

PHARMACY

Drug Information

Medications to Control High Blood Pressure



What is High Blood Pressure?

- Blood pressure is the force generated by the heart pump to deliver blood around the body. High blood pressure happens when the force of your blood pushing against the blood vessels is consistently high.
- Many people with high blood pressure may not experience any symptom. However, even without symptom, damage to the blood vessels and the heart may still be present.
- If left untreated, high blood pressure may lead to stroke, heart attack, heart failure, kidney failure and vision loss.

What are the Medications for High Blood Pressure and the Side Effects?

| Medications and How Do They Work | Common Side Effects | Management and Advice |
|---|--|---|
| <p>Angiotensin-Converting Enzyme Inhibitors (ACE-I)</p> <ul style="list-style-type: none"> • <i>Captopril</i> • <i>Enalapril</i> • <i>Lisinopril</i> • <i>Perindopril</i> • <i>Ramipril</i> <p>Angiotensin II Receptor Blockers (ARB)</p> <ul style="list-style-type: none"> • <i>Candesartan</i> • <i>Irbesartan</i> • <i>Losartan</i> • <i>Telmisartan</i> • <i>Valsartan</i> <p><u>How do they work</u> Relax blood vessels and lower high blood pressure.</p> | <ul style="list-style-type: none"> • Dizziness • Dry cough (usually ACE-I) • May cause high Potassium level: dizziness, muscle weakness or fast heart beat • Rare side effects: <ul style="list-style-type: none"> ◦ Swelling of the hands, face, lips, eyes, tongue, or throat ◦ Breathing difficulty ◦ Swallowing difficulty | <ul style="list-style-type: none"> • Get up slowly from sitting or lying position to minimize dizziness • Inform your doctor if you have persistent dry cough, severe dizziness or signs of high Potassium level occur • Inform your doctor if you intend to get pregnant or are currently pregnant • Seek medical attention immediately if any rare side effect occurs |

| Medications and How Do They Work | Common Side Effects | Management and Advice |
|---|--|--|
| <p>Beta Blockers</p> <ul style="list-style-type: none"> • <i>Atenolol</i> • <i>Bisoprolol</i> • <i>Carvedilol</i> • <i>Metoprolol</i> • <i>Nebivolol</i> • <i>Propranolol</i> <p><u>How do they work</u> Allow the heart to beat slower and with less force thereby reducing the pressure in the blood vessels.</p> | <ul style="list-style-type: none"> • Dizziness • Tiredness • Cold hands and feet • Breathlessness • Sexual dysfunction | <ul style="list-style-type: none"> • Get up slowly from a sitting or lying position to minimize dizziness • Symptoms such as tiredness, cold hands and feet may resolve over time • Inform your doctor if breathlessness or persistent giddiness occur • Do not stop taking this medicine without discussing with your doctor as it may worsen your condition |
| <p>Calcium Channel Blockers <i>Dihydropyridine Derivatives:</i></p> <ul style="list-style-type: none"> • <i>Amlodipine</i> • <i>Nifedipine LA (Long Acting)</i> <p><i>Non-dihydropyridine Derivatives:</i></p> <ul style="list-style-type: none"> • <i>Diltiazem*</i> • <i>Verapamil*</i> <p>(*Modified-Release and immediate release formulation available for both medications)</p> <p><u>How do they work</u> Relax blood vessels and reduce blood pressure.</p> | <ul style="list-style-type: none"> • Dizziness • Headache • Flushing of face • Lower leg swelling • Constipation (Especially Verapamil and Diltiazem) | <ul style="list-style-type: none"> • Nifedipine LA and verapamil SR (Sustained Release) should be swallowed whole, do not crush or chew the tablets • Get up slowly from sitting or lying position to minimize dizziness • Inform your doctor if dizziness is persistent • Elevating your legs may help to reduce leg swelling • Include more fibre-rich food (e.g. fruits, vegetables, whole grains) into your diet to reduce constipation |

