

RX

Drug Name: Diltiazem

Trade Name: Cardizem, Dilacor XR, Tiazac, Cartia XT,

Class:

- Calcium Channel Blocker
- Class IV antidysrhythmic

Mechanism of Action:

- Diltiazem inhibits the influx of extracellular calcium across both the myocardial and vascular smooth muscle cell membranes. Resulting in dilation of the coronary and systemic arteries; improved oxygen delivery to the myocardial tissue; and decreased total peripheral resistance, systemic blood pressure, and afterload.
- It is a negative dromotrope & creates refractoriness in the AV node. Its effects on calcium channels in SA and AV nodes, and peripheral vasculature are equipotent.

Indications:

- Atrial fibrillation & atrial flutter with a rapid ventricular response
- Multifocal atrial tachycardia
- PSVT

Contraindications:

- 2nd or 3rd degree AV block (*in the absence of a functioning pacemaker*)
- Sick Sinus Syndrome (*in the absence of a functioning pacemaker*)
- Cardiogenic shock
- Hypersensitivity
- Atrial fibrillation or atrial flutter associated with WPW or short PR syndrome (Lown-Ganong-Levine Syndrome)
- Ventricular tachycardia
- Wide-complex tachycardia of unknown origin
- AMI (*associated with CHF or left ventricular dysfunction*)
- Advanced aortic stenosis
- Hypotension (less than 90 mmHg)

Precautions:

- CHF
- Elderly
- Renal / Hepatic Impairment
- Pregnancy (C)

Dosage:

Adults:

- **DOSE:** IV: 10 mg slow over 2 minutes. Repeat every 10-15 minutes PRN rate control. **MAX 40 mg.**

Pediatrics:

- *Rarely required, doses are the same as adult.*
- **(Medical Control Order) 0.25 mg/kg IV over 2 minutes (Usual dose about 20 mg). May repeat in 15 minutes @ 0.35 mg/kg IV over 2 minutes**

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Onset:

- 2-5 minutes

Duration:

- 1-3 hours

Side Effects:

- First or second degree AV block
- Bradycardia
- Ventricular dysrhythmias
- CHF, Edema
- Hypotension, Syncope
- Flushing
- Chest pain
- Dyspnea
- Sweating
- N/V
- Dizziness
- Nervousness
- Xerostomia
- HA

Interactions:

- May prolong the sedative effects of midazolam.
- May enhance the effects of ASA and prolong bleeding time.
- Additive effects with antihypertensives, alpha-blockers, & diuretics.
- Should not be used in combination with IV beta-blockers. The negative inotropic, chronotropic, & hypotensive effects can induce heart failure.
- Calcium salts can antagonize the hypotensive effects, but do not seem to have an effect on AV conduction.
- Incompatible with simultaneous furosemide injection.

PEARLS:

- As always, unstable tachycardias with serious signs or symptoms warrant cardioversion.
- Hypotension may result and warrants careful monitoring of vital signs.
- PVCs may be present on conversion of PSVT to sinus rhythm.
- Medical Control may order (occasionally, physician preference) a pretreatment of calcium chloride for hypotensive or borderline hypotensive patients.
- Infusions are often not required prehospital with abbreviated transport times. Bolus Diltiazem has (in some studies) been shown to maintain therapeutic levels for 24-48 hours.
- ***AHA dosing for adults: 0.25 mg/kg IV over 2 minutes (Usual dose about 20 mg). May repeat in 10-15 minutes @ 0.35 mg/kg IV over 2 minutes .***