



Coronary Heart Disease



Condition Leaflet Number 3. Use this leaflet with Drug Leaflet Number 3.

What is Coronary Heart Disease?

Coronary heart disease (CHD) is the term used to describe a blockage in the coronary arteries supplying the heart. This can be a partial blockage caused by a build up of fatty-substances where you may experience chest pains; this is known as angina. If the artery becomes completely blocked and blood cannot reach the heart you may experience a heart attack, the medical term for a heart attack is a myocardial infarction.

CHD is the biggest cause of death in the UK causing around 94,000 deaths annually. It is estimated that around 1 in 5 men and 1 in 7 women die from the disease. Coronary heart disease is linked with other medical conditions such as high blood pressure, stroke and dementia so current treatment aims to reduce blood pressure, decrease cholesterol and fats that could be deposited in coronary arteries and to reduce the demand on the heart.

Causes of Coronary Heart Disease? Why is it happening to me?

The main cause of CHD is a build-up of fatty plaques in the lining of coronary arteries meaning blood flow to essential organs like the heart is reduced or restricted. The fatty deposits termed 'atheroma' are mainly cholesterol and other waste substances. The name for a build-up of atheroma is atherosclerosis and you are at a significantly increased risk of atherosclerosis if you:-

- ❖ smoke
- ❖ have diabetes
- ❖ have high blood pressure
- ❖ have high cholesterol levels
- ❖ don't exercise very often
- ❖ are overweight
- ❖ have a family history of CHD

Symptoms

Symptoms are different depending on whether your arteries are partially or completely blocked.

Partially blocked arteries can cause you to experience angina pain. This can be a mild, uncomfortable pain similar to indigestion however sometimes angina attacks are more severe and can cause a tightening pain across the chest that may spread to the neck, jaw and arms. Symptoms are triggered by physical exertion or stress and usually pass in less than 10 minutes but can be relieved with a type of treatment called a GTN spray or tablet.

Completely blocked arteries can cause a heart attack. These cause permanent damage to the heart muscle so if you suspect you or someone you know is having a heart attack **call 999 immediately**. Early symptoms can be very similar to angina but more severe and other symptoms can also be experienced. These include:-

- ❖ sweating
- ❖ nausea
- ❖ light-headedness
- ❖ breathlessness

Heart attacks can occur at any time, including at rest. If your symptoms last longer than 10 minutes or are not relieved by TWO GTN sprays or a tablet **seek immediate medical assistance**.

Diagnosis

If you are experiencing any of the symptoms listed above, make an appointment to see your GP, he will perform an assessment of cardiovascular risk which includes checking you for your risk of CHD, heart attack or stroke. This will most likely include a discussion of your medical and family history to confirm if there is heart disease in your family. He/she may also ask about your lifestyle, including questions such as do you or have you ever smoked, do you exercise etc. Tests may also be performed to determine your cholesterol level and your GP will most likely check your blood pressure. Your GP should then refer you for more tests if he/she suspects a diagnosis of CHD. These may include:-

- ❖ ECG - this test looks at the rhythm and electrical activity of the heart, it may be performed when you are resting or exercising; this is known as a 'stress test'.
- ❖ X-Ray - this test looks at the heart, chest and lungs to rule out other conditions that may be causing your symptoms.
- ❖ Angiography - this test is performed while you are under local anaesthetic and involves a flexible tube called a catheter being inserted into either your groin or arm and directed to your coronary arteries. A dye is fed into the tube to show up the arteries that supply your heart with blood and if there are any blockages these are highlighted on X-Ray pictures taken during the process.

- ❖ Blood Tests - these are aside from the cholesterol test you had with the GP. These tests look at enzymes in the heart to show if there is any damage to the heart muscle or another gland called the thyroid.

Treatment

Treatment of CHD involves a combination of lifestyle changes and medicines:

Stopping smoking, eating a low-fat and high-fibre diet (including 5 portions of fresh fruit and vegetables daily and a mixture of carbohydrates, meat and oily fish), trying to limit your salt consumption to under 6g per day (this is about one teaspoonful), avoiding foods high in saturated fats (such as meat pies, cakes and butter) - this will also help you to maintain a healthy weight, keeping your alcohol levels in line with government targets of 14 units a week for women and 21 units a week for men and exercising often, all reduce the risk of you having or having another, heart attack. If you stop smoking quickly after a heart attack your risk drops to near that of a non-smoker.