| Medications and How Do They Work | Common Side Effects | Management and Advice |
|--|---|--|
| <p>Arterial Vasodilator</p> <ul style="list-style-type: none"> • <i>Hydralazine</i> <p><u>How does it work</u> Relax blood vessels to reduce blood pressure.</p> | <ul style="list-style-type: none"> • Dizziness • Headache • Rare side effects: <ul style="list-style-type: none"> ◦ Fast heartbeat ◦ Leg swelling ◦ Drug-induced lupus: fever, rashes, muscle and/or joint pain ◦ Blood disorders: Mouth ulcers, fatigue, fever, sore throat, and/or unexplained bleeding/bruise | <ul style="list-style-type: none"> • Get up slowly from sitting or lying position to minimize dizziness • Seek medical attention immediately if any of the rare side effects occurs |
| <p>Diuretics (“Water pills”)</p> <p><i>Potassium Sparing Diuretics</i></p> <ul style="list-style-type: none"> • <i>Amiloride</i> • <i>Triamterene</i> <p><i>Thiazide Diuretics**</i></p> <ul style="list-style-type: none"> • <i>Hydrochlorothiazide</i> • <i>Indapamide SR (Sustained Release)</i> • <i>Metolazone</i> <p><i>Loop Diuretics**</i></p> <ul style="list-style-type: none"> • <i>Bumetanide</i> • <i>Furosemide</i> <p><u>How do they work</u> Remove salt and water from the body by increasing urine output.</p> | <ul style="list-style-type: none"> • Nausea, vomiting • Dizziness • May cause abnormal Potassium levels: dizziness, muscle weakness, muscle cramp or fast heart beat • Your doctor may prescribe you with Potassium Chloride supplementation to replace loss of Potassium in the urine. Inform your doctor if you cannot swallow the Potassium tablets whole. | <ul style="list-style-type: none"> • Take in the morning or late afternoon to avoid having to wake up often at night to pass urine • Frequent urination is expected. Inform your doctor if you are unable to pass urine • Inform your doctor if experiencing symptoms of abnormal Potassium level |

| Medications and How Do They Work | Common Side Effects | Management and Advice |
|---|---|---|
| Mineralocorticoid Receptor Antagonist <ul style="list-style-type: none"> • <i>Eplerenone</i> • <i>Spirololactone</i> <u>How do they work</u> Remove salt and water from the body by increasing urine output. | <ul style="list-style-type: none"> • Breast tenderness or enlargement (Specific to Spirololactone, especially in males) • Menstrual changes • May cause high Potassium level: dizziness, muscle weakness or fast heart beat | <ul style="list-style-type: none"> • Take after meals for better absorption • Rise slowly from sitting or lying position to minimize dizziness • Inform your doctor if severe dizziness, breast swelling/ pain, menstrual changes, or symptoms of high Potassium level occur |
| Alpha 1 Blockers <ul style="list-style-type: none"> • <i>Doxazosin</i> • <i>Prazosin</i> • <i>Terazosin</i> <u>How do they work</u> Act on central nervous system to relax blood vessels. | <ul style="list-style-type: none"> • Drowsiness • Dizziness • Rare side effect: <ul style="list-style-type: none"> ◦Fast heart beat | <ul style="list-style-type: none"> • Avoid activities that require alertness or coordination if drowsy • Get up slowly from a sitting or lying position to minimize giddiness • Inform your doctor if you experience persistent dizziness, drowsiness or fast heart beat |
| Alpha 2 Agonists <ul style="list-style-type: none"> • <i>Clonidine</i> • <i>Methyldopa</i> <u>How do they work</u> Act on the central nervous system to relax blood vessels. | <ul style="list-style-type: none"> • Dizziness, fatigue • Headache • Rare side effects: <ul style="list-style-type: none"> ◦Yellowing of skin, severe stomach pain, tea-coloured urine ◦Persistent fever, sore throat, flu-like symptoms ◦Sexual dysfunction ◦Unexplained bleeding or bruising ◦Persistent swelling of lower leg or breathlessness | <ul style="list-style-type: none"> • Rise slowly from a sitting or lying position to minimize giddiness • Seek medical attention immediately if any of the rare side effects occurs |

If you develop rashes, facial swelling or shortness of breath after taking the medication, you could be allergic to the medication. Please seek medical attention immediately.

What Else can I do to Help with My High Blood Pressure?

- Aim to keep your weight in the healthy BMI range of 18.5-23.9 kg/m².
- Limit your intake of food that is rich in salt and fat.
- Choose a diet with fruits, vegetable, whole grain, lean meat, low-fat dairy products over processed or canned food to reduce your intake of fats and salt.
- Limit your daily alcohol intake to no more than 2 drinks for men and 1 drink for women (1 drink = 1 can of beer, 1 glass of wine).
- Engage yourself in regular aerobic exercise (For example, brisk walking, jogging, swimming) for 90-150 minutes per week.

How are the Medications Administered / Taken?

- Your doctor may prescribe more than 1 type of medication to lower your blood pressure.
- If you miss a dose, take the missed dose as soon as you remember. If it is almost time for your next dose, take only the usual dose. Do not double the dosage.

Can the Medications be Taken With Other Medications?

- Please inform your doctor or pharmacist if you are taking other medications, including supplements, traditional or herbal remedies.

Do I Need Regular Monitoring When Taking These Medicines?

- Regular monitoring of blood tests may be required.

Are There Any Special Precautions That I Need to Take?

- It is important to inform your doctor if you intend to conceive or breastfeed while taking this medication.

How Do I Store These Medications?

- Store your medication in a cool, dry place away from heat, moisture and direct sunlight.

If you have any problem with your treatment, please contact your doctor, pharmacist or nurse clinician.

Please keep all medications out of reach of children.

