

23. DILTIAZEM

Class: Antianginal Agent; Antiarrhythmic Agent, Class IV; Channel Blocker, Nondihydropyridine.

Indications: Oral: Primary hypertension; chronic stable angina or angina from coronary artery spasm

Injection: Control of rapid ventricular rate in patients with atrial fibrillation or atrial flutter;
conversion of paroxysmal supraventricular tachycardia (PSVT)

Unlabeled : ACLS guidelines: Injection: Stable narrow-complex tachycardia uncontrolled or unconverted by adenosine or vagal maneuvers or if SVT is recurrent

Hypertrophic cardiomyopathy; pediatric hypertension

Dosage

-Angina: Oral:

-Capsule, extended release:

-Dilacor XR®, Dilt-XR, Diltia XT®: Initial: 120 mg once daily; titrate over 7-14 days; usual dose range: 120-320 mg/day; maximum: 480 mg/day

-Cardizem® CD, Cartia XT®, Dilt-CD: Initial: 120-180 mg once daily; titrate over 7-14 days; usual dose range: 120-320 mg/day; maximum: 480 mg/day

-Tiazac®, Taztia XT®: Initial: 120-180 mg once daily; titrate over 7-14 days; usual dose range: 120-320 mg/day; maximum: 540 mg/day

-Tablet, extended release (Cardizem® LA, Matzim® LA, Tiazac® XC [CAN; not available in U.S.]): 180 mg once daily; may increase at 7- to 14-day intervals; usual dose range: 120-320 mg/day; maximum: 360 mg/day

-Tablet, immediate release (Cardizem®): Usual starting dose: 30 mg 4 times/day; titrate dose gradually at 1- to 2-day intervals; usual dose range: 120-320 mg/day

-Hypertension: Oral:

-Capsule, extended release (once-daily dosing): 180-240 mg once daily; dose adjustment may be made after 14 days; usual dose range : 180-420 mg/day; maximum: 480 mg/day

-Cardizem® CD, Cartia XT®, Dilt-CD: Initial: 180-240 mg once daily; dose adjustment may be made after 14 days; usual dose range (JNC 7): 180-420 mg/day; maximum: 480 mg/day

-Dilacor® XR, Diltia XT®, Dilt-XR: Initial: 180-240 mg once daily; dose adjustment may be made after 14 days; usual dose range (JNC 7): 180-420 mg/day; maximum: 540 mg/day

-Tiazac®, Taztia XT®: Initial: 120-240 mg once daily; dose adjustment may be made after 14 days; usual dose range (JNC 7): 180-420 mg/day; maximum: 540 mg/day

-Capsule, extended release (twice-daily dosing): Initial: 60-120 mg twice daily; dose adjustment may be made after 14 days; usual range: 240-360 mg/day .

Note: Diltiazem is available as a generic intended for either once- or twice-daily dosing, depending on the formulation; verify appropriate extended release capsule formulation is administered.

-Tablet, extended release (Cardizem® LA, Matzim® LA, Tiazac® XC [CAN; not available in U.S.]): Initial: 180-240 mg once daily; dose adjustment may be made after 14 days; usual dose range: 120-540 mg/day

-Atrial fibrillation, atrial flutter, PSVT: I.V.:

-Initial bolus dose: 0.25 mg/kg actual body weight over 2 minutes (average adult dose: 20 mg); ACLS guideline recommends 15-20 mg

-Repeat bolus dose (may be administered after 15 minutes if the response is inadequate): 0.35 mg/kg actual body weight over 2 minutes (average adult dose: 25 mg); ACLS guideline recommends 20-25 mg

-Continuous infusion (infusions >24 hours or infusion rates >15 mg/hour are not recommended): Initial infusion rate of 10 mg/hour; rate may be increased in 5 mg/hour increments up to 15 mg/hour as needed; some patients may respond to an initial rate of 5 mg/hour.

If diltiazem injection is administered by continuous infusion for >24 hours, the possibility of decreased diltiazem clearance, prolonged elimination half-life, and increased diltiazem and/or diltiazem metabolite plasma concentrations should be considered.

-Conversion from I.V. diltiazem to oral diltiazem:

Oral dose (mg/day) is approximately equal to [rate (mg/hour) x 3 + 3] x 10.

3 mg/hour = 120 mg/day

5 mg/hour = 180 mg/day

7 mg/hour = 240 mg/day

11 mg/hour = 360 mg/day.

Geriatric

Refer to adult dosing. In the management of hypertension, consider lower initial doses (eg, 120 mg once daily using extended release capsule) and titrate to response (Aronow, 2011).

Renal Impairment:

Use with caution; no dosing adjustments recommended.

Dialysis: Not removed by hemo- or peritoneal dialysis; supplemental dose is not necessary.

Hepatic Impairment:

Use with caution; no specific dosing recommendations available; extensively metabolized by the liver; half-life is increased in patients with cirrhosis

Available dosage form in the hospital: DILTIAZEM 25MG/ML, 5ML VIAL, 60MG TAB, 90MG TAB, DILTIAZEM HCL 120MG TAB

Common side effect: >10%: Cardiovascular: Edema (2% to 15%) , Central nervous system: Headache (5% to 12%)

2% to 10%: Cardiovascular: AV block (first degree 2% to 8%), edema (lower limb, 2% to 8%), pain (6%), bradycardia (2% to 6%), hypotension (<2% to 4%), vasodilation (2% to 3%), extrasystoles (2%), flushing (1% to 2%), palpitation (1% to 2%)

Central nervous system: Dizziness (3% to 10%), nervousness (2%)

Pregnancy Risk Factor: C