Angina

Angina is a chest pain – an uncomfortable feeling in the chest that is usually brought on by exercise or emotional upset. For some people it is hardly a pain at all, but for others it can be severe. The commonest complaint is of a heaviness or tightness in the middle of the chest.

The pain may spread to the left shoulder, left arm and hand; neck, throat, jaw, back and/or stomach. The patient may be temporarily short of breath, and/or feel weak and/or anxious. Also called **angina pectoris**.

Angina is a built-in warning device, telling you that your heart is trying to do too much and that you must take it easier.

Each year about 20 000 people in the UK develop angina for the first time.

Many women wrongly imagine that heart disease affects men only. In fact, one in four ***women*** die through heart disease.

Heart disease here means damage to the heart caused by narrowing of the coronary arteries. At first there may not be any noticeable symptoms. As it progresses it can lead to angina chest pain; and if an artery becomes blocked then part of the heart dies, leading to a heart attack.

Cause

Angina is most often caused by the gradual narrowing of the arteries of the heart by materials being deposited in their walls. Over many years, these deposits increase until they reach a size where they actually restrict the flow of blood through the arteries.

When a patient's body is at rest and the heart is beating at its normal resting rate, sufficient blood passes into the heart muscle to nourish it. Under exercise or strong emotion the heart is put under strain by being made to beat faster and a point is reached when the flow of blood and the oxygen it carries is insufficient to meet the increased demand of the heart muscle. Those muscles are starved of oxygen so cannot function properly, and this produces pain.

What to do

Anyone who unexpectedly gets such pain or symptoms should rest immediately and call an ambulance if either:

- it is not stable angina (explained below); or
- if both it is stable angina that the patient has had before and understands, and it does not respond within a few minutes to rest.

The doctor can usually tell if it is angina from what you say the pain feels like, where it is, and what brings it on. He or she may also order some other tests. Usually the diagnosis is confirmed by an electrocardiograph while the patient does an exercise stress test on a treadmill. The ECG pattern is often normal for patients who *sometimes* have angina, but the pattern can become abnormal when angina occurs. From a blood sample the amount of cholesterol and other fatty substances in the blood can be checked.

The main drugs for the treatment of angina are low-dose aspirin, and clopidogrel, which is an antiplatelet drug. Patients may need Coronary angiography.

Angina risk factors are given under artery in the Glossary.

Angina may take either of two forms.

Stable angina occurs with exercise and subsides after a few minutes of rest.

Unstable angina is unpredictable, coming and going even when the patient is resting. Both forms of angina typically produce similar chest pain as above.

The difference is that stable angina responds immediately to a few minutes rest.

Stable angina is an uncomfortable feeling in the chest that is usually brought on by exercise or emotional upset. It results from a temporary shortage of oxygen available to the heart muscle. Stable angina is more likely when you, the patient, are walking quickly, walking uphill, when you are carrying a heavy weight, or when you are upset. It is more likely after a meal, in cold weather, or when you are excited. Stable angina pain usually passes off within minutes after stopping exercise, and there is no lasting damage done to the heart muscle.

Unstable angina is severe and unpredictable angina *unrelated to exercise*. This is much more serious than stable angina. Unstable angina occurs when the patient is *resting* and a clot has formed in a heart blood vessel. Unstable angina is usually the result of a plaque in a coronary artery breaking up when the artery becomes partially or completely blocked by the formation of a clot. The blood clot is called a thrombus. This medical emergency may indicate an acute life-threatening event and should be taken as seriously as a heart attack. Public awareness of unstable angina is low. People do not realise the severity. In 2000, only 22% of a sample of people correctly knew that it might lead to a heart attack or death. Unstable angina is more common than breast cancer, or than Multiple Sclerosis. The term **Mini heart attack** is sometimes used to mean an attack of unstable angina.

The differences between angina, heart attack, and heart failure

With a **heart attack** the pain is more severe and lasts longer and it does not decrease on rest. The patient frequently perspires and may feel sick. A heart attack is the effect of an artery becoming blocked or significantly narrowed by a clot forming in a coronary artery – one of the arteries supplying the heart. The clot interrupts blood flow to the heart muscles, so an area of heart muscle is deprived of adequate blood. This may cause permanent scarring and damage to an area of the heart muscle.

Heart failure means that the heart muscles cannot pump enough blood efficiently to meet the body's needs.

Prevention and drug treatment of angina

In *some* people having the following correct is enough: weight, alcohol, cholesterol, regular exercise, avoiding stress, and not smoking. But most patients need drugs. Drugs can help by either increasing the blood supply to the heart or reducing the work it has to do.

