

Heart Failure in the elderly Clinical phenotype, prognosis and influencing factors

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligens försvaras i hörsal Arvid Carlsson, Medicinaregatan 3, Göteborg

Fredagen den 18. november, klockan 09:00

Av **Rúna Björg Sigurjónsdóttir**

Fakultetsopponent:

Professor Cecilia Linde

Institutionen för medicin

Karolinska Universitetssjukhuset

Solna

Avhandlingen baseras på följande delarbeten

- I. Holmström A, Sigurjónsdóttir R, Edner M, Jonsson Å, Dahlström U, Fu M.
Increased comorbidities in heart failure patients ≥ 85 years but declined from >90 years: Data from the Swedish Heart Failure registry. *Int J Cardiol* 2013; 167: 2747-2752
- II. Holmström A, Sigurjónsdóttir R, Hammarsten O, Gustafsson D, Petzhold M, Fu M.
Red blood cell distribution width and its relation to cardiac function and biomarkers in a prospective hospital cohort referred for echocardiography. *Eur J Int Med* 2012; 23:604-609
- III. Sigurjónsdóttir R, Barywani S, Albertsson P, Fu M.
Long-term major adverse cardiovascular events and quality of life after coronary angiography in elderly patients with acute coronary syndrome. *Int J Cardiol* 2016; 222: 481-485
- IV. Sigurjónsdóttir R, Kontogeorgos S, Johansson M, Albertsson P, Fu M.
Long term outcome and influencing factors in different categories of heart failure in the elderly. Submitted

**SAHLGRENKA AKADEMIN
INSTITUTIONEN FÖR MEDICIN**



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Abstract

Background: Heart failure has high morbidity and mortality and the incidence increases with age. Most randomized studies in heart failure were conducted in younger heart failure patients, despite the fact that the majority of the heart failure population is elderly. Therefore, the clinical phenotype and prognosis in elderly heart failure patients have been inadequately studied.

Aims: To characterize the clinical phenotype and study the prognosis of the elderly heart failure population, with focus on co-morbidities and biomarkers in three main categories of heart failure: heart failure with reduced ejection fraction (HFrEF), HF with preserved ejection fraction (HFpEF) and post-infarction HF.

Methods: This thesis comprises four parts: 1) a retrospective study on differences in clinical phenotype between the younger and older heart failure populations and between different heart failure categories in 24236 patients by accessing The Swedish Heart Failure Registry; 2) a prospective study on the correlation between red cell distribution width (RDW) and cardiac function between different heart failure categories in 296 patients referred for echocardiography; 3) a prospective study of 138 elderly acute coronary syndrome (ACS) patients, on prognosis in terms of major adverse cardiovascular events (MACE), including post-ACS heart failure and quality of life during a 3 year follow-up; 4) a retrospective study of 494 patients on all cause mortality and factors influencing mortality in different heart failure categories after 5 years of follow-up.

Results: When compared to the younger heart failure population, the elderly heart failure population had more co-morbidities and more often HFpEF, in addition they received less life-saving therapy. Mortality rates increased with age and were higher for HFrEF than HFpEF. Moreover, prognostic factors varied between different categories of heart failure. In spite of advanced treatment of ACS patients, post-ACS heart failure was still common and was coupled with worse quality of life.

Conclusion: Heart failure in the elderly is a unique clinical entity, not only when it comes to clinical characteristics but also in prognosis and its influencing factors. In the elderly, co-morbidities not only more often accompany heart failure but also affect the clinical phenotype and prognosis and therefore co-morbidities should be regarded as an important part of heart failure.

Keywords: Heart failure, elderly, prognosis, co-morbidities