MORE-CRT MPP: Secondary Analysis Results

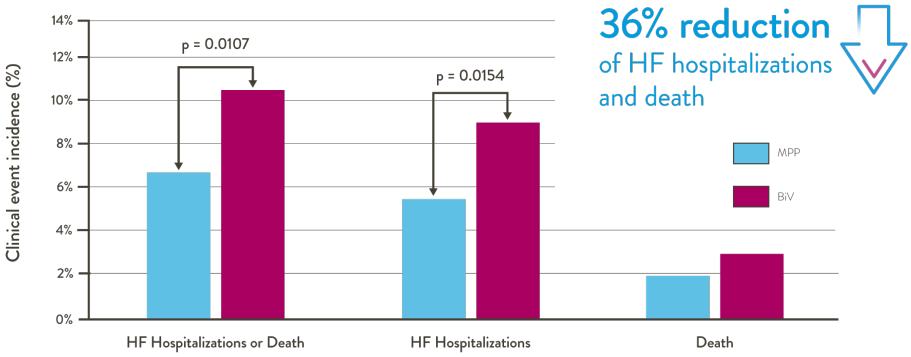
Late-Breaking Evidence: Cardiac Implantable Electrical Devices Session, EHRA 2025

Significant reduction of all-cause mortality and Heart Failure (HF) hospitalizations in CRT non-responders[1]

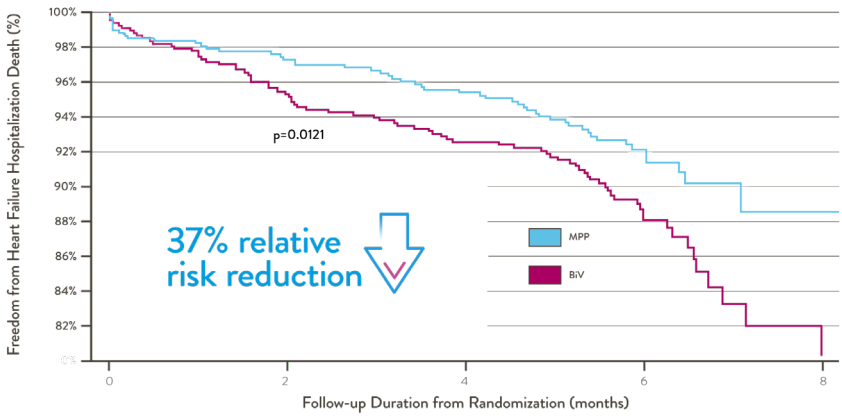
The MORE-CRT MPP trial is one of the largest prospective, multicenter, randomized controlled trials designed to assess clinical response in patients indicated to cardiac resynchronization therapy (CRT).[2]

The results from the secondary analysis show that MultiPoint™ Pacing (MPP), in patients who do not respond to BiVP, is associated with clinically relevant and statistically significant reduction of hard endpoints, such as heart failure hospitalizations or all-cause mortality.[1]

MPP is associated with clinically relevant and statistically significant **36% reduction of Heart Failure hospitalizations** and death.



