

Coronary Heart Disease

Coronary heart disease is usually caused by a condition called atherosclerosis, which occurs when fatty material and a substance called plaque builds up on the walls of your arteries. This narrows the arteries, which in turn causes the blood flow to the heart to slow down or stop. CHD is the leading single cause of death in both men and women in the UK, Northern Europe and North America. Women are six times more likely to die from heart disease than breast cancer.

Risk factors

Ageing is an important risk factor for CHD. Others are the genes you inherit, body disorders such as diabetes, and lifestyle habits. Cholesterol, a type of fat-protein combination used by the body to build cell walls and make certain hormones, is closely associated with heart disease. Low Density Lipoprotein Cholesterol (LDL-C) is the "bad" cholesterol which may be deposited on artery walls. High levels of LDL-C in the blood are linked to increased risk of CHD. HDL-C (high density lipoprotein cholesterol) is the "good" type. Raised levels of HDL cholesterol are associated with a reduced CHD risk. High levels of triglycerides, another type of blood fat, are also associated with an increased risk of CHD.

Eating fatty foods, particularly those rich in animal fats, may result in raised cholesterol levels. Overweight increases levels of both cholesterol (especially LDL-C) and triglycerides. Smoking reduces beneficial HDL cholesterol while exercise and moderate alcohol consumption may increase it. Sometimes high cholesterol levels are inherited, and have to be lowered with medical treatment. Obesity increases the risk of CHD. Being overweight puts extra strain on the heart muscle, raises harmful blood fat levels, increases the risk of high blood pressure and blood clots, and affects blood sugar control.

Blood pressure is another risk factor. Raised blood pressure also strains the heart and is associated with thickening of the heart muscle. It is also linked to abnormal cholesterol patterns.

Diabetes mellitus is a condition where the body is unable to clear sugar from the blood effectively. It may be due to poor insulin production by the pancreas (type 1 diabetes) or body tissues failing to respond to insulin action (type 2). High sugar levels and high insulin levels both help the development of fatty deposits in the arteries.

Smoking is the most preventable cause of CHD. Cigarette smoking damages blood vessels as well as lowering HDL cholesterol levels. Women smokers also experience an earlier menopause than non-smokers. Menopause removes the protective effect of female sex hormones. After menopause, rates of CHD in women increase and eventually catch up with those seen in men.

A family history of CHD is important, especially if it affects your female relatives. Ethnic origin may also have an influence. Women of South Asian ethnic origin are unusually prone to heart disease.

Symptoms of CHD

Chest pain originating from the heart, known as angina pectoris, is the main symptom of CHD. Typically it is described as a heavy or crushing pain across the chest, often spreading down the left arm. Frequently it is brought on by physical exertion. Angina occurring at rest usually signifies a worsening condition. If it increases in frequency and severity it may herald a heart attack. Coronary heart disease may lead to a heart attack, heart failure, or sudden death, without any warning symptoms.

Heart attacks

If too little blood reaches the heart muscle, due to a blocked artery, the affected part of the heart will die. The result is a heart attack. Sudden death may occur if the electrical system which regulates the heart is disrupted. Or the function of the heart muscle may simply be impaired so that it is less able to pump blood around the body. This is known as heart failure, which is often accompanied by shortness of breath, and swelling of the ankles, feet and legs.



Syndrome X

This condition has only been recognised recently and affects women much more than men. It consists of an angina-type chest pain, but no obvious obstructions of the coronary arteries due to fatty deposits. Patients with Syndrome X are much less likely to develop a heart attack.

Diagnosis and treatment

Symptoms of angina or breathlessness may suggest CHD. Measuring the electrical activity of the heart with an electrocardiogram (ECG) while exercising on a treadmill can reveal CHD related abnormalities. Radionuclide scanning is another diagnostic technique which involves tracking a radioactive substance carried by the blood to the heart.

The definitive way of diagnosing CHD is by means of a coronary angiogram. Dye is injected into the major artery in the groin and observed on an X-ray monitor as it passes through the blood vessels. Any blockages in the coronary arteries will show up. If you have a heart attack, you will usually be admitted to hospital for emergency treatment.

Patients who develop angina or who are recovering from a heart attack will often have a coronary angiogram. In some patients a technique called angioplasty may be employed, which inflates a small balloon inside the blocked artery. A small metal mesh, called a stent, can be left in place to stop the artery from blocking again. Some stents are impregnated with drugs to enhance the prevention of further blockages. Further procedures may include a bypass operation, which uses grafts of healthy blood vessels to re-route blood around the site of a blockage.

Patients with less severe CHD, or those who are unsuitable for these treatments, can be given drugs to help relieve angina pain. The drugs, which include nitrates, beta-blockers, and calcium channel blockers, help dilate the arteries and restore their normal function.

Prevention

All women who have had a heart attack should take low dose aspirin. Many may also be given beta-blocker drugs. Women who have had heart attacks show better survival rates if they use hormone replacement therapy. However, the correct doses and types of HRT for the prevention of CHD have not yet been worked out, and so HRT is currently not used for CHD prevention or treatment.

Useful contacts

The British Heart Foundation

14 Fitzhardinge Street, London W1H 6DH
Heart Information Line: 08450 70 80 70
Website: www.bhf.org.uk

Sources

MedlinePlus Medical Encyclopedia

U.S. National Library of Medicine
<http://www.nlm.nih.gov/medlineplus/ency/article/007115.htm>

This factsheet has been produced by Women's Health Concern and reviewed by members of our Medical Advisory Panel.

It is for your information and advice and should be used in consultation with your own medical practitioner. **Review date: November 2007.**