

suggests narrowing in the coronary arteries, an angiogram will be done. This involves injecting a dye into the blood so that the coronary blood vessels show up on an X-ray. If coronary artery disease is confirmed, it can be treated by angioplasty or bypass grafts.

Angioplasty involves widening the artery by inflating a balloon in the narrowed coronary artery, and sometimes inserting a wire mesh tube called a stent to hold it open. This procedure is done with a catheter - a long fine tube - which is passed into the body from a vein in the leg.

Coronary artery bypass grafting (CABG) CABG is open-heart surgery (the chest is opened). It involves rerouting the blood around the affected coronary artery, using a replacement section of a blood vessel - the graft - usually a section of a leg vein. This benefits people with dangerously narrow coronary arteries, especially if the left side of the heart is not pumping well.

See the BUPA factsheet on 'Coronary artery disease' for more information.

Rehabilitation

For the best possible recovery after

a heart attack, a rehabilitation programme is essential. A cardiac rehabilitation programme should involve an exercise programme devised by a physiotherapist, relaxation and advice on lifestyle and treatment. The hospital may run a programme, which will start around four-six weeks after the heart attack. This usually involves visiting the hospital once or twice a week for six to eight weeks. The British Heart Foundation (see below) and GPs should have a list of local rehabilitation programmes.

Prevention

The risk of a first, and a repeat heart attack can be reduced by making some lifestyle changes. Not smoking, losing excess weight, taking regular exercise and sticking to a diet that is low in fat and high in fibre will reduce the chance of having a heart attack.

Further Information

British Heart Foundation

☎ 020 7935 0185
www.bhf.org.uk

Cardiac Patients Association

☎ 020 8289 5591
www.cardiac-bcpa.co.uk

This factsheet is based on reputable sources of medical evidence and has been reviewed by BUPA doctors. For more details of references and sources, please see our website. The content is intended for general information only and does not replace the need for personal advice from a qualified health professional.

Heart attack

Heart attacks are the most common cause of death in the UK. Each year there are about 300,000 new heart attacks, which are fatal in 50% of cases.

A heart attack is the result of a blockage in one of the coronary arteries carrying oxygen-rich blood to the heart muscle. When the blood supply is cut off, a part of the heart muscle dies - or infarcts. A heart attack is also known as a myocardial infarction (MI), coronary thrombosis or, simply "a coronary".

Causes of a heart attack

The underlying cause of most heart attacks is atherosclerosis, a disease of the coronary arteries that usually develops over many years.

Atherosclerosis involves the formation of fatty deposits (plaques) on the walls of the coronary arteries. These plaques can rupture, releasing substances that cause blood flowing in the coronary artery to clot. Combined, the plaque and blood clot (thrombus) can block the coronary artery altogether, resulting in the symptoms of heart attack.

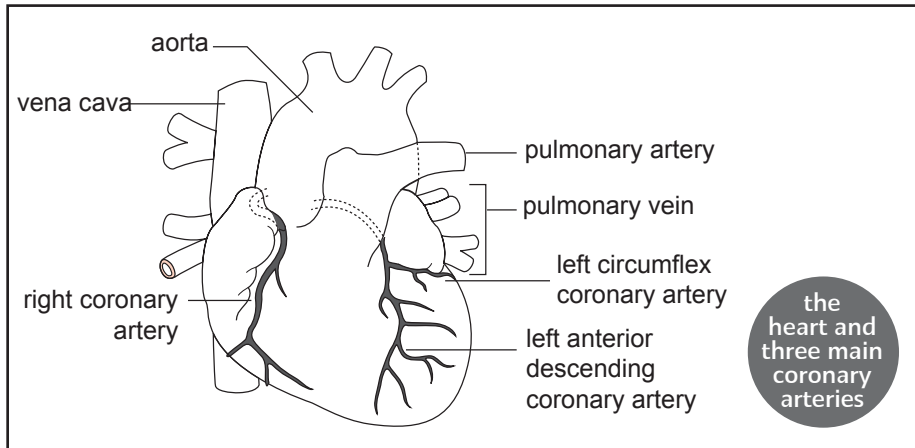
Lesser degrees of narrowing, without complete blockage, of a coronary artery may cause angina (see the separate BUPA factsheet).