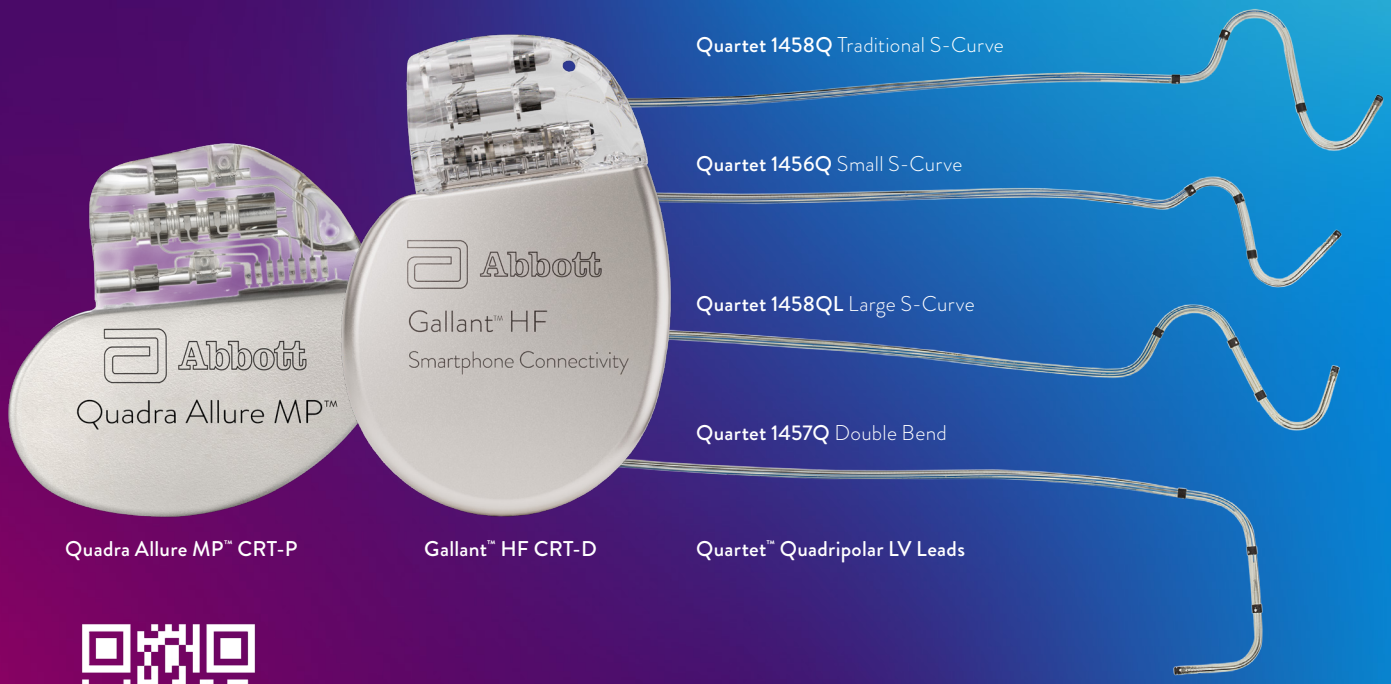
Over time, Heart Failure hospitalizations or death was significantly lower in MPP patients compared to BiVP patients with a **relative risk reduction of 37%**



MPP showed **superior outcomes** compared to BiVP across the entire study population and key patient sub-groups such as:

- Ischemic cardiomyopathy
- Very wide QRS (≥ 160 ms)
- Long interventricular delay (>105 ms)

Unlock the MORE-CRT MPP Potential with Abbott's CRT Portfolio



Quadra Allure MP™ CRT-P | Gallant™ HF CRT-D | Quartet™ Quadripolar LV Leads

Scan to learn more about our **CRT Portfolio**

References:

1. Leclercq C, Burri H, Calò L, Rinaldi CA, Sperzel J, Thibault B et al. Multipoint pacing is associated with reduction of heart failure hospitalizations or death in patients who do not respond to cardiac resynchronization therapy: results of the MORE-CRT MPP randomized trial, EP Europace, Volume 27, Issue 6, June 2025, euaf070, https://doi.org/10.1093/europace/euaf070
2. Leclercq C, Burri H, Delnoy PP, Rinaldi CA, Sperzel J, Calò L et al. Cardiac resynchronization therapy non-responder to responder conversion rate in the MORE-CRT MPP trial. Europace 2023;25:euad294.

Rx Only

Brief Summary: Prior to using these devices, please review the Instructions for Use for a complete listing of indications, contraindications, warnings, precautions, potential adverse events and directions for use.

Entrant™ and Gallant™ CRT-Ds

Intended Use: The Cardiac Resynchronization Therapy Defibrillator (CRT-D) devices are primarily intended for use with compatible leads to detect and treat life threatening ventricular arrhythmias by providing ventricular antitachycardia pacing and ventricular cardioversion/defibrillation. In addition, these devices can detect and treat: chronic symptomatic bradyarrhythmia by providing sensing and pacing in the right ventricle; various atrioventricular conduction abnormalities by providing sensing and pacing in the right ventricle and/or right atrium. CRT-D devices sense cardiac activity and provide pacing to resynchronize the right and left ventricles.

The myMerlinPulse™ mobile application is intended for use by people who have an Abbott Medical implanted heart device and access to a mobile device. The app provides remote monitoring capability of the implanted heart device by transmitting information from the patient's implanted heart device to the patient's healthcare provider.

Indications: Cardiac Resynchronization Therapy (CRT) devices are indicated for reduction of symptoms in patients who have congestive heart failure, a reduced left ventricular ejection fraction (LVEF) and a prolonged QRS duration. CRT-D devices are indicated in patients who meet the CRT indications and have already survived a cardiac arrest or are at a high risk of Sudden Cardiac Death (SCD) due to VT (ventricular tachycardia) or VF (ventricular fibrillation). The device is most commonly implanted within a device pocket in the pectoral region.

