



# STABLE ANGINA

## Top tips for MURs

- Check patient understands why medication has been prescribed
- Counsel patient on the need to take medication regularly and address any compliance issues
- Ensure modified release preparations (diltiazem, verapamil & nifedipine) are prescribed by brand name
- Advise patient to take sublingual GTN as soon as symptoms present. Sit down or hold onto something if light headed. Take a second dose after 5 minutes if symptoms persist. Dial 999 if pain continues for 5 minutes after second dose, or sooner if pain worsening or unwell
- Advise patients who use sublingual GTN tablets instead of the spray they expire 8 weeks after opening
- Check patients taking ranolazine are aware they need to carry patient alert card with them at all times
- Ensure patients taking a long-acting nitrate on a twice daily dosage regime take the second dose no later than 8 hours after the first dose, to ensure a daily nitrate-free period to avoid tolerance
- If patients have no improvement in symptoms after taking ivabradine for 3 months<sup>2</sup>, refer to prescriber
- Check patients taking maximum dose of simvastatin 20mg when used in conjunction with amlodipine, verapamil, amiodarone, diltiazem or ranolazine<sup>1</sup>. Higher dose simvastatin can increase risk of myopathy
- Check patients taking ivabradine have resting heart rate monitored and if falls below 50 beats per min or are also prescribed diltiazem or verapamil<sup>2</sup> refer to prescriber
- Advise patient to avoid drinking grapefruit juice if taking calcium channel blockers, statins, ivabradine or ranolazine
- Advise patient not to drive or operate machinery if they are feeling dizzy or lightheaded as a result of their treatment
- Counsel patients on common side effects (see side effects overleaf) and signs / symptoms of complications that need referral (see red flags overleaf)
- Report any relevant adverse drug reactions via the Yellow Card Scheme

## Pathophysiology of angina

Angina is chest pain caused by insufficient blood supply to heart muscle. It is usually caused by coronary artery disease. Stable angina usually occurs with physical exertion or emotional stress and is relieved within minutes of rest. Unstable angina is new onset angina or an abrupt deterioration of previously stable angina.

## Lifestyle issues

- Advise patients who smoke of benefits of smoking cessation and refer to Stop Smoking Wales or Pharmacy Stop Smoking services if willing to stop
- Advise patient to eat a cardioprotective diet - low in fat, sugar and salt and including five portions of fruit and vegetables a day, two portions of fish a week, including oily fish
- Inform patients who express an interest there is no evidence that vitamins or fish oils help stable angina
- Counsel patient on weight reduction if overweight. Signpost local weight management or exercise schemes (see local authority website for information)
- Encourage an increase in physical activity within the limits set by angina symptoms
- Counsel patient on reducing alcohol intake to within safe limits (up to 14 units a week, spread evenly over 3 more days, with several alcohol free days)

## How do drugs used to treat stable angina and prevent a cardiovascular event work?

Beta- adrenoceptor blockers i.e. bisoprolol	Acts on sympathetic nervous system reducing the burden on the heart and reducing cardiac response to stress and exercise, which lowers heart rate, BP and myocardial contractility.
Calcium channel blockers (two types – rate limiting diltiazem & verapamil & dihydropyridines like amlodipine)	Reduces the amount of calcium that goes into muscle cells which helps to ease angina by widening the coronary arteries as well as reducing the force and rate of the heartbeat (this helps to prevent angina pains). The rate limiting drugs also lessen myocardial oxygen demand by slowing down node conduction within the heart.
Nitrates (eg. glyceryl trinitrate, isosorbide mononitrate)	Vasodilation resulting in reduced burden on the heart and improved blood flow to heart muscle.
Potassium-channel activator e.g. Nicorandil	Increases the efflux of potassium from channels in the vascular smooth muscle resulting in inhibition of calcium entry to the cells which leads to dilation of the arteries and arterioles.
Ivabradine	Lowers heart rate by direct effect on sinus node which reduces oxygen demand, increases oxygen supply and better coronary artery perfusion.
Ranolazine	Improves heart muscle relaxation and decreases left ventricular diastolic stiffness by inhibition of sodium in cardiac cells.
Aspirin or clopidogrel	Inhibits platelet aggregation and thrombus formation.
Statin	Inhibits synthesis of cholesterol reducing total cholesterol and LDL-cholesterol. Moderately increases HDL-cholesterol and reduces plasma triglycerides.



