

Hypertension and Cardiovascular Risk Factors in Women

A follow-up study forty years after hypertensive pregnancies

Akademisk avhandling

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av

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

- I. Collén A-C, Manhem K, Sverrisdóttir YB. Sympathetic nerve activity in women 40 years after a hypertensive pregnancy.
J Hypertens 2012; 30:1203-1210
- II. Collén A-C, Hellgren M, Gustafsson H, Johansson M C, Manhem K. Cardiovascular and metabolic characteristics after hypertensive pregnancies.
J Hypertens 2013; 31:758-765
- III. Collén A-C, Gustafsson H, Hellgren M, Schiöler L, Bexander L, Manhem K. Impact of perceived stress on waist circumference in postmenopausal women.
Submitted
- IV. Collén A-C, Johansson M C, Wallentin Guron C, Gustafsson H, Manhem K. Echocardiographic changes in relation to blood pressure in postmenopausal women.
Submitted

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HYPERTENSION AND CARDIOVASCULAR RISK FACTORS IN WOMEN

A FOLLOW-UP STUDY FORTY YEARS AFTER HYPERTENSIVE PREGNANCIES

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Abstract

The aims of the thesis were to investigate the impact of pregnancy blood pressure, a current diagnosis of hypertension and blood pressure levels on neurohumoral, cardiovascular and metabolic status in postmenopausal women and thus to explore possible contributing mechanisms to the increased cardiovascular risk following hypertensive pregnancies.

In this follow-up study after hypertensive- and normotensive pregnancies, 105 women were evaluated with the following methods: microneurography; office-, ambulatory- and central blood pressure measurements; anthropometric measurements; pulse wave velocity and augmentation index; carotid intima-media thickness; cardiovascular response to mental stress test and evaluation of perceived stress; echocardiography and laboratory analyses regarding metabolic and neurohumoral values. Another 160 women responded to a questionnaire regarding previous and present health.

Women with previous hypertensive pregnancies had an increased prevalence of a diagnosis of hypertension, increased pulse wave velocity and affected metabolic parameters compared to women with previous normotensive pregnancies. These findings may partly explain the increased cardiovascular risk following hypertensive pregnancies. The sympathetic activity was only increased in women with previous hypertensive pregnancies and present hypertension. High self-reported perceived stress was associated with increased waist circumference which, in turn is related to an increased cardiovascular risk. Higher blood pressure levels were related to early signs of left ventricular diastolic dysfunction, emphasizing the importance of rigorous blood pressure control.

Our study contributes with unique knowledge regarding women's health many years after hypertensive and normotensive pregnancies. A diagnosis of present hypertension seems to be of major importance for the increased cardiovascular risk after hypertensive pregnancies, why maintenance of normotension is essential for women with previous hypertension pregnancies in order to retain cardiovascular health after menopause.

Keywords: hypertension, pregnancy complications, follow-up studies, sympathetic nervous system, vascular stiffness, echocardiography, stress