Who is affected?

Heart attacks are more common in elderly people and, up to the age of 50, are more common in men than women. After that age, the difference between men and women narrows.

In addition to age and sex, doctors have identified a number of factors that may occur together to make atherosclerosis, and so a heart attack, more likely. These include:

- smoking,
- a family history of heart disease,
- an inactive lifestyle (less than 30 minutes per day, on most days, of physical activity),
- diabetes,



- obesity,
- high blood pressure,
- high blood cholesterol.

that the pain of a heart attack will not respond to their usual medicine (eg glyceryl trinitrate).

Symptoms

Most heart attacks cause severe pain in the centre of the chest. However, sometimes there may be no symptoms at all (silent MI), especially in the elderly and people with diabetes.

The central chest pain is often described as heaviness, squeezing or crushing, and may come on suddenly causing the person to collapse. It may spread to the arms, neck, jaw, face, back or stomach. A person having a heart attack may appear pale, sweaty and breathless. They may feel or be sick. The symptoms can come on suddenly, but sometimes the pain comes on more slowly.

Heart attack pain is more persistent than angina and can last for hours. A person who is used to angina will find

Treating a heart attack

If a heart attack is suspected, emergency treatment is vital - getting to hospital quickly and receiving specialist care greatly improves the chances of survival. If you suspect someone is having a heart attack call 999 immediately. If the person can swallow, give them a single aspirin tablet to chew. This thins the blood and can help to prevent the clot that is blocking the coronary artery from spreading.

Before hospital

In response to an emergency call for a suspected heart attack, the ambulance service will send a paramedic as quickly as possible. Their job is to stabilise the person and transport them to hospital quickly and safely for further treatment.

A paramedic may have to resuscitate a

very ill person, give oxygen and pain-relieving drugs. In a suitably equipped ambulance, they may take an electrocardiogram (ECG), which is a trace of the electrical activity of the heart. A heart attack can be diagnosed with this test.

At hospital

An ECG will be taken and blood tests done to confirm the diagnosis. Oxygen and pain relief is given - usually by giving an intravenous injection of diamorphine (heroin), which is combined with an anti-sickness medicine. This will make the patient comfortable and calmer and in this situation has no danger of causing addiction.

Low dose aspirin, if not already given, is used to thin the blood. Ideally, the person should be transferred to a coronary care unit for specialist medical and nursing care.

At the coronary care unit, or sometimes in the accident and emergency department, a slow intravenous injection of a drug called a thrombolytic (clot buster) is given. This dissolves the clot in the coronary artery. The drug is not without risks and a heart attack must be confirmed before giving it. But if the clot dissolves, the chances of a full recovery are much better.

Other drugs may be given if pain persists, if there is fluid on the lungs or a fast heartbeat.

Complications

In the first few days of surviving a heart attack, there may be irregular, or abnormally fast or slow heart rhythms, which are known as arrhythmias. As a result of the attack, the heart may not be able to pump around the body as efficiently as before the heart attack. This is called heart failure. The larger the area of the heart muscle affected by the heart attack, the more likely heart failure is to occur. For more information on arrhythmias and heart failure, see the separate BUPA factsheets.

Other rarer complications can include blood clots on the lung, stroke, inflammation of the membrane covering the heart (pericarditis), a bulging weakness in the heart muscle (aneurysm). There is also an increased risk of further heart attacks.

Long-term treatments

A small daily dose of aspirin is usually recommended for all heart attack survivors. Then, a range of other medicines may be required to promote blood flow, widen narrowed arteries, to give the heart less work to do or to make it pump more effectively. Other drugs reduce levels of blood cholesterol or control blood pressure. People who have had a heart attack may have to take a number of medicines daily, and long term.

Cardiology and cardiac surgery

After a heart attack, most patients will be offered an exercise test and if this