

## Medications to relieve angina

### Type of medications

Glyceryl Trinitrate Sublingual Tablet or Spray

### Common side effects

Severe or ongoing dizziness; throbbing pain, severe or ongoing headache; warmth or redness in your face; fast heartbeat.

### Method of administration

Both the sublingual tablet and spray can immediately relieve angina, but their administration methods are different.

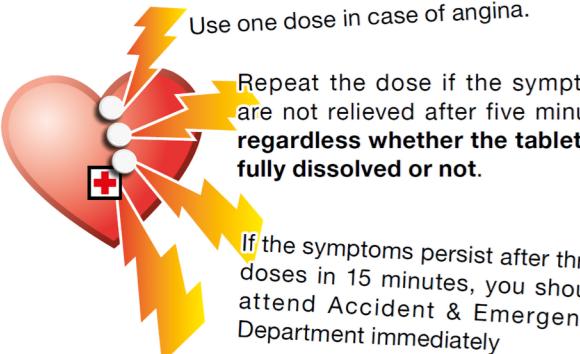
### Sublingual Tablet

DO NOT swallow or chew the sublingual tablets. When angina occurs, sit down to reduce dizziness. Place one tablet under the tongue and allow it to dissolve slowly. Repeat the dose if the symptoms are not relieved after 5 minutes **regardless whether the tablet has fully dissolved or not**. If pain persists after using three tablets in 15 minutes, you should attend Accident & Emergency Department immediately as you may be having a heart attack.

Use one dose in case of angina.

Repeat the dose if the symptoms are not relieved after five minutes, **regardless whether the tablet has fully dissolved or not**.

If the symptoms persist after three doses in 15 minutes, you should attend Accident & Emergency Department immediately



### Sublingual Spray

When angina occurs, sit down to reduce dizziness. Hold the canister upright with the spray nozzle pointing upward and place your finger on the button. The spray nozzle should be pointed towards your mouth. Spray a puff under your tongue by pressing down the pump. Hold your breath while pressing down the pump and close your mouth after the dose. Repeat the puff at 5-minute intervals if the symptoms are not relieved. If pain persists after using three doses in 15 minutes, you should attend Accident & Emergency Department immediately as you may be having a heart attack.

### Precautions

- Carry the medication with you at all times so that you can use it immediately to relieve angina.
- Sit down when using the medication to reduce possible side effects, e.g. throbbing headache, warmth or redness in your face and dizziness.
- If you have used medications prescribed for erectile dysfunction (e.g. sildenafil, tadalafil) within 48 hours, beware that use of GTN sublingual tabs or spray may cause a sudden drop in your blood pressure. Please consult your doctor or pharmacist for details of individual medications.

### Sublingual Tablet

- Store the tablets appropriately to prevent the active ingredient from evaporation (Please refer to "How to Store" section).

### Sublingual Spray

- Before you use a new canister, spray into the air a few times until it produces a fine mist. Priming sprays should be directed away from other people, heat and naked flame (e.g. cigarette). You should also prime the spray if you have not used it for a long time. (According to product insert).
- Do not shake the bottle before use.

## Pharmacist's advice on appropriate medication use

✖ Refusing to use medications because of potential side effects.

✓ Not everyone will experience side effects after using the medications. The severity of side effects also differs among individuals. You should not be too worried about the side effects of the medications. If you stop using the medications or change the dose or frequency due to potential side effects, your conditions may worsen. Most common side effects are mild and will subside when your body adapts to them. Consult your doctor or pharmacist if the side effects persist or worsen.

✖ Reducing the dosage or stopping the medication when angina attacks are less frequent and the disease has improved.

✓ Reduction in the frequency of angina is likely due to better control of the disease. However, reducing or stopping the medication without medical supervision might lead to worsening of the disease condition. Therefore, any changes of the medications should be directed by your doctor.

✖ Glyceryl trinitrate sublingual tablet or spray can relieve angina, therefore it is not necessary to use other medications for prevention of angina.

✓ Angina occurs when the heart does not receive the oxygen it needs to function properly, resulting in damage of heart muscles. Taking preventive medications can reduce the frequency of angina. Therefore, it is important to use the medications regularly according to the instructions.

## What if I miss a dose

- Use the missed dose as soon as you remember. Skip the missed dose if it is almost time for your next scheduled dose.
- Do not double the dose.