The myMerlinPulse mobile application is indicated for use by patients with supported Abbott Medical implanted heart devices.

Contraindications: Contraindications for use of the pulse generator system include ventricular tachyarrhythmias resulting from transient or correctable factors such as drug toxicity, electrolyte imbalance, or acute myocardial infarction.

The myMerlinPulse mobile application is contraindicated for use with any implanted medical device other than supported Abbott Medical implanted heart devices.

Adverse Events: Possible adverse events associated with the implantation of the pulse generator system include the following: Arrhythmia (for example, accelerated or induced), Bradycardia, Cardiac or venous perforation, Cardiac tamponade, Cardiogenic shock, Death, Discomfort, Embolism, Endocarditis, Erosion, Exacerbation of heart failure, Excessive fibrotic tissue growth, Extracardiac stimulation (phrenic nerve, diaphragm, pectoral muscle), Extrusion, Fluid accumulation within the device pocket, Formation of hematomas, cysts, or seromas, Heart block, Hemorrhage, Hemothorax, Hypersensitivity, including local tissue reaction or allergic reaction, Infection, Keloid formation, Myocardial damage, Nerve damage, Occlusion/Thrombus, Pericardial effusion, Pericarditis, Pneumothorax, Pulmonary edema, Syncope, Thrombosis, Valve damage. Complications reported with direct subclavian venipuncture include pneumothorax, hemothorax, laceration of the subclavian artery, arteriovenous fistula, neural damage, thoracic duct injury, cannulation of other vessels, massive hemorrhage and rarely, death. Among the psychological effects of device implantation are imagined pulsing, depression, dependency, fear of premature battery depletion, device malfunction, inappropriate pulsing, shocking while conscious or losing pulse capability. Possible adverse device effects include complications due to the following: Abnormal battery depletion, Conductor fracture, Device-programmer communication failure, Elevated or rise in defibrillation/cardioversion threshold, Inability to defibrillate or pace, Inability to interrogate or program due to programmer or device malfunction, Incomplete lead connection with pulse generator, Inhibited therapy including defibrillation and pacing, Inappropriate therapy (for example, shocks and antitachycardia pacing [ATP] where applicable, pacing), Interruption of function due to electrical or magnetic interference, Intolerance to high rate pacing (for example dyspnea or discomfort), Lead abrasion, Lead fracture, Lead insulation damage, Lead migration or lead dislodgement, Loss of device functionality due to component failure, Pulse generator migration, Rise in DFT threshold, Rise in pacing threshold and exit block, Shunting of energy from defibrillation paddles, System failure due to ionizing radiation. Additionally, potential adverse events associated with the implantation of a coronary venous lead system include the following: Allergic reaction to contrast media, Breakage or failure of implant instruments, Prolonged exposure to fluoroscopic radiation, Renal failure from contrast media used to visualize coronary veins.

No potential adverse events have been identified with use of the myMerlinPulse™ mobile application. ™ Indicates a trademark of the Abbott group of companies.

Quadra Allure MP™ Cardiac Resynchronization Therapy Pacemaker

Indications/Intended Use: Implantation of a CRT-P is indicated for: maintaining synchrony of the left and right ventricles in patients who have undergone an AV nodal ablation for chronic atrial fibrillation and have NYHA Class II or III heart failure; the reduction of the symptoms of moderate to severe heart failure (NYHA Class III or IV) in those patients who remain symptomatic despite stable, optimal medical therapy, and have a left ventricular ejection fraction ≤ 35% and a prolonged QRS duration. Implantation of a single chamber pulse generator, dual-chamber pulse generator, or CRT-P is indicated in one or more of the following permanent conditions, or any combination of these symptoms: syncope, presyncope, fatigue, disorientation. Rate-Modulated Pacing is indicated for patients with chronotropic incompetence, and for those who would benefit from increased stimulation rates concurrent with physical activity. Chronotropic incompetence has not been rigorously defined. A conservative approach, supported by the literature, defines chronotropic incompetence as the failure to achieve an intrinsic heart rate of 70% of the age-predicted maximum heartrate or 120 bpm during exercise testing, whichever is less, where the age-predicted heart rate is calculated as197-(0.56 × age). Dual-chamber pacing is indicated for those patients exhibiting: sick sinus syndrome; chronic, symptomatic second-degree and third-degree AV block; recurrent Adams-Stokes syndrome; symptomatic bilateral bundle branch block when tachyarrhythmia and other causes have been ruled out. Atrial pacing is indicated for patients with sinus node dysfunction and normal AV and intraventricular conduction systems. Ventricular pacing is indicated for patients with significant bradycardia and: normal sinus rhythm with only rare episodes of AV block or sinus arrest; chronic atrial fibrillation; severe physical disability. AF Suppression™ algorithm stimulation is indicated for suppression of paroxysmal or persistent atrial fibrillation episodes in patients with one or more of the above pacing indications.

