

**ADHERENCE TO HEART FAILURE THERAPY AND
OUTCOME: A POPULATION BASED STUDY**

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Background Improvements in medical therapy for chronic heart failure (CHF) have resulted in an increase in the number of drugs which patients have to take. As CHF patients are often elderly with multiple comorbid conditions, the resulting polypharmacy could potentially lead to non-adherence to medications. The aim of this study was to determine the prevalence of non-adherence among CHF patients and to determine if non-adherence is associated with a poor outcome.

Methods We conducted a 10 year retrospective longitudinal cohort study of CHF patients from Tayside in Scotland (population of 450 000) that were started on the angiotensin-converting enzyme (ACE) inhibitor, ramipril, after their incident CHF hospitalisation utilising our established record linkage database linking dispensed prescriptions to other datasets covering socioeconomic status, age, gender, hospital admissions and mortality data. To be included, patients with incident CHF hospitalisation had to have survived their index hospitalisation and completed a month of medication and have not switched to an angiotensin receptor blocker. Adherence was calculated as Proportion of Days Covered, with <80% deemed as non-adherence. Cross-tabulation was utilised to assess the factors associated with non-adherence and its effect on the number of repeated hospitalisation. All-cause mortality was analysed with Cox Regression models.

Results 702 eligible patients (mean age, 75.5±11.3 years) entered into the analysis. 35.9% (mean age, 78.1±11.3 years, 58.7% male) of the cohort were non-adherent and 64.1% (mean age, 74.1±11.1 years, 66.7% male) were considered adherent. Factors associated with non-adherence were male gender, old age (>81 years old), presence of ischaemic heart disease (IHD), chronic pulmonary obstructive disease (COPD) and chronic kidney disease (CKD). Non-adherence was associated with increased number of repeated hospitalisation (p=0.042) and was an independent predictor of all-cause mortality (risk ratio 1.58, 95% CI 1.29 to 1.95, p<0.001).

Conclusions Non-adherence to ACE inhibitor therapy was highly prevalent among CHF patients. Male patients, advanced age, presence of IHD, COPD and CKD are associated with non-adherence. Non-adherence was associated with an increase in the number of repeated hospitalisation and is a predictor of all-cause mortality.