Heart disease: the number one killer of women

Most people know that heart disease is the number one killer of men, but not everyone knows that it is also the number one killer of women. Since 1984, more women than men have died of CVD every year. (Women and cardiovascular diseases – Statistics. 2004 American Heart Association. http://www.americanheart.org/presenter.jhtml?identifier = 3000941). In 2002, CVD killed 493 623 women compared with 433 825 men. Fifty-three per cent of CVD deaths occur in women.

The Society for Women's Health Research assembled cardiovascular experts recently in Washington, DC, USA, to discuss developments in cardiac care for women, including imaging techniques and heart-assisting devices. Regardless of technological gains in heart disease diagnosis and treatment, the specialists stated that women are still under-represented in cardiac studies and researchers do not regularly provided needed information about differences in the disease between women and men. Science tells us that men normally experience heart disease at an earlier age, but it was not recognized until recently that women suffer from heart disease in greater numbers than men later in life. (Heart disease and stroke statistics – 2005 Update. 2004. Dallas, TX, American Heart Association http://www.americanheart.org/presenter.jhtml?identifier = 1928). Consequently, women were often misdiagnosed, mistreated or ignored. Significant gains for women in heart disease have been made over the last 15 years.

Researchers have developed a more accurate way to predict the risk of developing cardiovascular disease among women, according to a study in the February 14 issue of the *Journal of the American Medical Association* (JAMA) (Ridker PM, Buring JE, Rifai N, Cook NR. Development and validation of improved algorithms for the assessment of global cardiovascular risk in women: the Reynolds risk score *JAMA* 2007; **297:** 611–619). In the decade between 1956 and 1966, investigators in Framingham, MA, defined age, hypertension (high blood pressure), smoking, diabetes and hyperlipidaemia (high cholesterol levels) as major determinants of coronary heart disease and coined the term coronary risk factors. Over time, these markers were developed into *global* risk scores for assessment of cardiovascular risk. Nevertheless, for women, up to 20% of all coronary events occur in the absence of these major risk factors, while many women with traditional risk factors do not experience coronary events. The authors remarked that although understanding of cardiovascular disease has changed dramatically in the past half a century, the algorithms (predictive models) for women are largely unchanged from those recommended 40 years ago.

The JAMA study researchers developed and validated cardiovascular risk algorithms for women based on a large set of traditional and new risk factors. The researchers assessed 35 risk factors among 24 558 initially healthy women (free of cardiovascular disease and cancer at the beginning of the study) 45 years or older from the Women's Health Study who were followed up for a median of 10.2 years for incident (new) cardiovascular events, such as myocardial infarction (heart attack), ischaemic stroke, coronary revascularization and cardiovascular deaths. The researchers used data among a randomly selected two-thirds of the women (n = 16 400) to develop new algorithms that were then tested to compare observed and predicted outcomes in the remaining one-third of women (n = 8158). The new algorithms are called the *Reynolds Risk Score* and the clinically simplified model for non-diabetic women includes age, systolic blood pressure, current smoking, total and HDL cholesterol, high-sensitivity C-reactive protein (hsCRP) and parental history of myocardial infarction before age 60 years.

If one is a healthy woman without diabetes, the Reynolds Risk Score (http://www.reynoldsriskscore.org/Default.aspx) is designed to predict the risk of having a future heart attack, stroke or other major heart disease in the next 10 years. In addition to age, blood pressure, cholesterol levels and current smoking status, the Reynolds Risk Score uses information from two other risk factors, a blood test called hsCRP (a measure of inflammation) and whether or not either of your parents had a heart attack before they reached 60 years of age (a measure of genetic risk).

General prevention guidelines for women are provided in a number of areas.

Smoking. Cigarette smoking is the single most important preventable cause of death in women. Women who smoke have a risk of heart attack and stroke two to four times higher than that of non-smokers. If one quits, the risk comes down dramatically. Second-hand smoke increases your risk as well as the risk for your children.

High Blood Pressure or Hypertension. Places a strain on the heart that can weaken its function. It causes heart disease, stroke, and can lead to kidney failure. Diet, exercise, and at times, blood pressure lowering medication are indicated, and blood pressure should be checked every 2 years.

High Cholesterol. Women with high levels of *total* cholesterol are at increased risk of heart disease, as are women with low levels of HDL cholesterol. If one has high cholesterol levels, the physician will recommend diet, exercise, and where needed, cholesterol lowering medication. You should have your cholesterol checked every 2–3 years.

High hsCRP. Women with increased levels of hsCRP can have increased risk of heart attack, stroke and cardiovascular death, even if cholesterol levels are in the normal range. Increased levels of hsCRP also increase your risk of developing high blood pressure and diabetes. If one has increased levels of hsCRP, diet, exercise and smoking cessation are the most important interventions to consider.

Exercise and Diet. Regular physical activity and maintaining proper weight are essential to reducing your risk of heart disease and improving quality of life. Studies have continually shown that exercise improves health of heart, both by lowering 'bad' cholesterol, hsCRP and blood pressure, as well as increasing 'good' cholesterol. Both regular exercise and weight reduction also lower the risk of developing diabetes. Exercise also battles the aging process and helps to reduce injuries.

There are many websites that provide information on risk reduction including sites sponsored by the American Heart Association (http://www.americanheart.org/) and the American College of Cardiology (http://www.acc.org/). Excellent sites with information specific to women include http://www.GoRedForWomen.com, http://www.ChooseToMove.com, http://www.womenshealth.gov. For specific information on C-reactive protein, patient-friendly information can be obtained at crphealth.com.

Additional resources:

http://www.nhlbi.nih.gov/health/hearttruth/
http://www.womenheart.org/
http://www.guidant.com/women/
http://www.4woman.gov/heart/
http://www.americanheart.org/presenter.jhtml?identifier = 4786
http://www.nlm.nih.gov/medlineplus/heartdiseaseinwomen.html
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