

Southern Illinois Regional EMS System

JJ-29 VERAPAMIL

1. Class:
 - 1.1. Calcium channel blocker (Class IV antidysrhythmic).
2. Description:
 - 2.1. Verapamil is used as an antidysrhythmic, antianginal, and antihypertensive agent. It works by inhibiting the movement of calcium ions across cell membranes. The slow calcium ion current blocked by Verapamil is more important for the activity of the sinoatrial node and atrioventricular node than for many other tissues in the heart. By interfering with this current, calcium channel blockers achieve some selectivity of action. Verapamil decreases atrial automaticity, reduced atrioventricular conduction velocity, and prolongs the atrioventricular nodal refractory period. In addition, Verapamil depresses myocardial contractility, reduces vascular smooth muscle tone, and dilated coronary arteries and arterioles in normal and ischemic tissue.
3. Onset and Duration:
 - 3.1. Onset: 2-5 minutes.
 - 3.2. Duration: 30-60 minutes (up to 4 hours is possible).
4. Indications:
 - 4.1. Paroxysmal supraventricular tachycardias.
 - 4.2. Atrial flutter with rapid ventricular response.
 - 4.3. Atrial fibrillation with a rapid ventricular response.
 - 4.4. Vasospastic and unstable angina.
 - 4.5. Chronic stable angina.
5. Contraindications:
 - 5.1. Hypersensitivity.
 - 5.2. Sick sinus syndrome (unless the patient has a functioning pacemaker).
 - 5.3. Second- or third-degree heart block.
 - 5.4. Sinus bradycardia.
 - 5.5. Hypotension.
 - 5.6. Cardiogenic shock.
 - 5.7. Severe congestive heart failure.
 - 5.8. Wolff-Parkinson-White with atrial fibrillation or flutter.
 - 5.9. Patients receiving IV beta blockers.
 - 5.10. Wide complex tachycardias (Ventricular tachycardia can deteriorate into ventricular fibrillation when calcium channel blockers are given).
6. Adverse Reactions:
 - 6.1. Dizziness.
 - 6.2. Headache.
 - 6.3. Nausea and vomiting.
 - 6.4. Hypotension.
 - 6.5. Bradycardia.
 - 6.6. Complete atrioventricular block.
 - 6.7. Peripheral edema.

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(continued)

7. Drug Interactions:
 - 7.1. Verapamil increases serum concentration of digoxin.
 - 7.2. Beta-adrenergic blockers may have additive negative inotropic and chronotropic effects.
 - 7.3. Antihypertensives may potentiate hypotensive effects.
8. How Supplied:
 - 8.1. Parenteral: 5mg/2ml in 2, 4, 5ml vials, or 2, 4ml ampules.
9. Dosage and Administration:
 - 9.1. Adult:
 - 9.1.1. Initial dose:
 - 9.1.1.1. 2.5-5mg slow IV bolus over 2 minutes.
 - 9.1.2. Repeat dose:
 - 9.1.2.1. 5-10mg in 15-30 minutes after initial dose or:
 - 9.1.2.2. 5mg every 15 minutes until desired response is achieved.
 - 9.1.2.3. Maximum dose 30mg.
 - 9.2. Pediatrics:
 - 9.2.1. Not recommended in the prehospital setting.
10. Special Considerations:
 - 10.1. Pregnancy Category C.
 - 10.2. Closely monitor patient's vital signs.
 - 10.3. Give smaller amounts (2-4mg) over longer periods of time (3-4 minutes) when treating the elderly or when the blood pressure is in the lower range of normal.
 - 10.4. Be prepared to resuscitate.
 - 10.5. Atrioventricular block or asystole may occur because of slowed atrioventricular conduction.
11. Note:
 - 11.1. Some physicians recommend slow IV administration of 500mg calcium chloride before dose of Verapamil to minimize the untoward results of hypotension and bradycardia.