



Your Heart Failure Medicines

*Understanding how they protect your
heart and improve your symptoms*

For those with HFrEF



Let’s Talk About Medications

Over the last twenty years there have been significant developments in the treatment for Heart Failure, and these have been shown to improve your quality of life and extend your life expectancy. There has also been tremendous development in care and services that will support you going forward to live well with Heart Failure. Taking your prescribed medication is essential to creating the foundations to helping you live better with your Heart Failure.

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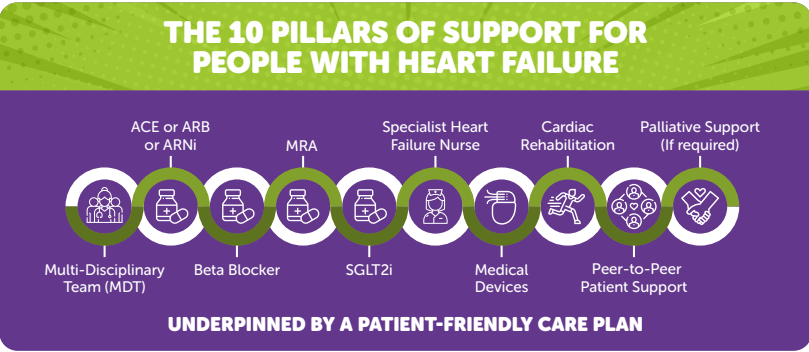
Please Note: This booklet should not replace and/or substitute the interactions with and advice you are given by your healthcare professional. If you have any concerns about your condition then do discuss them with your healthcare professional at the earliest opportunity. For further information on medicines, visit www.nhs.uk

The Marvellous Heart Failure Medicines

Here are the medicines that you are most likely to be prescribed according to NICE (National Institute of Health and Care Excellence) Guidelines and subsequent appraisals of other treatments called technology appraisals. NICE produce guidelines and technology appraisals for how you should be treated when you have Heart Failure. We have described what they do and the role they play in your care. We have included the most common side effects; however, you will find a comprehensive list of side effects in the leaflet that is found in all packets of your prescribed medications. People often react differently to medicines and some are able to cope with higher dosages of a specific medicine when others are unable to do so.

With Heart Failure medication you may find that other medicines will change in order to get you on appropriate dosages of a particular medicine, or your Heart Failure team will alter the dose of your medicines either up or down if your symptoms change. It sounds complex, and yes, it is, but remember they are there to help. The medications we are discussing today are for when your heart is not pumping blood out efficiently. The type is called Heart Failure with reduced Ejection Fraction (HFrEF) or Heart Failure with mildly reduced Ejection Fraction (HFmrEF).

If you have been informed that your heart doesn’t relax and fill properly, this type is called Heart Failure with preserved Ejection Fraction (HFpEF) – please note, this booklet is not applicable to you as you have a different type of Heart Failure. For more information on HFpEF, please read our resource My Marvellous Guide to Heart Failure with preserved Ejection Fraction. If you are not on any of the medications, or a combination of them, then discuss with your Heart Failure team. There may be reasons as to why you are not on certain medication(s), but do ask if you have any queries or concerns. Scan the QR code or visit <http://qr.pumpingmarvellous.org/medshpfef>



Ace Inhibitors

These tablets are easy to remember as they usually end in ‘pril’ such as Ramipril, Lisinopril, Perindopril, Enalapril.

What do they do? ACE Inhibitors ease the workload of the heart by relaxing the blood vessels around the body, thus easing the strain on the heart. They have been shown to stop your Heart Failure getting worse, improve your quality of life and help you to live longer.

Other reasons ACE Inhibitors are prescribed? They may be prescribed to reduce blood pressure and protect you from having a heart attack as they improve blood supply to the muscle of your heart.

What are the most common side effects? You may experience a dry and irritable cough. This often settles down, however if it does fail to settle and is keeping you awake at night, then tell a member of your Heart Failure team as they may be able to prescribe an alternative. They can make you feel dizzy, especially when you stand up as the medication does lower your blood pressure. Again, this often settles, so take your time standing up as this often helps.

More unusual side effects? If they cause your lips, mouth or face to swell, then contact a member of your Heart Failure team straight away. It may mean you are having a reaction to the medication, although it is rare you will need to get medical help. Other side effects include rash or itching.