## How to store

● The active ingredient evaporates quickly from the glyceryl trinitrate sublingual tablet, especially when there is heat and light. You should follow the below instructions in order to maintain the efficacy of the medication:

- Store in a cool, dry place and away from direct heat and light.
- Do not refrigerate.
- Close the bottle cap tightly after each use.
- Do not put cotton wool in the bottle with tablets because the active ingredient would be absorbed by cotton wool, leading to reduced efficacy.

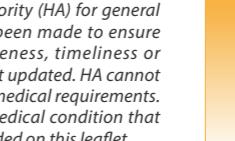
● Store the medication in the original glass container. Do not repack it or keep it in any other containers.

- When you carry the medication with you, do not put it close to your body (e.g. trousers pocket) as heat from body may reduce the drug's effectiveness. You may carry the medication in a handbag or briefcase.

● Do not use the medication eight weeks after first opening of the bottle. Write the date on the bottle when opening for the first time.

- Keep out of reach of children.
- Discard all medications that have expired or are no longer required.
- Do not share the medication with other people.

# Medications for the Heart Antianginal Medications



藥劑職系及服務統籌委員會  
COC-Grae (Pharmaceutical Services)

# What is Angina



Angina is a typical symptom of coronary heart disease. Coronary heart disease is a leading cause of death in cardiovascular diseases. It is mainly caused by gradual accumulation of fatty deposits (atherosclerosis), resulting in the narrowing of coronary vessels. This leads to reduced blood flow and oxygen supply to the heart muscle and results in chest pain. Angina often occurs when the demand for oxygen by heart muscle is higher than the actual supply. For example, during physical activity. Patients suffering from angina usually have uncomfortable pressure, fullness, squeezing or pain in the centre of the chest. The discomfort may spread to the neck, jaw, shoulder or arm.

Besides angina, serious coronary heart disease may also lead to heart attack, and can be fatal. Therefore, early treatment and prevention are very important. Patients with diabetes mellitus, high blood pressure or high cholesterol level are at increased risk of coronary heart disease. These risk factors should be controlled.

There are two main categories of medications for the management of angina:

1. Medications for prevention of angina. They should be used regularly for prevention, and are not effective for relieving angina in an emergency.
2. Glyceryl trinitrate (sublingual tablet or spray) for relieving angina attack immediately.

If you experience increasingly frequent angina, or the symptoms cannot be relieved by three doses of glyceryl trinitrate, you should seek medical attention immediately.

Both medication therapy and lifestyle changes are crucial for the treatment of coronary heart disease.

## Precautions on lifestyle

- Monitor and record blood pressure, blood lipid and blood sugar levels regularly.
- Have a balanced diet. Eat food with less salt, less fat and less cholesterol. Eat plenty of vegetables and fruits.
- Quit smoking. Limit consumption of alcohol and caffeinated beverages.
- Exercise regularly.
- Maintain an appropriate body weight, especially for overweight and obese patients.
- Take enough rest, manage stress and maintain a positive attitude.

## Precautions on medication use

- Use the medications as directed. Do not stop using the medications or change the dose or frequency unless directed by your doctor.
- Use the medications preferably at the same time every day.
- If you have any history of drug allergy, consult your doctor or pharmacist before using the medications.
- Tell your doctor and pharmacist if you are pregnant, planning to become pregnant or breastfeeding.
- Consult your doctor before using any other medications, including health supplements, Traditional Chinese Medicine, Proprietary Chinese Medicines and over-the-counter medications.
- Please consult your doctor or pharmacist if you encounter any difficulties in using the medications.
- Please consult your doctor if symptoms persist or worsen after using the medications.