Contraindications: Implanted Cardioverter-Defibrillator (ICD)—CRT-Ps are contraindicated in patients with an implanted cardioverter-defibrillator. Rate-Adaptive Pacing may be inappropriate for patients who experience angina or other symptoms of myocardial dysfunction at higher sensor-driven rates. An appropriate Maximum Sensor Rate should be selected based on assessment of the highest stimulation rate tolerated by the patient. AF Suppression™ algorithm stimulation is not recommended in patients who cannot tolerate high atrial-rate stimulation. Dual-chamber pacing, though not contraindicated for patients with chronic atrial flutter, chronic atrial fibrillation, or silent atria, may provide no benefit beyond that of single-chamber pacing in such patients. Single-chamber ventricular demand pacing is relatively contraindicated in patients who have demonstrated pacemaker syndrome, have retrograde VA conduction, or suffer a drop in arterial blood pressure with the onset of ventricular pacing. Single-chamber atrial pacing is relatively contraindicated in patients who have demonstrated compromise of AV conduction. For specific contraindications associated with individual modes, refer to the programmer's on-screen help.

Potential Adverse Events: The following are potential complications associated with the use of any pacing system: air embolism; body rejection phenomena; cardiac tamponade or perforation; hematoma, bleeding hematoma, seroma; formation of fibrotic tissue, local tissue reaction; inability to interrogate or program due to programmer or device malfunction; infection; erosion; interruption of desired pulse generator function due to electrical interference, either electromyogenic or electromagnetic; lead malfunction due to conductor fracture or insulation degradation; loss of capture or sensing due to lead dislodgement or reaction at the electrode/ tissue interface; loss of desired pacing and/or sensing due to lead displacement, body reaction at electrode interface, or lead malfunction (fracture or damage to insulation); loss of normal device function due to battery failure or component malfunction; pacemaker migration or pocket erosion; pectoral muscle or diaphragmatic stimulation; phrenic nerve stimulation; pneumothorax/hemothorax; endocarditis; excessive bleeding; induced atrial or ventricular arrhythmias; myocardial irritability; pericardial effusion; pericardial rub; pulmonary edema; rise in threshold and exit block; valve damage; cardiac/coronary sinus dissection; cardiac/coronary sinus perforation; coronary sinus or cardiac vein thrombosis; death.

Quartet™ LV Lead

Indications/Intended Use: The Quartet™ leads are 5.1 French, transvenous, steroid eluting, quadripolar, IS4 compatible (single connector with four electrical terminals), passive fixation leads intended for permanent sensing and pacing of the left ventricle when used with a compatible Abbott Medical biventricular system with an IS4-LLLL lead receptacle designation.

Contraindications: The use of the Quartet LV lead is contraindicated in patients who:

Are expected to be hypersensitive to a single dose of 1.0 mg of dexamethasone sodium phosphate

Are unable to undergo an emergency thoracotomy procedure

Have coronary venous vasculature that is inadequate for lead placement, as indicated by venogram.

Potential Adverse Events: Potential adverse events associated with the use of left ventricular leads include: allergic reaction to contrast media; body rejection phenomena; cardiac/coronary sinus dissection; cardiac/coronary sinus perforation; cardiac tamponade; coronary sinus or cardiac vein thrombosis; death; endocarditis; excessive bleeding; hematoma/seroma; induced atrial or ventricular arrhythmias; infection; lead dislodgment; local tissue reaction, formation of fibrotic tissue; loss of pacing and/or sensing due to dislodgment or mechanical malfunction of the pacing lead; myocardial irritability; myopotential sensing; pectoral/diaphragmatic/phrenic nerve stimulation; pericardial effusion; pericardial rub; pneumothorax/hemothorax; prolonged exposure to fluoroscopic radiation; pulmonary edema; renal failure from contrast media used to visualize coronary veins; rise in threshold and exit block; thrombolytic or air embolism; valve damage; performance of a coronary sinus venogram is unique to lead placement in the cardiac venous system, and carries risks. Potential complications reported with direct subclavian venipuncture include hemothorax, laceration of the subclavian artery, arteriovenous fistula, neural damage, thoracic duct injury, cannulation of other vessels, massive hemorrhage, and rarely, death.

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