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Determinants and risk factors for early risk stratification and optimal secondary prevention in ischemic heart disease

Akademisk avhandling
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Sahlgrenska Universitetssjukhuset, Göteborg den 25:e oktober 2024, klockan 09.00

av **Maria Sakalaki**

Fakultetsopponent: **Professor Claes Held,**
Uppsala Clinical Research Centre & Hjärtkliniken, Akademiska sjukhuset, Uppsala

Avhandlingen baseras på följande delarbeten

I. Maria Sakalaki, Salim Barywani, Annika Rosengren, Lena Björck, Michael Fu. Determinants of suboptimal long-term secondary prevention of acute myocardial infarction: the structured interview method and physical examinations. *BMC Cardiovasc Disord. 2019 Nov 6;19(1):243.*

II. Maria Sakalaki, Per-Olof Hansson, Annika Rosengren, Erik Thunström, Aldina Pivodic, Michael Fu. Multi-modality biomarkers in the early prediction of ischaemic heart disease in middle-aged men during a 21-year follow-up. *BMC Cardiovasc Disord. 2021 Feb 2;21(1):65.*

III. Maria Sakalaki, Aldina Pivodic, Kurt Svärdsudd, Per-Olof Hansson, Michael Fu. Cumulative incidence and risk factors of myocardial infarction during 20 years of follow-up: comparing two cohorts of middle-aged men born 30 years apart. *Clin Res Cardiol. 2023 Sep 27.*

IV. Maria Sakalaki, Michael Fu, Aldina Pivodic, Annika Rosengren, Lena Björck. Secondary prevention pharmacological treatment after a first myocardial infarction in Sweden - long term adherence and association with prognosis. *Manuscript.*

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ABSTRACT

Background: Ischemic heart disease (IHD) is the leading cause of death globally. To combat IHD and its challenges we must improve secondary prevention for those already affected and prevent its onset in a general population.

Aim: To study risk factors for the incidence of IHD and identify determinants of suboptimal secondary prevention.

Methods: In Paper I, a prospective cohort of patients with a first myocardial infarction (MI) underwent a structured interview and examinations two years after their MI. Papers II and III analyzed data from two cohorts of men from the general Swedish population, the "*Study of Men Born In 1913"* and the *"Study of Men Born In 1943"*, who had been followed longitudinally from 50 to 70 years of age. In Paper IV, patients with a first MI in the Swedish National Inpatient Register were linked to the Prescribed Drug Register to examine the relationship between secondary preventive, pharmacological treatment, and mortality and/or recurrent MI.

Results: Secondary prevention two years after a MI was suboptimal and multi-factorial. The use of pharmacological treatment as secondary prevention decreased in the first years after an acute MI and remained low during the follow-up of up to 16 years. The incidence of MI has decreased over time among men in Sweden, and in parallel, the risk profile has changed. The addition of the biomarker hs-TNT to risk factors, was able to enhance prediction of IHD at an earlier stage in the general population.

Conclusions*:* Secondary prevention including pharmacological treatment is vital to improve the prognosis in patients with IHD, but it remains suboptimal. Despite the reduced incidence of MI, it is still challenging to modify risk factors before the onset of an ischemic event. For a better risk stratification, early prediction and detection of IHD is crucial.

Keywords: [ischemic heart disease, myocardial infarction, secondary prevention, prediction]

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