Congestive heart failure (CHF)

Summary

- Heart failure refers to the heart’s inability to pump enough blood to satisfy the needs of the body.
- Major causes of heart failure are coronary heart disease and high blood pressure.
- Treatment includes medications, lifestyle changes and surgery.

Heart failure, sometimes called congestive cardiac failure (CCF), is a condition in which the heart muscle is weakened and can’t pump as well as it usually does. The main pumping chambers of the heart (the ventricles) can change size and thickness, and either can’t contract (squeeze) or can’t relax (fill) as well as they should. This triggers fluid retention, particularly in the lungs, legs and abdomen.

The major causes of heart failure include coronary heart disease, hypertension, idiopathic cardiomyopathy and other heart diseases. Of these, coronary heart disease (usually accompanied by a history of past heart attacks) is by far the most common.

The major factors that contribute to coronary heart disease include:

- **obesity**
- unhealthy eating
- **high blood pressure**
- diabetes
- smoking
- physical inactivity.

Heart failure is more common in elderly people. The survival rate for people with this disorder depends on the severity of their condition. Treatments include medication, lifestyle changes and (sometimes) surgery.

Symptoms of heart failure

Symptoms of heart failure include:

- new or worsening shortness of breath (particularly during physical activity or waking you up at night)
- weight gain
- muscular fatigue, tiredness
- swelling of ankles or legs
- swelling of abdomen
- dizziness
- heart palpitations
- chest pain or discomfort in parts of the upper body
- unexplained coughing and wheezing
- loss of appetite
- constipation.

Causes of heart failure

The heart is a double pump made up of four chambers. Deoxygenated blood from the veins enters the right upper chamber (right atrium), is passed to the right lower chamber (right ventricle), and then pumped to the lungs.

Oxygenated blood from the lungs enters the left upper chamber (left atrium) and then enters the left lower
chamber (left ventricle). The blood is then pumped around the body, under pressure, via arteries.

In a person with heart failure, one or both of the ventricles do not empty properly. This leads to increased pressure in the atria (upper chambers) and the nearby veins. This backlog of blood can affect the kidney and lungs—interfering with their function and leading to **fluid retention (oedema)** in the lungs, abdominal organs and legs.

In some people with heart failure, rather than failed pumping of the blood from the ventricle, there is failed relaxation of the ventricle. This also leads to blood pooling under back-pressure.

Heart failure can be caused by several conditions, including:

- past heart attacks from coronary heart disease – this can lead to scarring in the heart muscle and is the most common cause for heart failure
- high blood pressure (hypertension) – the high pressure in the arteries means that the heart must keep pumping more forcefully. It may not be able to keep it up
- heart valve disease – damaged heart valves may allow the blood to flow backwards or may obstruct forward flow
- congenital heart disease – heart abnormalities may be present from birth, such as defective valves or abnormal communications between heart chambers
- Idiopathic cardiomyopathy – this condition is characterised by enlargement of the heart muscle, where the left ventricle enlarges to compensate for poor contraction
- myocarditis – viruses or other infections may damage the heart muscle
- **heart arrhythmia** – rapid heartbeat with irregularity, over a long period of time, can also lead to inefficient contraction and heart failure
- **thyroid disease** – the thyroid gland produces too much of its hormone, thyroxine. This increases the work of the heart and can lead to heart failure.

Factors that can worsen symptoms of heart failure

The symptoms of heart failure can be worsened by a number of factors, including:

- anaemia
- too much salt, fluid, or alcohol in the diet
- pregnancy
- some infections
- kidney diseases
- lung diseases.
- arrhythmias (irregular heart rhythm).

Diagnosis of heart failure

Heart failure can be confirmed with a variety of tests, including:

- **x-rays**
- echocardiography
- exercise stress test
- **resting (ECG)**
- lung function tests
- angiography
- blood tests.

Treatment for heart failure

Treatment for heart failure may include:

- medicines, such as
  - diuretics – to remove excess fluid
• ACE inhibitors – to open up blood vessels, reduce blood pressure and reduce sodium retention and water retention
• certain beta-blockers – to slow the heart rate and reduce its work (ACE inhibitors and beta blockers can increase survival and reduce the likelihood of hospitalisation)
• addressing the underlying disorder – for example, treatment of high blood pressure
• lifestyle changes – such as regular gentle physical activity, losing excess body fat, stopping smoking, adhering to healthy eating patterns with low salt, restricting alcohol and having adequate rest
• insertion of implantable cardiac devices
• surgery – to replace narrowed or leaking heart valves
• coronary bypass surgery – in some cases
• heart transplant – in extreme cases.

Where to get help
• Your doctor
• Heart Foundation Helpline. Tel. 13 11 12

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