

Prevalence and treatment of patients with heart failure with special emphasis on diuretics

Akademisk avhandling

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Avhandlingen baseras på följande delarbeten

- I Parén P, Schaufelberger M, Björck L, Lappas G, Fu M, Rosengren A. Trends in prevalence from 1990 to 2007 of patients hospitalized with heart failure in Sweden.
European Journal of Heart Failure 2014 Jul;16(7):737-42.
- II Parén P, Rosengren A, Zverkova Sandström T, Schaufelberger M. Temporal trends in loop diuretic treatment and neurohormonal antagonists after hospitalization for heart failure in Sweden from 2005-2014.
Submitted
- III Parén P, Dahlström U, Edner M, Lappas G, Rosengren A, Schaufelberger M. Association of diuretic treatment at hospital discharge in patients with heart failure with all-cause short- and long-term mortality: A propensity score-matched analysis from SwedeHF.
Submitted
- IV Parén P, Rosengren A, Dahlström U, Edner M, Lappas G, Schaufelberger M. Diuretic treatment as a prognostic predictor for long-term mortality in 17,518 real-life outpatients with heart failure after adjustment for MAGGIC mortality predictors.
Submitted

**SAHLGRENKA AKADEMIN
INSTITUTIONEN FÖR MEDICIN**



Prevalence and treatment of patients with heart failure with special emphasis on diuretics

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Abstract

Background: Heart failure (HF) is a major health problem worldwide with an estimated prevalence of about 1-2% in the Western world. The temporal trend for prevalence of HF has never been investigated in a nationwide population. In patients with HF diuretic treatment is recommended for relief of congestive symptoms. Over 80% of all patients with HF are estimated to be treated with diuretics. However, information about the temporal trend for diuretic treatment in a nationwide population is lacking and the prognostic effect of diuretic treatment in patients with HF has never been studied in a randomized clinical trial. Diuretics have been associated with increased mortality in selected populations with HF but the association of diuretics with mortality in unselected Western world patients discharged from a hospitalization for HF or in unselected outpatients with HF has not been studied.

Aim: The aims of this thesis was to study trends for prevalence of patients hospitalized with HF 1990-2007, trends for diuretic treatment in patients hospitalized for HF 2004-2011, the association of diuretic treatment at hospital discharge from a hospitalization for HF with short- and long-term mortality, and to evaluate diuretic treatment as a prognostic predictor for long-term mortality in outpatients with HF.

Methods and results: Data from several different Swedish registries were linked in these studies. Patients hospitalized with a primary or secondary diagnosis of HF aged 19-99 years 1990-2007 were included in Paper I. An increase in age-adjusted prevalence of HF until 1995 and a decrease from 2002 to 2007 was observed. Prevalence of HF in people aged less than 55 years increased throughout the observational period. In absolute numbers, patients with HF older than 85 years increased by 77% from 1990 to 2007 (Paper I). Patients with a first-time hospitalization for HF that survived for 18 months or more after discharge were included in Paper II. Post-discharge diuretic treatment and doses decreased 2005-2014 and coincided with increased neuro-hormonal antagonist treatment rates (Paper II). Patients recorded in the Swedish HF registry 2004-2011 with known diuretic treatment status were included in Paper III and IV. Diuretic treatment at hospital discharge had a neutral association with short-term mortality but was associated with increased long-term mortality (Paper III). Diuretic treatment in unselected outpatients with HF was independently associated with increased long-term mortality but did not improve a previously known model for prediction of 3-year mortality (Paper IV).

Conclusions: The prevalence of HF decreased 2002-2007 but may increase in the future due to increased prevalence in young persons and the demographic transition. If the observed trend for decreased post-discharge diuretic treatment rates and doses in patients with HF 2005-2014 was related to the observed coinciding increase of treatment with neuro-hormonal antagonists was not answered by this study. If the observed associations of diuretic treatment with increased long-term mortality in real-life patients with HF was related to a direct prognostic effect of diuretic treatment or to diuretic treatment as a marker for HF disease severity remains unknown.

Keywords: heart failure, epidemiology, pharmaco-epidemiology, diuretics, mortality

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