Physiologist led one stop CRT shop

Laura Kapp, Ibrahim Arosi and Sam Thorne

Wythenshawe Hospital

Patients who undergo CRT implants often receive fragmented care

Non-response to CRT is difficult to assess, and optimizing their care is a persistent challenge

Ad-hoc educational interventions failed to show any significant improvement in our patients

We proposed a one-stop shop six months post implant in order to standardize care

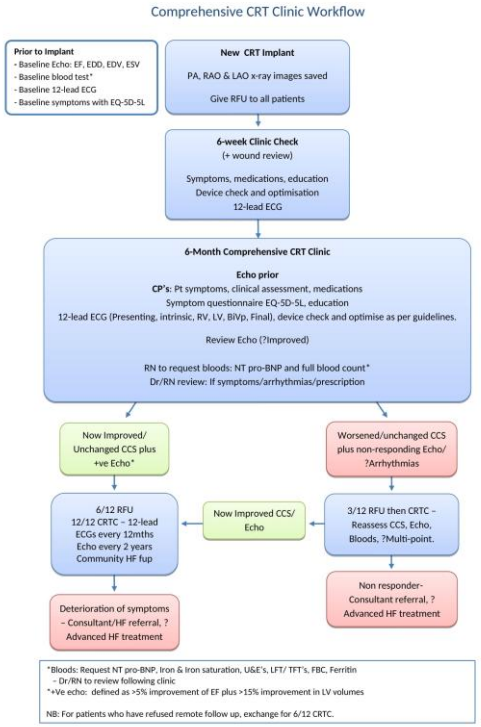
Methods

We retrospectively assessed 50 patients attending a routine pacing follow-up clinic from January 5–13. Only 6 had undergone CRT device optimisation. Notably, 32% had never been asked about post-implant symptoms, most were not receiving guideline-directed medical therapy (GDMT), only 8 had undergone a post-implant echocardiogram, and none had a 12-lead ECG. A follow-up audit in 2024 showed no significant improvement, despite educational interventions.

We developed a standard operating procedure to triage patients into a new CRT follow-up clinic. Prioritisation was given to patients without prior optimisation and those in sinus rhythm. Each patient received an EQ-5D-5L questionnaire, a 12-lead ECG, heart failure symptom assessment, and onward referral as needed.

Emerging Leaders Programme
British Cardiovascular Society

SOP



Results

The clinic launched in May 2024. A total of 51 patients were prospectively recruited. The mean age was 72.9 years. Baseline QRS duration at implant was 159.6 ms, and mean left ventricular ejection fraction (LVEF) was 31.2% (range: 13.5–52%).

Prior to optimisation, the mean QRS was 139 ms (range: 88–190 ms), with a mean biventricular pacing (BiVP) percentage of 94.3%. Thirty-one patients required CRT optimisation, involving adjustments to LV vector, CRT mode, and AV-VV delays. Post-optimisation, the mean QRS was reduced to 135 ms (range: 76–182 ms), with a mean narrowing of 12.7 ms.

Quality of life, as measured by the Minnesota Living with Heart Failure Questionnaire (MLHFQ), improved by an average of 14.2 points. Medication review showed 23 patients were on all four pillars of GDMT, while 17 were not prescribed an SGLT2 inhibitor. Thirteen patients were referred for further evaluation by heart failure, arrhythmia, or pharmacotherapy services.

Conclusions

Physiologist-led CRT clinics are a sustainable and effective model for standardising post-CRT follow-up. Improvements in QRS duration and quality of life were demonstrated. Structured symptom documentation can aid in identifying non-responders. Further work is required to ensure routine post-implant echocardiography and integration of physiologist training into heart failure care pathways to facilitate timely specialist referrals.

Next steps

Given the challenge of identifying and managing non-responders to Cardiac Resynchronization Therapy (CRT), we aim to implement the following measures:

1.Routine Six-Minute Walk Tests (6MWT):
Implement baseline 6MWTs for all patients scheduled for CRT. Repeat the 6MWT post-procedure to objectively assess improvement in physical capacity and identify non-responders.

2.Standardization of Post-Procedure Echocardiography:
Perform post-CRT echocardiograms consistently on the same day as the CRT clinic to streamline assessments and reduce hospital attendance

3.Heart Failure Nurse Involvement:
Integrate a heart failure nurse into the CRT care pathway to assist with medical therapy optimization and patient education, aiming to enhance clinical outcomes

4. Ensure the clinic remains physiologist led :
Physiologists are highly skilled and under-utilised. Unlike junior doctors, they do not rotate and thus are able to provide ongoing care to patients.