Medical treatment for CHD can involve lots of different classes of drugs. Drugs for relief of symptoms include GTN sprays and tablets. These provide relief from angina attacks and should be sprayed or placed under the tongue. Other drugs are used to prevent angina and include beta blockers such as bisoprolol, calcium channel blockers such as diltiazem and amlodipine and other drugs such as ivabradine, ranolazine, nicorandil and isosorbide mononitrate.

Because CHD is linked to other conditions such as high blood pressure and stroke there are other medications that your GP might prescribe you that aren't to relieve symptoms of angina but are to keep you healthy overall and to reduce the risk of heart attacks or a stroke. These include drugs such as dispersible or enteric coated aspirin 75mg to help with your circulation, a statin such as simvastatin to reduce your cholesterol and prevent further atherosclerosis and an ACE inhibitor such as lisinopril to help keep your blood pressure from rising too high.

For further detailed information including how these drugs work in CHD, doses, side effects and interactions please refer to drug leaflet number 3 - drugs used to treat CHD.

Monitoring Needed

Your GP will either yearly or 6 monthly ask you to come in for a blood pressure check, he should also check your cholesterol levels, how you are getting on with your medication, if you are experiencing any side effects and if your symptoms are improving.

Further Information

If you are confused about any information you have read or been given it is always beneficial to speak to a healthcare professional such as a doctor, pharmacist or nurse. Each of these people are specialists in different aspects of medicine and will always help to answer any questions you have about any aspect of your condition.

If you feel you would like to read up on specific information about medicines used to treat coronary heart disease or the condition itself these websites may be beneficial to you:-

❖ British Heart Foundation

-The British Heart Foundation is a charity that provides help and support to patients with CHD and heart failure. The information they provide can be very useful. Available at:

<http://www.bhf.org.uk/heart-health/conditions/angina.aspx> and
<http://www.bhf.org.uk/heart-health/conditions/heart-attack.aspx>

❖ NICE

- The Angina Quick Reference Guide from the National Institute of Health and Clinical Excellence, the institution that initiates guidance for healthcare professionals for clinical conditions. Available at:

<http://guidance.nice.org.uk/CG126/NICEGuidance>

❖ Patient.co.uk.

-This website aims to give patients a bit more insight into their conditions/medication in a language they can understand. It is available at: <http://www.patient.co.uk/doctor/stable-angina>

❖ NHS Choices.

-Another website that aims to provide patients with relevant understandable information. Available at:
<http://www.nhs.uk/Conditions/Coronary-heart-disease/Pages/Introduction.aspx>



Drugs Used to Treat Coronary Heart Disease



Drug Leaflet Number 3. Use this leaflet with Condition Leaflet Number 3.

The information contained in this leaflet should provide you with in-depth detail on the medicines you will be or have already been, prescribed for the treatment coronary heart disease. You should refer to this leaflet after reading condition leaflet 3 - Coronary Heart Disease, which aims to give you a detailed overview of the condition. The drugs named are those most favoured by the general practitioners at Beech Hill Medical Centre, Wigan.

First-Line Therapy

You will be provided with a medicine called a GTN spray, or tablets if you prefer, to relieve the symptoms of angina if and when they occur and also to prevent further episodes happening. These medicines must be sprayed (or placed if you have been given tablets) under the tongue when you feel an attack coming on. You should try to sit down or find something to hold on to and wait five minutes for the spray or tablet to work. This process can be repeated a second time if the first attempt doesn't completely get rid of the chest pain but you should **call 999** 5 minutes after the second dose if you are feeling no relief. This medicine can be used preventively (by the same method) if you know you are going to be exerting yourself. Always carry this medicine with you when you leave the house.



As well as a GTN spray you will be given tablets to prevent further angina/heart attacks. First line treatment starts with either a beta blocker or a rate-limiting calcium channel blocker. The most commonly used beta blockers for this condition at your surgery are bisoprolol and atenolol. These work by reducing the workload of the heart.

Calcium channel blockers are used first-line if you cannot take a beta blocker for medical reasons or they haven't worked for you. The two calcium channel blockers used to treat this condition first line are diltiazem and verapamil. Certain preparations of diltiazem needs to be prescribed by their brand name so you may recognise brands such as Dilzem, Adizem or Slozem.



If either of these tablets alone doesn't manage your symptoms as well as your doctor would like, the two types of tablets, calcium channel blockers and beta blockers can be combined. In this case the type of calcium channel blocker you take should be switched to one that doesn't affect the rate that your heart beats as much as diltiazem or verapamil does. You may be placed on either amlodipine or nifedipine to use alongside your beta blocker.

