adverse events associated with CRT therapy are lead dislodgement, diaphragmatic stimulation, coronary-sinus dissection, pocket hematoma, pneumothorax, and device-related infection.2,3,4
tachyarrhythmia with no concomitant VT or VF. Ventricular fibrillation (VF), and patients whose primary disorder is chronic atrial fibrillation.

Pacemakers may be contraindicated in those patients who cannot tolerate pacing at a rate faster than the patient’s intrinsic rhythms. Single chamber atrial pacing is contraindicated in patients with chronic or persistent supraventricular tachycardias, including atrial fibrillation or flutter. Asynchronous pacing is contraindicated in patients with chronic or persistent supraventricular tachycardias, including atrial fibrillation or flutter. Antitachycardia pacing (ATP) is indicated for the treatment of ventricular arrhythmias and for providing cardiac resynchronization therapy in heart failure patients on stable, optimal heart failure medical therapy if indicated, and meet any of the following classifications: New York Heart Association (NYHA) Functional Class II or IV and who have a left ventricular ejection fraction ≤ 35% and a prolonged QRS duration. Left bundle branch block (LBBB) with a QRS duration ≥ 130 ms, left ventricular ejection fraction ≤ 30%, and NYHA Functional Class II, NYHA Functional Class I, II, or III and who have left ventricular ejection fraction ≤ 50% and atrioventricular block (AVB) that are expected to require a high percentage of ventricular pacing that cannot be managed with algorithms to minimize right ventricular pacing.

Optimization of heart failure medical therapy that is limited due to AV block or the urgent need for pacing should be done post-implant. Rate adaptive pacing is provided for those patients developing a bradyarrhythmia indication who might benefit from increased pacing rates concurrent with increases in activity. Dual chamber and atrial tracking modes are indicated for patients who may benefit from maintenance of AV synchrony. Antiarrhythmic pacing (ATP) is indicated for termination of atrial tachyarrhythmias in patients with one or more of the above pacing indications. CRT-Ds are indicated for ventricular antiarrhythmia pacing and antiarrhythmic defibrillation for automated treatment of life-threatening ventricular arrhythmias and for providing cardiac resynchronization therapy in heart failure patients on stable, optimal heart failure medical therapy if indicated, and meet any of the following classifications: New York Heart Association (NYHA) Functional Class II or IV and who have a left ventricular ejection fraction ≤ 35% and a prolonged QRS duration. Left bundle branch block (LBBB) with a QRS duration ≥ 130 ms, left ventricular ejection fraction ≤ 30%, and NYHA Functional Class II, NYHA Functional Class I, II, or III and who have left ventricular ejection fraction ≤ 50% and atrioventricular block (AVB) that are expected to require a high percentage of ventricular pacing that cannot be managed with algorithms to minimize right ventricular pacing. Optimization of heart failure medical therapy that is limited due to AV block or the urgent need for pacing should be done post-implant. Some CRT-Ds are also indicated for use in patients with supraventricular tachyarrhythmias, or those patients who are at significant risk for developing atrial tachyarrhythmias. The RV Lead Integrity Alert (LIA) feature is intended primarily for patients who have a Medtronic CRT-D device and a Sprint Fidelis lead (Models 6949, 6948, 6931, and 6930), based on performance data. The RV LIA feature may not perform as well with a St. Jude Medical Riata™ /Durata™ lead or a Boston Scientific Endotak lead as it does when used with a Medtronic Sprint Fidelis lead. This is because different lead designs may have different failure signatures and conditions that may or may not be detected early by the RV LIA feature. A complete SureScan system is required for use in the MR environment.

Contraindications: The CRT-P or CRT-D MRI SureScan Technical Manual before performing an MRI Scan. Any other combination of lead and lead configuration (eg, 1 and 2) will not result in a complete MRI SureScan system. For further information, call Medtronic at 1-800-328-2518 and/or consult the Medtronic website at medtronic.com or mrisurescan.com.

Caution: Federal law (USA) restricts these devices to sale by or on the order of a physician.