

“Cardiac Resynchronization Therapy: Limits and Horizons”

Student Name:
Student Number:

Professor:
Course Code:
Date:

Introduction:

Cardiac Resynchronization Therapy (CRT) by biventricular pacing has been established as a nonpharmacologic therapy for patient with drug refractory heart failure and conduction delay (Vardas *et al.* 2007). During heart failure, blood moves through the heart and body at slower rate, and pressure in the heart increases thus causing failure. A delay between the contraction of the right and left ventricles often occurs with heart failure, so the walls of the left ventricle are unable to contract at the same time also the amount of blood pumped out of the left ventricle drops (Ejection Fraction).

The CRT pacing device is an electronic, battery-powered device that is surgically implemented under the skin. The device has 2 or 3 leads that are positioned in the right atrium, right ventricle and left ventricle (via the coronary sinus). Studies show that the device with 3 leads (TRIP-HF (Triple Resynchronization In Paced Heart Failure Patients)) used in patients with severe heart failure has better outcomes (Auricchio & Prinzen, 2008). When the heart rate drops below the programmed set rate the device generates small electrical impulses that makes ventricles of the heart muscle contract, and causing right and left ventricles to pump together.

The Cardiac Resynchronization Therapy is currently recommended to advanced heart failure patients with prolonged QRS (QRS <120 ms) and those with poor ejection fraction (FE less than 35%) (Yu *et al.*, 2006). This study will therefore measure the usefulness of CRT as well as common approaches to statistical analysis concerning Tissue Doppler Imaging (TDI), and it's clinical application as a noninvasive diagnostic

References

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