

RESPOND-CRT Trial

- Contractility Sensor-Guided Optimization of Cardiac Resynchronization Therapy -

Brugada J, Delnoy PP, Brachmann J, Reynolds D, Padeletti L, Noelker G, Kantipudi C, Rubin Lopez JM, Dichtl W, Borri-Brunetto A, Verhees L, Ritter P, Singh JP; RESPOND CRT Investigators. Contractility sensor-guided optimization of cardiac resynchronization therapy: results from the RESPOND-CRT trial. *Eur Heart J*. 2017 Mar 7;38(10):730-738. doi: 10.1093/eurheartj/ehw526. PMID: 27941020; PMCID: PMC5353752.

Background & objectives

- Although cardiac resynchronization therapy (CRT) is effective in patients with systolic heart failure (HF) and a wide QRS interval, a substantial proportion of patients remain non-responsive.
- The **SonR® hemodynamic contractility sensor** embedded in the right atrial lead enables **individualized weekly automatic optimization** of the atrioventricular (AV) and interventricular (VV) timings.

Objective: The **RESPOND-CRT** is a prospective, multicentre, randomized, double-blind, non-inferiority trial study investigated the safety and efficacy of the contractility sensor system in HF patients undergoing *de novo* CRT implants.

Methodology

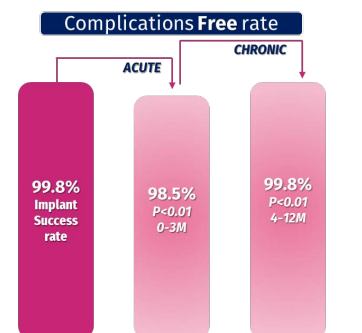


Trial endpoints

- Clinical responders rate (without HF-related events, with NYHA class improvement of 1 level or QoL improvement of at least 5 points, at 12 months).
- Freedom from acute and chronic atrial lead-related complications.
- Rate of clinically worsened patients
- Composite of all-cause mortality or HF hospitalisation.

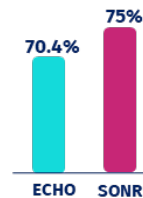
Results

SonR® Tip Lead

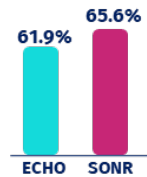


75% CRT responders rate

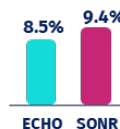
Responders



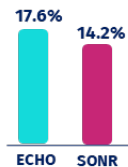
NYHA improved



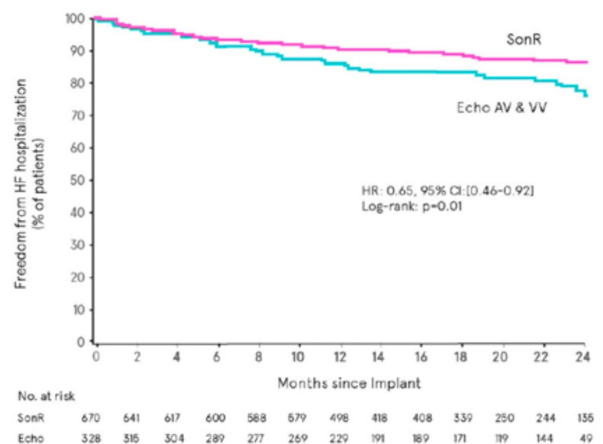
QoL improved



Death or HF hospitalization



35% risk reduction in HF hospitalization



Conclusion

- Automatic AV and VV optimization using **SonR®** technology **was safe and as effective as Echo-guided AV and VV optimization** in increasing response to CRT.
- **Clinical response for most subgroups was in favour of using the SonR® sensor**, especially in patients with a prior history of **atrial fibrillation** or **renal dysfunction**.