**Drug Treatments**

The aim of drug treatment in heart failure is to reduce blood volume, reduce peripheral resistance but also treating any underlying cause of heart failure (CAD).

Diuretics

Diuretics blocks the reabsorption of sodium and chloride, thus increasing it’s urinary excretion, leading to a reduction in blood plasma and volume. This reduces preload and improves pulmonary and systemic venous congestion. Loop diuretics are the most powerful and are most commonly given in treatment of heart failure. They can be given in combination with a thiazide diuretic in severe heart failure patients.

- **Bendroflumethiazide** (thiazide)
- **Furosemide** (loop diuretic)

ACE inhibitors

These inhibit the enzyme ACE, preventing AT1 from becoming AT2. This prevents peripheral vasoconstriction and activation of the sympathetic nervous system. These drugs also prevent the undesirable activation of the RAAS caused by diuretic therapy.

- **Captopril**
- **Enalapril**
- **Lisinopril**

Angiotensin II Receptor Blockers

Same effect as ACE except directly blocks the receptor directly. However unlike ACE, it does not inhibit the breakdown of bradykinin and therefore does not cause a dry cough seen when ACEi are used.

- **Losartan**
- **Candesartan**

β-Blockers

Counteracts the sympathetic nervous system. They are competitive antagonists of β1 receptors on the heart, thus reducing the sympathetic tone on the heart. They also act on the kidneys to reduce renin release. “Start low, go slow” - Start with a low dose and increase dosage slowly at 2-week intervals.

- **Atenolol** (β1 selective)
- **Propranolol** (β1 & β2)

Mineralocorticoid Receptor Antagonists

These act by inhibiting the action of aldosterone on its receptor. This decreases the reabsorption of sodium and water. This reduces blood plasma.

- **Spironolactone**

Digoxin

Compound extracted from the foxglove plant. It can be used to provide rate control in patients with heart failure and atrial fibrillation. In patients with severe heart failure, digoxin reduces the likelihood of hospitalisation for heart failure, although it has no effect on long-term survival.