Aspirin helps to reduce the stickiness of the blood, decreasing the chance of a heart attack or stroke.

Glyceryl trinitrate GTN is the commonest drug used for angina. It is usually sucked as a tablet or sprayed under the tongue, and can stop an anginal attack quickly. You should always carry your tablets and/or spray with you and use them if you think an attack is likely to come on.

If you get angina pain you should stop whatever you are doing and sit down. If the first GTN does not relieve the pain after 5 minutes, you should repeat the dose, and again at 10 minutes. If you still have angina pain after 15 minutes, you should contact a doctor.

Both tablets and spray can be brought over the counter without a prescription. Tablets deteriorate once opened – typically they only keep for eight weeks. A spray canister may keep three years and hold about 200 spray doses.

Prevention

Preventing a disease before it happens is called primary prevention.

Once a patient has a disease he or she and others can try to stop it getting worse, or at least slow down its progress, called secondary prevention.

For angina, the methods of primary and secondary prevention are much the same.

Don't smoke. Cigarettes remove oxygen from the blood. They excite the heart, and make the blood cells stick together. If someone stops smoking, after five years their risk of a heart attack falls to about the same as non-smokers. See factsheet on benefits of stopping smoking.

Lowering high blood pressure High blood pressure makes the heart work harder. So blood pressure needs to be controlled.

Weight reduction. Keeping close to the recommended weight for your height and age will keep your blood pressure down and reduce the workload on your heart.

Lowering blood cholesterol. If your blood cholesterol is too high you will be given statins and advised on diet, eg.

Cut down on saturated fats – in dairy products and fatty meats. Eat lean meats, use little or no butter, and switch to skimmed or semi-skimmed milk. Grill food rather than frying it.

- Polyunsaturated fat is in corn oil, sunflower oil, safflower oil, and soya oil – and is **good**.
- Monounsaturated fat is in olive oil, groundnut oil, and rape oil – and is **good**.
- Eat plenty of fresh fruit and vegetables – five fruits & vegetables a day.

Reduce *stress*. If you have angina then you should learn to relax more. Some hobbies will help you relax, but the important thing is to find out the stresses at home or work that you cannot cope with. Try to avoid activities that cause mental and emotional turmoil.

Everyday life with angina

After treatment most people with angina can get back to a normal life. However, many people with angina have previously been living excessively busy and stressful lives. You have a good reason to cut down on your commitments, if you want to.

Exercise will help to keep your weight down – most people feel better generally when they are fit. Walking, swimming, and cycling are all good for the body's systems. You should take 30 minutes of exercise 3 to 5 times a week.

But weight lifting and press-ups are types of intense exercise that are not recommended. Highly competitive exercise such as squash may be dangerous if you have a heart condition.

Sexual intercourse. The combination of physical activity and sexual excitement may bring on an angina attack. You do not need to avoid sexual activity, unless it produces angina. Taking a GTN tablet or spray beforehand will usually help. A useful rule is that if you can climb two flights of stairs without pain you can safely manage sexual intercourse. Sex is a normal part of life, if symptoms occur ask for advice. Do not avoid sex as this may lead to unnecessary frustration and reduce your enjoyment of life.

Driving. Do not drive if you get angina while driving. If angina only occurs on exercise and is stable, driving is permitted and notification to DVLA is not needed.

Holidays and travel are important and are recommended. You should organize your journey to allow plenty of time. Avoid carrying heavy pieces of luggage. Air travel should be no problem in modern pressurized aircraft. At an airport, take a rest in the departure lounge, so that an angina attack is less likely when you walk to the departure gate. You should avoid high mountains, though if you have mild or moderate angina you should be all right at heights up to about 2000 metres or 6600 feet.

Alcohol. See *Alcohol*. In small amounts, eg about 3 or 4 units per week, certainly less than one a day, alcohol will not harm your heart. In fact it might help to relieve tension, but you must be very careful of the effect of alcohol on your weight. The recommended guidelines are: up to 21 units per week for men, up to 14 units per week for women. These should be spread through the week, preferably with at least two alcohol-free days each week. One alcohol unit is a half-pint of beer, 1 measure of spirits, or one small glass of wine.

Contact your doctor if your angina attacks become more frequent or more severe. This is especially important if your angina develops at rest or on minimal exertion, or if GTN seems to become less effective. If the angina is worsening, or occurs on only slight exertion or at rest, your doctor is likely to suggest referral to a cardiologist.

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