IMPACT OF REMOTE, WIRELESS PULMONARY ARTERY HEMODYNAMIC MONITORING IN PATIENTS WITH ATRIAL FIBRILLATION AND CHRONIC HEART FAILURE: INSIGHTS FROM THE CHAMPION TRIAL

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 Background: Atrial fibrillation is a frequent co-morbidity in patients with chronic heart failure (HF) which contributes to worse outcomes. The CHAMPION trial demonstrated a significant reduction in the rate of HF hospitalizations in patients with pulmonary artery pressure monitor guided treatment. We postulated that patients with a history of atrial fibrillation (hAF) would exhibit worse baseline co-morbidities when compared to the normal sinus group, and hAF patients with physician access to remote pulmonary artery pressure data would have a significant reduction in the rate of HF hospitalizations.

 Methods: We retrospectively analyzed the CHAMPION results to determine the effectiveness of pulmonary artery pressure guided therapy in a subgroup of patients with hAF. All patients received standard HF medical therapy. The primary endpoint was adjudicated HF hospitalizations analyzed with the negative binomial regression.

 Results: Of the 550 NYHA class III CHAMPION patients, 255 (46.4%) had hAF at baseline; randomized to treatment (120) or control (135). The patients with hAF exhibited significant baseline differences compared to those in sinus rhythm: they were older (65 vs.59), more often male (80% vs.66%), white (81% vs.66%), more frequently had CRT or CRT-D devices (44% vs. 27%), had worse renal function by GFR (56 vs. 65 ml/min), and higher mean PA pressures (30.2 vs. 28.5 mmHg). Additionally, patients with a history of AF had a 57% higher HF hospitalization rate at 6 months compared to non AF (0.47 vs 0.30 events/patient p < 0.0001. Treatment patients with hAF had a 37% lower 6 month and a 41% lower 15 month (total blinded follow-up) rate of HF hospitalizations compared to control patients (0.36 vs. 0.57); p = 0.0004; and 0.54 vs. 0.91 (p< 0.0001) respectively.

 Conclusions: In patients with NYHA class III heart failure implanted with a wireless hemodynamic monitor; those with hAF had worse baseline co-morbidities and more frequent HF hospitalizations than those in sinus rhythm. hAF patients randomized to access to pulmonary artery pressures had fewer heart failure hospitalizations than those assigned to standard care.