

Women and acute myocardial infarction

- studies of symptoms, mortality and prognosis

Akademisk avhandling

som för avläggande av medicine doktorexamen vid Sahlgrenska Akademin vid Göteborgs universitet kommer att offentligen försvaras i Östraaulan, Centralkliniken, Sahlgrenska Universitetssjukhuset/Östra, Göteborg, fredagen den 20 september 2013 kl. 09.00

av

Johanna Berg

Fakultetsopponent:

Professor Eva Swahn

Institutionen för medicin och hälsa, Hälsouniversitetet
Linköping

This thesis is based on the following studies, referred to in the text by their Roman numerals.

- I. Berg J., Björck L., Dudas K., Lappas G., Rosengren A. Symptoms of a First Acute Myocardial Infarction in Women and Men. *Gender Medicine. 2009; 6: 454-62.*
- II. Berg J., Björck L., Lappas G., O'Flaherty M., Capewell S., Rosengren, A. Continuing decrease in coronary heart disease mortality in Sweden. 2012. *Submitted*
- III. Berg J., Björck L., Nielsen S., Lappas G., Rosengren A. Sex differences in survival after myocardial infarction in Sweden, 1987-2010. 2013. *Manuscript*
- IV. Nielsen S., Björck L., Berg J., Giang KW., Zverkova Sandstrom T., Falk K., Määttä S., Rosengren A. Sex-specific trends in long-term mortality in 37,276 men and women with acute myocardial infarction before the age of 55 years in Sweden, 1987-2006. 2013. *Submitted.*

WOMEN AND ACUTE MYOCARDIAL INFARCTION

STUDIES OF SYMPTOMS, MORTALITY AND PROGNOSIS

Johanna Berg

Institute of Medicine, Department of Molecular and Clinical Medicine, University of Gothenburg, Gothenburg, Sweden

Abstract

The primary aim of this thesis was to investigate recent data regarding sex differences in symptoms, mortality and case fatality in coronary heart disease (CHD), with the ultimate aim to increase knowledge about women and cardiovascular disease in order to improve the organisation of health care and prevention. Medical charts were used to study symptoms among patients in the population-based INTERGENE-study. The Swedish person-based national registers facilitate studies of trends over long periods. Data was collected from the Swedish National Cause of Death and Hospital Discharge registers. Analyses were performed in SAS, SPSS and Joinpoint.

Among 225 patients with first time acute myocardial infarction (AMI) chest pain was the most common symptom in both men and women. Atypical symptoms occurred in both sexes. Women had more nausea, back pain, dizziness and palpitations and a higher number of symptoms than men. From 1987 to 2009 CHD mortality in Sweden decreased by two-thirds equally in men and women aged 35 to 84 years. In patients with a first AMI or a fatal CHD event outside hospital from 1987 to 2011, women were on average four years older than men and had more comorbidities. The 28-day and 1-year survival after an AMI increased over the last two decades, more for men than for women, and hospitalized women below the age of 55 still retained a higher mortality than men.

However, more men died outside hospital, and when fatal events outside hospital were included in the analysis men had a worse short term prognosis than women. Among 7229 women and 30047 men aged 25 to 54 years with a first AMI from 1987 to 2006 4-year survival improved substantially, with current annual mortality rates estimated at about 1% per year, but particularly women still have a much higher 4-year mortality than women in the general population.

Keywords: myocardial infarction, women, signs and symptoms, chest pain, myocardial ischemia, mortality, risk factors, coronary disease, epidemiology, survival