## Red flags that need referral

- New onset chest pain or an abrupt deterioration of previously stable angina
- Acute dizziness, syncope, shortness of breath or palpitations
- Hypotension
- Prolonged, unexplained bleeding or dark stools if taking an antiplatelet
- Signs of hepatotoxicity (nausea, vomiting, abdominal pain, loss of appetite and jaundice)
- Signs of myopathy or rhabdomyolysis if taking a statin

## What are the common side effects to look out for?

Drug	Common side effects	Recommendation
B-Blockers	Cold extremities, difficulty breathing, tiredness, sleep disturbance, gastrointestinal complaints	Refer to prescriber for potential change to another beta-blocker.
Calcium channel blockers	Ankle swelling, gingival hyperplasia	Refer to prescriber.
	Headache, flushing, constipation, rash, tiredness,	Take regularly to diminish these effects and use a gentle laxative if constipation remains a problem.
Nitrates (GTN)	Flushing, headache and light-headedness	Transient, sit down or hold onto something if feeling light-headed.
Long acting nitrates (isosorbide mononitrate) & potassium channel activators (nicorandil)	Tachycardia, hypotension, headache and light-headedness, weakness	Advise patient that these symptoms usually disappear with continued treatment. Refer to prescriber if persistent as dose dependant.
Ivabradine	Headache, bradycardia, eye disorders, uncontrolled blood pressure	Refer to prescriber for dose adjustment. Refer if any symptoms of bradycardia present e.g. dizziness, fatigue, hypotension (see MHRA drug safety update June 2014 <sup>4</sup> )
Ranolazine	Headache, dizziness, constipation, nausea	Refer to prescriber.
Aspirin & clopidogrel	Gastro-intestinal disturbances including dyspepsia, nausea, increased bleeding tendency & ulceration	Take medication with milk or food as may reduce symptoms. Refer to prescriber if persistent, or if bleeding is unexplained or significant.
Statins	GI disturbance, headache, hyperglycaemia, myalgia, nasopharyngitis	Refer to prescriber if patient experiences myalgia for further tests.

## Guidance for the use of phosphodiesterase inhibitors with GTN<sup>3</sup>

Sildenafil or vardenafil	Do not use GTN for at least 24 hours before or after taking
Tadalafil	Do not use GTN for at least 48 hours before or after taking
If angina occurs during sexual intercourse, <b>do not use GTN</b> . Stop sexual activity. If pain does not resolve, call 999. Phosphodiesterase inhibitors <b>are contraindicated with long acting nitrates and nicorandil</b> .	

## Potential serious drug interactions?

Anti-anginal medications interact with many other medications such as: alpha-blockers, anti-arrhythmics, antibacterials, anticoagulants, antidepressants, antiepileptics, antifungals, antihistamines, antimalarials, antimuscarinics, antipsychotics, antivirals, atomoxetine, beta-blockers, calcium channel blockers, cardiac glycosides, ciclosporin, clonidine, colchicine, cytotoxics, diuretics, erectile dysfunction drugs (contra-indicated with nitrates and nicorandil), ivabradine, lipid regulating drugs, ranolazine, sympathomimetics, theophylline, ulcer healing drugs - **See BNF Appendix1: Interactions for more details**

## Where can you find more information?

- BNF sub-section 2.6 Nitrates and other antianginal drugs, 2.9 antiplatelets and 2.10
- Cardiovascular disease- cardiovascular risk and stable angina e-learning modules that can be found on WCPPE website (<http://www.wcppe.org.uk>)
- NICE guidance Management of stable angina, CG126 available on the NICE website (<http://www.nice.org.uk>)
- Clinical Knowledge Summary – angina available on the CKS website (<http://www.cks.nice.org.uk>)
- NHS Choices Live Well - healthy living information available online (<http://www.nhs.uk/Livewell>)
- British Heart Foundation (<http://www.bhf.org.uk>)

## References

1. Drug Safety Update, August 2012.
2. Drug Safety Update, December 2014
3. Clinical Knowledge Summary – angina (last revised June 2015) (<http://www.cks.nice.org.uk>)
4. MHRA Drug Safety Update, June 2014