How do I take them? You will have a blood test before you start the medication and each time your tablets are increased. Occasionally, they may disturb your kidney function. They will always be prescribed at a low dose at first, with the aim to get you on the top dose which is the optimal dose for you. Usually, you will be seen approximately two weeks after you are first prescribed them, have a blood test to check your kidney function and have your blood pressure checked just to make sure it hasn’t dropped significantly. It can be a long process in order to get you on the top dose of ACE Inhibitor that your body can cope with. You may be advised to take them before you go to bed, as the reason is that if your blood pressure drops you will not notice it during the night. Alternatively, they may advise you to take them in split dosages as your body is able to cope with them better this way. As always, do discuss with your Heart Failure team any concerns you may have.

Ivabradine

What does it do? Having the correct heart rate in Heart Failure is important. To do this, your team may introduce a medicine called Ivabradine. By slowing the heart rate, the heart needs to do less work to pump blood around the body, so that it can beat slower and stronger. If Beta Blockers have not controlled your heart rate sufficiently well, Ivabradine may be added, or if you haven’t been able to tolerate a Beta Blocker then your Heart Failure team may prescribe Ivabradine instead.

What are the main side effects? Your heart rate may slow down too much so you will be monitored closely when you start the medicine. You may get a headache or a feeling of dizziness. On rare occasions, patients have experienced some bright or blurred vision. Discuss any issues or concerns with your clinician.

ARBs – Angiotensin Receptor Blockers

These drugs work very similarly to ACE Inhibitors. They can be remembered as they often end in ‘-artan’ (e.g. candesartan, losartan). They have all the same aims, side effects and ways to be taken just like ACE Inhibitors; however, the trial evidence is not so strong for them, but they may help prevent you getting a dry, irritable cough that some experience with the ACE Inhibitors.

Beta Blockers

These drugs are easy to remember as they usually end in ‘-lol’ (e.g. Bisoprolol, Carvedilol, Nebivolol, Metoprolol).

What do they do? Beta Blockers help your heart to beat slower but stronger by the blocking of certain hormones such as adrenaline. They have been shown to increase your chances of living longer if you have Heart Failure.

Other reasons Beta Blockers are prescribed? They are also able to control your heart rate and help keep any heart rhythm problems under control. You may also have them prescribed if you have angina symptoms.

What are the most common side effects? When you first start to take Beta Blockers they may make you feel tired and weary, but usually this settles down over a few days. They can make your heart rate slow down too much; therefore, you are usually checked over by your Heart Failure team after approximately two weeks to see how you are responding to taking them. If you begin to feel more breathless or feel as though you may faint, arrange to see a member of your Heart Failure team as soon as you can. They can make you feel dizzy and experience cold hands and feet. More rarely they can cause vomiting and diarrhoea, sleep disturbance or impotence. Do speak to your clinician to discuss any concerns you may have. Remind your clinician if you have asthma as occasionally Beta Blockers may make your asthma worse.

How do I take them? As with ACE Inhibitors, you will start off on a low dose of the drug and gradually have it increased until you are on the top dose, or a dose that you are comfortable with. It can be a lengthy process for some patients as they can feel a little worse until their body gets used to the Beta Blocker. Be prepared to give the drug a chance as we know that they are very beneficial to patients who have Heart Failure. You will have your heart rate and blood pressure checked each time you have your dose increased just to make sure that they haven’t been adversely affected.

Diuretics or Water Tablets

You are likely to find yourself on water tablets (diuretics), and you may find you have to take more than one type of water tablet.

Mineralocorticoid Antagonists – MRAs

What do they do? Spironolactone or Eplerenone are the drugs that fall into this class. They help prevent water and salt building up in the body and lower your blood pressure, protecting the heart. They also keep potassium levels in your blood at good levels. These drugs are prescribed to improve your symptoms, particularly any swelling you may have in your feet, legs, stomach or fluid in your lungs. You are usually prescribed a low dose of MRA; however, this may be increased if a large amount of fluid has built up. These are evidence-based and typically have less diuretic effect but have other actions which protect the heart.

Other reasons MRAs are prescribed? They may also be prescribed if there is congestion of the liver or low potassium levels because of hormonal problems in the adrenal gland.

What are the most common side effects? Excessive potassium levels and affected kidney function. They may give you diarrhoea and Spironolactone may cause slightly enlarged/tender breasts in men (gynaecomastia).

