

• all of the above

**Verapamil** is the prototypical **Class IV** (calcium channel blockers) antiarrhythmic agent. It inhibits the intracellular entry of calcium through the slow channels of the calcium dependent tissues of the myocardium, which are concentrated in the SA and AV nodes. It is the drug of choice for the suppression of **paroxysmal supraventricular tachycardias stemming from the AV node** (which is characterized by a rapid cardiac rate, usually 160-190 per minute). Of the calcium channel antagonists available, only verapamil and diltiazem possess significant antiarrhythmic activity.

**Note:** Calcium channel blockers (e.g., verapamil, diltiazem and nifedipine) are useful as **anti-anginal** and antihypertensive agents as well. They block calcium entry through the membranous calcium ion channels of cardiac and vascular smooth muscle.

**This has three effects:**

1. Peripheral arterioles dilate (vasodilators) and total peripheral resistance decreases, reducing after-load and reducing myocardial oxygen requirements.
2. Increases oxygen delivery to the myocardium.
3. Reduces blood pressure if hypertension is present.

**Important:** Nitrites (amyl nitrite) and nitrates (nitroglycerin) are fast-acting antianginal agents that are used to relieve **acute** anginal attacks.

**Note:** For **angina**, nitroglycerin and nifedipine are usually used **before** verapamil.

Drugs used in acute hypertension	
Hypertensive emergencies (parenteral)	Hypertensive urgencies (oral preferred)
Sodium nitroprusside	Clonidine
Nitroglycerin	Nifedipine
Trimethaphan	Captopril
Diazoxide	Labetalol
Hydralazine	