

# Hypertension in Pregnancy Tied to Late CV Events

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CHICAGO — Women who develop hypertension during pregnancy face a substantially increased risk of cardiovascular events later in life, based on a review of more than 4,000 women.

Hypertension in pregnancy is an “underrecognized risk factor” for subsequent cardiovascular events and for developing other markers of elevated cardiovascular risk, Dr. Vesna D. Garovic said at the annual scientific sessions of the American Heart Association.

“Traditionally, hypertension in pregnancy was not thought to play a major role in cardiovascular disease,” noted Dr. Garovic, a nephrologist at the Mayo Clinic in Rochester, Minn. But based on these findings, physicians who care for middle-aged or elderly women should obtain a history of their pregnancy outcomes.

Women with a history of hypertension in pregnancy need aggressive treatment to reduce their modifiable risk factors, and close monitoring for the onset of cardiovascular events, she said.

It’s likely that results from prior studies of women who had hypertension in pregnancy failed to establish these links because they involved relatively few women and had relatively brief follow-up.

These earlier studies also lacked racial and ethnic diversity, and often focused exclusively on cardiovascular death as their end point.

Dr. Garovic and her associates analyzed comprehensive clinical information gathered for women in the Family Blood Pressure Program, a study organized and funded by the National Heart, Lung, and Blood Institute.

The study group of nearly 4,800 women included roughly equal numbers who were white,

African American, Hispanic, and Japanese. The group included 3,421 women who were normotensive during each pregnancy, 643 women who developed hypertension during at least one pregnancy, and 718 women who had no pregnancy that lasted longer than 6 months (this third group was not included in the analysis).

The key index event was hypertension in pregnancy and not preeclampsia because the researchers who ran the Family Blood Pressure Program collected data only on hypertension during pregnancy and not information on the incidence of proteinuria or edema during pregnancy.

The women’s median age was 54 years when their clinical data were collected, and cardiovascular events were only counted if they first occurred after age 39.

The cumulative incidence of stroke among the women who had hypertension in pregnancy was 5.2%, compared with 2.7% among those who were normotensive in pregnancy, a statistically significant difference. The rate of coronary heart disease was 6.8% among those with a history of hypertension during pregnancy, compared with 5.4% among those without



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## Cardiovascular Risk Factors in Middle Age Linked to Hypertension in Pregnancy

Prevalence or average level in women who were:

Risk factor	Hypertensive in pregnancy (n = 643)	Normotensive in pregnancy (n = 3,421)
Microalbuminuria	17%	12%
Ankle-brachial index <0.9	11%	8%
Left ventricular hypertrophy	19%	13%
Serum C-reactive protein	0.46 mg/dL	0.34 mg/dL
Serum homocysteine	9.5 micromol/L	9.2 micromol/L

Note: All differences between the two study groups are statistically significant.

Source: Dr. Garovic

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# Early BP Screening in Offspring of Stroke Patients Warranted

BY PATRICE WENDLING  
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TUCSON, ARIZ. — Patients with a parental history of stroke should be screened early for raised blood pressure, Dr. Nigel Hart said at the annual meeting of the North American Primary Care Research Group.

The recommendation was drawn from Dr. Hart’s Stroke Offspring Study in which systolic and diastolic blood pressures were significantly higher in patients with a parental history of stroke, compared with matched controls. Stroke offspring also consumed more alcohol than their paired controls but did not differ significantly with respect to body mass index, lipids, diabetes mellitus, diet, smoking status, or exercise.

“Given the very-well-established relationship between blood pressure and stroke risk, these results suggest that higher blood pressure in stroke offspring may

contribute to their increased risk of stroke,” said Dr. Hart of Queen’s University, in Belfast, Ireland.

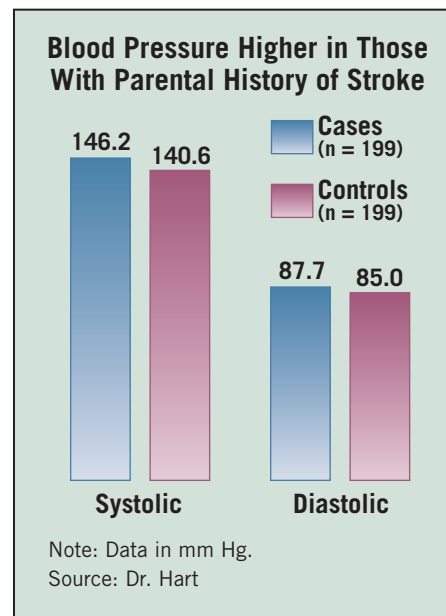
“This group may particularly benefit from a blood pressure screening strategy,” he added.

Questionnaires were sent to randomly selected individuals, aged 40-64 years, from 11 general practices representing 6% of the population of Northern Ireland. From the returns, those with a parental history of stroke (cases) were matched on age, gender, and socioeconomic status to those with no parental history of stroke (controls).

Matched pairs answered questions about smoking, alcohol, and medical history, and underwent a clinical evaluation. A total of 458 individuals were screened, and complete data were available on 398 individuals or 199 case-control pairs.

Systolic and diastolic blood pressures were significantly higher in cases than in

controls; (systolic 146.2 mm Hg vs. 140.6 mm Hg) and (diastolic 87.7 mm Hg vs. 85.0 mm Hg).



There were no significant differences between groups in total cholesterol, homocysteine levels, smoking status, or presence of diabetes, Dr. Hart and colleagues reported.

The only variable that was statistically different between groups was alcohol consumption, with cases drinking 3.7 more alcohol units per week than controls (13.8 U vs. 10.1 U). A pint of beer is equal to 2 units, while a glass of wine or hard liquor is equal to 1 unit.

The number of stroke offspring that drank above United Kingdom recommended limits was significantly higher than for controls (57 vs. 40). The recommended allowance for females is 14 U/week and 21 U/week for males.

The mean paired difference in diastolic (2.4 mm Hg) and systolic (5.5 mm Hg) blood pressures was statistically significant between groups even after adjusting for alcohol consumption using a stepwise logistic analysis, he said.

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