How do I take them? When you first start to take these drugs, you will need to have a blood test every one to four weeks in order to check that your potassium levels and kidney function are not being adversely affected. Your clinician will arrange for this blood test to be taken on a regular basis approximately every three to six months.

Other Water Tablets (Diuretics)

There are several other groups of water tablets that are prescribed in Heart Failure. Commonly prescribed are **Furosemide** or **Bumetanide** (loops), and as an add-on **Bendroflumethiazide** or **Metolazone (Thiazide)**. If you are prescribed a ‘Thiazide’ then check with your Heart Failure team if they are to be a temporary or regular part of your medicines.

What do they do? Loop diuretics are water tablets that reduce excess fluid build-up. Loop diuretics are used specifically for fluid retention and frequently for people with Heart Failure. They work by helping the kidneys get rid of the fluid. They may make you pass more water, but they do make you feel better by getting rid of the fluid that is causing your feet, legs, and stomach to swell. They may help your breathing by getting rid of any fluid in your lungs. Loop diuretics will vary in dosage depending on symptoms and weight.

What are the main side effects? You will go to the toilet a lot more as you get rid of any extra fluid you may have; this is a good thing as it improves your symptoms. However, you may find it very troublesome so it is good to talk with your Heart Failure team on how you can take your tablets and how they can fit in with your lifestyle (e.g. shopping or dining out). You may experience some lightheadedness or dizziness, cramps, particularly at night, or more rarely, gout. If you experience any of these symptoms do discuss with your Heart Failure team.

How do I take them? Your clinician should discuss with you when it is best for you to take your water tablets, usually they are prescribed to take first thing in the morning. If your symptoms are becoming worse, they may suggest that you go into hospital and have the medication delivered via a drip, either as an inpatient or day patient. In some areas, this treatment can be provided at home. Ask what services are available in your area.

For further information on medication, visit NHS Choices at www.nhs.uk



ARNI – Angiotensin Receptor-Neprilysin Inhibitor: Sacubitril/Valsartan (Entresto)

What do they do? Sacubitril/Valsartan works in two ways: by increasing the body’s defences against Heart Failure and by blocking the body’s natural systems which have a harmful effect on the heart. They are then able to relax your blood vessels and get rid of the extra salt and fluid, meaning the heart has less to do. The NHS in England, Wales, Northern Ireland and Scotland all have a slightly different guidance on prescribing this tablet. It may be prescribed to replace the ACE or ARB you may already be on, however, sometimes it may be considered without first prescribing an ACE or an ARB.

What are the main side effects? The main side effects are very similar to ACE Inhibitors and ARBs. They do lower your blood pressure, so you may experience some dizziness. If you experience any swelling to the face, lips or tongue, or any breathing or swallowing problems then seek medical help.

How do I take them? Generally, you will have already been on ACE Inhibitors or ARBs before your clinician prescribes Sacubitril/Valsartan. You will start on a low dosage which will be gradually increased. You will have a blood test before you start the drug and each time you have the drug increased just to check it hasn’t affected your kidney function and potassium levels.

Note: Entresto will replace an ACE or an ARB so you would need to stop taking these tablets before starting Entresto as they can’t be taken together.

Other Medicines used in Heart Failure

We have discussed the most likely medicines you will find yourself on, however, here are some other medicines that you may find are recommended to you.

Amiodarone — This is used to treat an irregular heart rhythm. It is a very useful medicine but can have unpleasant side effects. Your skin may become photo-sensitive — therefore, you will need to use a high factor sun block, even on a cloudy day. Blue or grey marks may also appear on areas exposed to the sun, particularly the face. Nausea and lethargy may be an issue, as well as blurred vision. Your Heart Failure team will also ensure that you have routine blood tests to ensure your liver and thyroid functions are not affected. They may even request a chest X-ray as deposits have been known to build up in the lungs. Patients have also noted a metallic taste or have experienced difficulties in sleeping, occasionally due to nightmares.

Digoxin — If you have a normal heart rate and heart rhythm, and despite treatment, you still experience symptoms of Heart Failure you may be prescribed Digoxin. Digoxin improves the contractility (squeezing) of your heart and slows your heart rate. Common side effects include a heart rate that is too slow, nausea, vomiting or loss of appetite.

Hydralazine and Isosorbide Dinitrate (H-ISDN) — If you are not able to tolerate an ACE Inhibitor or ARB then you may be prescribed this drug, and although it works in the same way, it is not as effective. It may cause some dizziness or lightheadedness.

