CRT Response in Real World Patients: Evaluation Methods and Actions Taken to Optimize Response

April Bond
Kevin Vernooij
Bobbi Hoppe
Danny Pierce
Jagmeet Singh
David O’Donnell
Yong-Mei Cha
Maurizio Lunati
Eugene Chung
Shufeng Liu
Lenore Marcotte

Introduction: Although multiple, randomized, double-blind trials have confirmed the benefits of cardiac resynchronization therapy (CRT), a proportion of patients continue to be considered non-responders. It remains largely unknown how physicians are evaluating for CRT response outside of prospective interventional trials and what methods they are taking to optimize CRT response in real-life practice. Objective: We aimed to characterize evaluation methods and treatments used to optimize CRT response in a real-world population.

Methods: Routine CRT response assessments were collected for a subset of patients enrolled in the Medtronic Personalized CRT Registry implanted with a Medtronic CRT system since April 2017. Data capture was reflective of real-world clinical practice in terms of how physicians assess CRT response and what actions were taken to improve CRT response.

Result: A total of 957 Patients have been enrolled and 444 have completed at least 3 months of follow-up. Of the 336 patients (70.7±10.5 years, 73.2% male) who had a completed CRT response assessment, 271 (80.7%) were CRT responders based on the initial CRT response assessment by physicians following implant. Assessment of CRT response was primarily based on heart failure (HF) symptoms (dyspnea, orthopnea, paroxysmal nocturnal dyspnea, flight of stairs, city block walk) (82.7%), followed by NYHA Class (58.9%), LVEF (30.1%), and LVESV (6.0%). Actions to improve CRT response were taken (or scheduled) in nearly half (46.2%) of non-responders, whereas actions were taken in 25.5% of responders. In both non-responders and responders these actions mostly involved additions (or changes) in medications (46.7% and 55.1%) followed by changes in device programming (30.0% and 37.7%) and diet changes/fluid restrictions (16.7% and 26.1%).

Conclusion: These preliminary results demonstrate that HF symptoms are the primary criteria used to assess CRT response. Actions to improve CRT response are more often taken in non-responders and most frequently included changes in medications followed by changes in device programming.