

Preeclampsia and the Link to Cardiac Disease

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Heart disease is currently the leading cause of death for women in the United States. It is important to note that the clinical presentation of cardiac disease in women differs greatly from that in men. This distinction may be related specifically to genetic, anatomic, and physiologic dissimilarities between men and women.

While conventional cardiovascular risk factors, such as obesity, diabetes, depression and stress have a more potent influence on cardiovascular disease in women than in men—there exists a different factor that ultimately uncouples the two genders. Hormonal changes within the continuum of a woman's life, particularly during pregnancy, have an impact on the development of cardiac disease. These alterations influence the cardiac conduction process, microvascular and endothelial function and bodily inflammation

Preeclampsia is a disease exclusively of pregnancy. While the precise etiology isn't known, what is known are two important findings:

A. Endothelial dysfunction—or dysfunction affecting blood vessel linings— is present. Normal pregnancy is characterized by specific changes in the body's lipid profile due to the effect of estrogen-in preeclamptic women there is found to be an abnormal imbalance of the lipid profile which ultimately has a damaging effect on the lining of blood vessels

B. Aberrant spiral artery formation—there is an abnormality noted in the manner in which the blood vessels in the placenta (spiral arteries) implant within the uterus. The altered lipid profile not only impairs the manner in which the placental vasculature behaves, but also sets up a cascade of chemical reactions which increase bodily inflammation at this level.

While the ultimate treatment of preeclampsia is delivery of the baby, unfortunately the damage initiated by the disease persists--increasing the risk of cardiovascular disease of women in later life by affecting the functionality of the coronary vasculature.

Current cardiovascular prevention and treatment strategies have developed from data obtained specifically from male subjects. They neglect to delineate sex based differences that may modify risk, clinical presentation, evaluation and ultimately treatment. Diagnosis, evaluation and treatment of female patients should not only reflect these strategies, but take into consideration distinct physiologic differences between the sexes.

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Definitive conclusions

- A. Novel research, particularly focusing on cardiovascular disease in women, is imperative
- B. It is crucial that woman, post pregnancy, notify their health care providers of their history of preeclampsia
- C. Women with a history of preeclampsia, at a minimum should have yearly cardiovascular and lipid evaluations to screen for encroaching disease-- and remain compliant with treatment modalities if any abnormalities are present

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