Glyceryl Trinitrate Tablets and Spray

Glyceryl Trinitrate (GTN) is prescribed to relieve angina. Angina is pain, discomfort or tightness in the chest due to narrowing of the arteries supplying the heart muscle with blood (coronary heart disease).

GTN comes in tablet and spray formulations that can be put on or under the tongue for quick onset. They are used to provide rapid relief from angina symptoms. They can also be used for when angina pain is expected to happen, such as before exercise that is likely to cause chest pain (for example, before climbing stairs). GTN works in two ways. It mainly relaxes blood vessels in your body (causing them to widen) and this reduces the strain on your heart, making it easier for your heart to pump blood around your body. It also, to a lesser extent, relaxes and widens blood vessels in your heart (coronary arteries), which increases the flow of blood to your heart muscle. The following tips for using GTN are adopted with permission from the ‘GTN Card Project’ by Dr Rani Khatib and the Cardiac Rehab Team at Leeds Teaching Hospitals NHS Trust.

GTN Tablets — 10 Minute Rule: If you experience chest pain (angina), chest ache or chest discomfort, you should: stop what you are doing, sit down and rest. If the pain persists, place one tablet under your tongue and wait 5 minutes. If the pain is still present, use another tablet and wait 5 minutes. If the pain is still present, ring 999 and unlock your door. If your pain gets severe at any stage, or if you feel unwell (e.g. dizzy, short of breath, sweaty) call 999 immediately. It is wise to always carry the details of a next of kin should you experience any difficulties.

GTN Spray — This should be sprayed under or on your tongue. Sit down before using as GTN may make you feel lightheaded. Carry your GTN at all times and don’t hesitate to use it. Keep several GTN bottles, e.g. at home, at work, in a bag. Your healthcare team may advise two sprays per dose. If the spray was not used for a long time, spray it in the air a few times before using and check the expiration date.

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Iron Deficiency

Iron is used to make red blood cells which help store and transport oxygen in the blood to all parts of your body. Iron deficiency is a lack of iron and can lead to anaemia. It is beginning to be understood that iron deficiency is often present in Heart Failure. We have now begun to realise that some patients with Heart Failure are unable to use iron correctly, either being unable to absorb it or being unable to use it for what the body intended. This may make the symptoms of Heart Failure worse. Looking at the link between iron deficiency and Heart Failure is part of ongoing research. You may find that your clinician will check your iron levels, particularly your ferritin levels. Ferritin is the protein that stores iron in the body. If your ferritin levels are found to be low, your healthcare professionals may arrange for you to receive iron therapy treatment. This involves having an intravenous infusion (drip), possibly over a number of sessions either in hospital or a day clinic.

Note: normal ferritin levels in patients with Heart Failure are different to those without Heart Failure. This is one of the reasons why healthcare professionals may not spot iron deficiency in Heart Failure patients because they look at the wrong reference range.

Treatments

Highlighted sections represent the four pillar medications: Beta Blockers, RAAS Inhibitors (ACE or ARNI or ARB), Mineralocorticoid Antagonists (MRA), SGLT2 Inhibitors Receptor. Please note you will be only on one type of ACE, ARNI or ARB.			
Treatment Name	May be called	Prescribed by	What it does
ACE Inhibitor (ends in “-pril” or ARB* ends in “-sartan”) *ARB only offered if ACE or ARNI not tolerated	Ramipril, Enalapril, Lisinopril, Candesartan, Losartan	GP/Heart Failure Specialist	Relaxes blood vessels to reduce strain on the heart
ARNI (Angiotensin Receptor-Neprilysin Inhibitor)	Sacubitril Valsartan (Entresto)	GP/Heart Failure Specialist	Enhances protective systems that protect your heart & lowers blood pressure
Beta Blocker (ends in “-lol”)	Bisoprolol, Carvedilol	GP/Heart Failure Specialist	Makes your heart beat slower and stronger
Mineralocorticoid Receptor Antagonist – MRA	Spironolactone, Eplerenone	GP/Heart Failure Specialist	Reduces excess fluid build-up
SGLT2 Sodium-Glucose Co-Transporter 2 Inhibitor or ending in “-gliflozins”	Dapagliflozin, Empagliflozin	GP/Heart Failure Specialist	Decreases absorption of sugar in the kidneys and reduces fluid build-up
Diuretics	Furosemide, Bumetanide, Torsemide	GP/Heart Failure Specialist	Reduces excess fluid build-up
Hyperpolarisation-activated Cyclic Nucleotide-gated (HCN) Channel Blockers	Ivabradine	Heart Failure Specialist	Reduces heart rate when rate is more than expected when in normal rhythm
*Other tablets may be prescribed depending on why you have Heart Failure.			