Second-Line Therapy

If your symptoms are still not controlled using a beta blocker and a calcium channel blocker together your doctor may add a third drug. At this point he/she has some choices. They can choose from isosorbide mononitrate which is a longer acting formulation than that in your GTN spray/tablet, nicorandil, ranolazine or ivabradine. The most commonly used anti-anginal at this point in your surgery is isosorbide mononitrate.



Other Medication

Because coronary heart disease is linked with other conditions such as high blood pressure, stroke and heart attacks, it is important to keep your blood pressure at the right level and circulation flowing freely to prevent clots that could cause a heart attack. Additional medication from that discussed above will be added and may include:-

- ❖ An ACE inhibitor - this drug helps to keep your blood pressure at a target of 140/90mmHg
- ❖ Dispersible or enteric coated aspirin 75mg - this drug helps keep your circulation flowing correctly
- ❖ A statin - this drug prevents fatty deposits building up inside your arteries by lowering your cholesterol level

ACE Inhibitor

These drugs work by inhibiting the action of an enzyme that works to raise blood pressure. The ACE inhibitors most commonly used to reduce blood pressure at your surgery are lisinopril, ramipril and enalapril. The dose is ONE to be taken DAILY.



Dispersible/Enteric Coated Aspirin 75mg

This drug is what is known as an anti-platelet meaning it prevents your red blood cells and platelets collecting together and forming a clot which could get stuck in a blocked vein or artery causing a heart attack or stroke.



This medication can irritate your stomach so you should take it with or just after food and the dose is ONE tablet to be taken DAILY, ideally in the morning with your breakfast. If for any reason you cannot take aspirin your GP will prescribe you a different antiplatelet such as clopidogrel or ticagrelor.

Statin

This drug prevents fatty deposits called atheroma building up your arteries causing them to narrow. It works by lowering your cholesterol and as cholesterol is produced at night you need to take it before you go to bed. The most commonly prescribed statin at your surgery is simvastatin. The dose is ONE tablet to be taken at NIGHT.



Side Effects

Common side effects of nitrates such as GTN and isosorbide mononitrate are headaches, flushing and light-headedness. These are usually more apparent during the first few weeks of using the drugs and tend to reduce with use.

Calcium channel blockers can cause headaches and dizziness, these are usually mild but if you are concerned, speak to your doctor or pharmacist.

Beta blockers can cause disturbances with sleep, tingling and coldness in the extremities and nausea.

A common side effect of ACE inhibitors is a dry cough. Many patients unfortunately suffer from this but an alternative class of drugs are available that don't cause the dry cough or a preparation such as simple linctus can relieve it.

Statins can cause muscle aches and pains. These are usually manageable but if they become severe make an appointment to see your doctor as muscle wastage can develop which is a serious condition

Interactions

Because of the way ACE inhibitors, angiotensin 2 receptor blockers and beta blockers work they can interact with medicines such as decongestants (these are found in many cold and flu remedies e.g. Sudafed and Lemsip). You should avoid using these decongestants if you are taking one of these types of medicines. Decongestants you can take include menthol preparations such as Albas Oil.

These medicines can also interact with anti-inflammatories such as ibuprofen that are able to be bought over the counter and are present in many muscle rub preparations. Always tell your pharmacist if you are taking an ACE inhibitor, angiotensin 2 receptor blocker or a beta blocker before you buy any anti-inflammatories over the counter.

Statins interact with certain classes of antibiotics called macrolides and some antifungals. If you are prescribed clarithromycin, erythromycin or clindamycin or antifungals such as itraconazole, fluconazole or ketoconazole you should discontinue your statin whilst you are taking the course of antibiotics or antifungals. Some of these antifungals are found in many over-the-counter preparations for thrush so be cautious if purchasing one of these products.

Statins also interact with grapefruit juice so you should avoid this if you take statins.

Further Information

If you feel you would like to read up on specific information about medicines used to treat coronary heart disease these websites may be beneficial to you:-

❖ **Patient.co.uk**

This section of the website aims to provide patients with information on many classes of drugs in a language they can understand. Available at: <http://www.patient.co.uk/dils.asp>

❖ **Electronic Medicines Compendium.**

This website isn't aimed at patients so you may find it complicated but provides the patient information leaflet found inside the box of a particular drug or a summary of the product characteristics according to the manufacturer of the medicine. Available at: <http://www.medicines.org.uk/emc/>