Stroke: Risk Factors and Trends

Akademisk avhandling

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

I Giang KW, Björck L, Novak M, Lappas G, Wilhelmsen L, Torén K, Rosengren A. Stroke and coronary heart disease: predictive power of standard risk factors into old age long-term cumulative risk study among men in Gothenburg, Sweden.
Eur Heart J 2013;34(14):1068-1074.

II Rosengren A, Giang KW, Lappas G, Jern C, Torén K, Björck L. Twenty-Four-Year Trends in the Incidence of Ischemic Stroke in Sweden from 1987 to 2010.
Stroke 2013;44(9):2388-2393.

III Giang KW, Björck L, Nielsen S, Novak M, Sandström TZ, Jern C, Torén K, Rosengren A. Twenty-Year Trends in Long-Term Mortality Risk in 17,149 Survivors of Ischemic Stroke Less than 55 Years of Age.
Stroke 2013;44(12):3338-3343.

IV Giang KW, Björck L, Heden Ståhl C, Sandström TZ, Jern C, Torén K, Rosengren A. Trends in Risk of Recurrence after First Ischemic Stroke Among Younger Adults under 55 Years of Age in Sweden.
In manuscript

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STROKE: RISK FACTORS AND TRENDS

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Abstract

Stroke is a severe disease that affects 30,000 people in Sweden every year. Three quarters of stroke events are first time events. The risk of premature death and disability is high among stroke survivors. Knowledge about risk factors, trends in incidence and prognosis after stroke is important to reduce the risk and improve the outcome. The aim of this thesis was to investigate the long-term risk of coronary heart disease (CHD) and stroke among men from middle age and extending into old age, temporal trends in ischemic stroke (IS) incidence, and prognosis after stroke among younger IS patients (18-54 years). For this purpose the Primary Prevention (PPS) study was used in Paper I. Data from the Swedish Inpatient Register (IPR) and Cause of Death Register was used in Paper II to IV.

The European Systematic Coronary Risk Evaluation (SCORE) model estimates the 10-year risk of cardiovascular mortality among middle-aged people. This model is based on five risk factors: age, gender, blood pressure, serum cholesterol and smoking status. Paper I showed that the importance of these risk factors differed considerably when estimating the short-term (0-10 years) and long-term (0-35 years) risk of CHD and stroke, such that the prediction was better for CHD than for stroke.

During 1987 to 2010 the incidence of IS decreased among elderly (65-84 years) and middle-aged (45-64 years) people. However, among younger people (18-44 years) the incidence increased about 1.5% per year during the same period of time. From 1987 to 2006 the 4-year mortality risk decreased among young men and women after an IS. Similar findings were observed for recurrent IS. In addition, we observed that most of the decline in recurrence occurred within the first year.

In conclusion, this thesis showed that CHD and stroke differs not only by their clinical manifestations but also by how they were influenced by different risk factors at baseline over an extended follow-up. The risk of IS declined for older but not among young people which is a worrying trend but prognosis after stroke has improved over time among younger IS patients, however, the risk of either death or recurrent IS is still high.

Keywords: SCORE, prediction, CHD, stroke, ischemic stroke, temporal trends, incidences, mortality, recurrent ischemic stroke,

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