SGLT2 Inhibitors

SGLT2 Inhibitors are an important addition to your standard treatment of symptomatic chronic Heart Failure with reduced Ejection Fraction (HFrEF). They are:

- Well tolerated by patients
- Can be prescribed by your GP or Heart Failure specialist

What do they do? SGLT2 Inhibitors have shown benefit to patients with Heart Failure caused by a pumping problem with their heart (HFrEF – Heart Failure with reduced Ejection Fraction). If a patient is experiencing Heart Failure symptoms despite being on optimised therapy, a GP may, on the advice of a Heart Failure specialist, prescribe an SGLT2 Inhibitor as an additional medication to their standard treatment. In addition to improving symptoms, clinical trials of SGLT2 Inhibitors have shown a reduced possibility of being admitted to hospital with Heart Failure and also an improved length of life.

Other reasons for being prescribed? In insufficiently controlled type 2 diabetes, SGLT2 Inhibitors are prescribed to reduce blood sugar levels but in clinical trials also reduced admissions to hospital with Heart Failure. More recent trials have shown they are also beneficial to patients with symptomatic chronic Heart Failure with reduced Ejection Fraction, despite being optimised on standard Heart Failure medication.

What are the most common side effects? SGLT2 Inhibitors are well tolerated. Common side effects include dizziness, rash, back pain and increased frequency of passing urine. If the patient has diabetes, then thrush (candidal genital infection), urinary tract infection and a more unusual side effect known as diabetic ketoacidosis (DKA) may also occur.¹ Patients with DKA are unwell and may experience excessive thirst, sickness, tummy pain and a sweet smell on their breath in addition to feeling tired or confused. Consult your Heart Failure team or GP if you are concerned with any side effects you may be experiencing.

How do I take them? You may need blood tests to monitor how you react to the medication, mainly concerning kidney function and blood sugar levels. If you already have diabetes, some adjustment to your usual diabetic medicines may be necessary to ensure that your blood sugar levels do not go too low. Dapagliflozin and Empagliflozin, for example, are both one tablet per day medicines and you may take them any time of the day, but it is best if you take them at a regular time each day. Dapagliflozin and Empagliflozin can be part of your “Sick Day Rules”. Please discuss this with your healthcare professional.

¹ www.nice.org.uk/guidance/ta697. www.nice.org.uk/guidance/ta773

Anticoagulation Therapy

Recently, medicines have been developed as alternatives to Warfarin. Dabigatran, Rivaroxaban, Edoxaban or Apixaban are all anticoagulants, but work in a slightly different way to Warfarin. The advantage of these drugs is that you do not require regular blood tests, however, you will need your kidney function testing once/twice a year. Anticoagulants help prevent blood clots. They are given to people who have a high risk of developing blood clots, in order to reduce their chances of developing a stroke. Anticoagulants work by reducing the clotting ability of your blood. They are sometimes called blood thinners but they don’t actually thin your blood. **Many patients with atrial fibrillation or a heart valve condition are recommended to take Warfarin to reduce their risk of forming clots, which may then lead to a patient experiencing a stroke. It needs to be given to you in a very precise manner. Therefore, you will need to have regular blood tests to ensure that your blood becomes neither too thin (so that you will bleed excessively) or not thin enough (so that it does not prevent clots forming). If you are prescribed Warfarin, you will have regular blood tests to ensure the clotting factor in your blood is at the correct level. This is called your INR.**

Statins

Statins are a group of medicines that aim to lower the level of low-density lipoprotein — LDL (bad cholesterol) in the blood. They do this by reducing the production of it in the liver. You will be prescribed Statins if you have high levels of LDL, as it can lead to hardening and narrowing of the arteries.

We know that it can be a challenge to take so many different medicines, but your treatment is a partnership between you and your Heart Failure team. Remember if you have any concerns about your medicines then do discuss them with your Heart Failure team, it may be that they are able to adjust, provide an alternative or give some broad support about your therapy. What patients and clinicians do know is that they are a very important part of you living well with Heart Failure.

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