

Diabetes and female gender are found to increase the hazard of deterioration? Results from the MEETinCY trial

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Funding Acknowledgement: Type of funding source: Public grant(s) – National budget only. Main funding source(s): Cyprus University of Technology State Funding

Background: Despite advances in the treatment of heart failure (HF), HF deteriorations are characterized by high hospital readmissions and linked with increased morbidity and mortality.

Aim: The aim of this study was to determine the effectiveness of a nurse-led management program on the reduction of the number of visits to ER, unplanned readmissions and mortality of patients with HF due to acute events of decompensation at 12 and 24-weeks post discharge. Secondary aim was to identify possible association between demographic or clinical characteristics and the hazard for acute events.

Methods: This study was designed as a multicenter single-blinded randomized clinical trial (RCT), The MEETinCY, with three different intervention groups (IGs) and one control group (CG) that received the usual care which did not include a structured educational programme. The first IG received only education (EE) before discharge, the second IG received only telephone follow-up (TT) for three months after discharge, the third IG included combination of education before discharge and telephone follow-up (ET) for three months after discharge. The efficacy of interventions on mortality and rehospitalization rates were estimated using a Kaplan Meier analysis and were compared with log rank test. The association of demographic and clinical characteristics to the hazard for acute events was explored using a multivariate Cox regression.

Results: Two hundred and forty-two (242) patients completed the study

[CG n=68, EE n=57, ET n=59, TT n=58]. During the 90 and 180 days study periods, the intervention groups, although appearing to have a “better survival experience” than the CG, no statistically significant difference was found for the periods 90 (log-rank test, $\chi^2 = 3.7$ $p=0.28$) and 180 (log rang $\chi^2=2.87$, $p=0.41$) days. Regarding the incidence risk of acute events (Readmission, ER visit, HF death) at 3 months seems to be higher in the CG (N=28–41.2%) than the other groups [EE n:16 28.1%, ET n:20 33.9%, TT n:16 27.6%], but not statistically significant ($p=0.32$). Results at 6 months showed the frequency of acute events in the CG (N=34, 50%), to be lower compared to the other groups [EE N:23 40.4%, ET n:24 39%, TT n:25, 43.1%], but not statistically significant ($p=0.59$). The hazard of deterioration was found to be significantly higher in patients with diabetes and in females, where the acute event hazard increased by 72% [HR: 1.72 (95% CI: 1.047–2.844), $p=0.033$], and 88% [HR: 1.88 (95% CI: 1.172–3.013), $p=0.009$] respectively. In addition, NYHA status was found to be associated with increased hazard of acute events; NYHA IV patients had 2.6 times higher risk [HR: 2.637, (95% CI: 1,007 - 6,902)] than NYHA I patients.

Conclusions: This highlights the need for further investigation of educational and supportive programs to reduce the risk of incidence of acute events in HF. It is also important to identify possible associated factors that may be reversible or preventable.