## Medications for the prevention of angina

Classes of medications	Common side effects	Precautions
<b>Nitrates</b> <b>Oral medication</b> Isosorbide dinitrate, Isosorbide mononitrate  <b>Transdermal patch</b> Glyceryl trinitrate	Severe or ongoing dizziness, mild headache, warmth or redness in your face, fast heartbeat, nausea	<ul style="list-style-type: none"> <li>If the concentration of nitrate in your blood remains high, your body may get used to it and develop 'tolerance', and the nitrate would be less effective. To prevent the development of 'tolerance', your medication is scheduled to leave your blood free of nitrate, or with very low levels of it, for a few hours each day, the so-called 'drug-free period'.</li> <li>Angina mostly occurs in daytime, so the 'drug-free period' can be arranged at night. For example, if a short-acting nitrate is prescribed three times a day, you should take the first dose once you wake up in the morning and the last dose at 7 p.m., this allows your body a 'drug-free period' of more than 10 hours. If a long-acting medication is prescribed twice a day, you should take the first dose once you wake up in the morning and the second dose after 8 hours.</li> <li>Apply a transdermal patch once you wake up in the morning, and remove it after 12 to 16 hours. If angina occurs more frequently at night, 'drug-free period' should be arranged in the morning. Some patients may need to take additional preventive medications, e.g. calcium channel blocker or beta-blocker, to prevent angina for 24 hours.</li> <li>Timing of the 'drug-free period' should be individualised. You should discuss with your doctor or pharmacist.</li> <li>Medications used to treat erectile dysfunction (such as sildenafil, tadalafil) should be avoided if you are using nitrates (including oral and transdermal patch) to avoid potential severe side effects, such as a drastic drop in blood pressure.</li> </ul> <p><b>Oral medication</b></p> <ul style="list-style-type: none"> <li>Controlled release tablets should not be chewed or crushed. It should be swallowed whole.</li> <li>Sit down before taking the medication to reduce side effects such as headache, warmth or redness in your face and dizziness.</li> <p><b>Transdermal patch</b></p> <ul style="list-style-type: none"> <li>Do not use the patch that is broken or damaged. Do not trim or cut the patch.</li> <li>Clean and dry the skin area before application. Apply the patch to skin with little or no hair, free of scars, cut or irritation.</li> <li>You may bathe, shower and exercise while wearing your patch.</li> <li>Do not expose the application site to direct source of heat, such as heating pads, electric pads, heated waterbeds and saunas, as heat may speed up the drug release.</li> <li>Apply each patch to a different area of the body. Do not apply to the same site within 14 days.</li> <li>The patch may contain metal. Remove the patch before MRI scan.</li> </ul> </ul>
<b>Calcium channel blockers</b> e.g. Amlodipine, Diltiazem, Felodipine, Nifedipine	Headache, warmth or redness in your face, swelling in your ankles, nausea, dizziness	Avoid grapefruit or grapefruit juice if you are using certain calcium channel blocker (e.g. felodipine or nifedipine).
<b>Beta-blockers</b> e.g. Atenolol, Metoprolol, Propranolol	Slow heartbeat, cold hands and feet, tiredness, dizziness	<ul style="list-style-type: none"> <li>Patients with asthma and chronic obstructive pulmonary disease should be aware that these medications may cause airway narrowing.</li> <li>Patients taking medications to lower blood sugar or using insulin should be aware that these medications may mask the symptoms of low blood sugar.</li> <li>Seek medical attention immediately if you experience the following symptoms: swelling in your hands, ankles, or feet; or trouble breathing.</li> </ul>
<b>Antiplatelets</b> e.g. Aspirin, Clopidogrel, Ticagrelor	Stomach upset, vomiting of blood or vomit that looks like coffee grounds, bloody / black / tarry stools, shortness of breath or troubled breathing, unusual bleeding or bruising	<ul style="list-style-type: none"> <li>Antiplatelet can reduce the formation of blood clot that blocks the blood vessels.</li> <li>Taking with food can reduce stomach upset.</li> </ul>
<b>Fatty acid oxidation inhibitors</b> Trimetazidine	Stomach upset, dizziness, headache, tiredness	<ul style="list-style-type: none"> <li>Caution in patients using medications for lowering blood pressure. Trimetazidine may cause unsteady gait or low blood pressure and increase the risk of falls.</li> <li>Caution in patients with Parkinson's disease as trimetazidine may worsen the symptoms associated with movement disorder.</li> <li>Seek medical advice immediately if you experience the following symptoms: trembling, unsteady gait, uncontrolled body movement.</li> </ul> <p>Some medications used for preventing angina can also be used for other diseases, e.g. high blood pressure.</p> <p>If you experience sleepiness, dizziness or blurred vision after taking the medications, avoid driving or activities requiring mental alertness or coordination. Avoid alcohol as it may increase the side effects.</p> <p>If you notice any allergic reactions like skin itchiness, face or hand swelling, breathing difficulty, etc., consult your doctor immediately.</p>