

CAMLODIP[®]

Amlodipine Besilate 5 mg & 10 mg Tablet

Background -

- Calcium channels are plasma membrane proteins containing calcium-selective pores that are opened by depolarization of the membrane voltage.
- They produce depolarization-induced calcium entry in neurons, muscle and other excitable cells, as well as some nonexcitable cells.
- Functions mediated by calcium channels include contraction of muscle, release of neurotransmitters and hormones by neurons and neuroendocrine cells, and control of gene transcription.
- Calcium channel dysfunction contributes to diseases including cardiac arrhythmia, hypertension, chronic pain, epilepsy and migraine.

Description -

- Camlodip[®] is a long-acting 1, 4-dihydropyridine calcium channel blocker. It acts primarily on vascular smooth muscle cells by stabilizing voltage-gated L-type calcium channels in their inactive conformation.
- By inhibiting the influx of calcium in smooth muscle cells, amlodipine prevents calcium-dependent myocyte contraction and vasoconstriction.

Indication -

- Camlodip[®] is indicated for the treatment of Hypertension and chronic stable angina.

Mechanism of Action -

- Camlodip[®] is a calcium channel blocker that dilates (widens) blood vessels and improves blood flow.
- Amlodipine blocks calcium from entering certain tissues and arteries. This makes it easier for them to relax so that blood can flow more easily to your heart.
- This helps lower your blood pressure. It also reduces your risk for heart attack or stroke.

Usual Adult Dose for Hypertension

Initial Dose	5 mg orally once a day
Maintenance dose	5 to 10 mg orally once a day

Usual Adult Dose for Angina Pectoris

Maintenance dose	5 to 10 mg orally once a day
Maximum Dose	10 mg/day

Presentation -

- Camlodip[®]-5/10 is available as strip of 10 Tablet in Alu-Alu Blister Packing.

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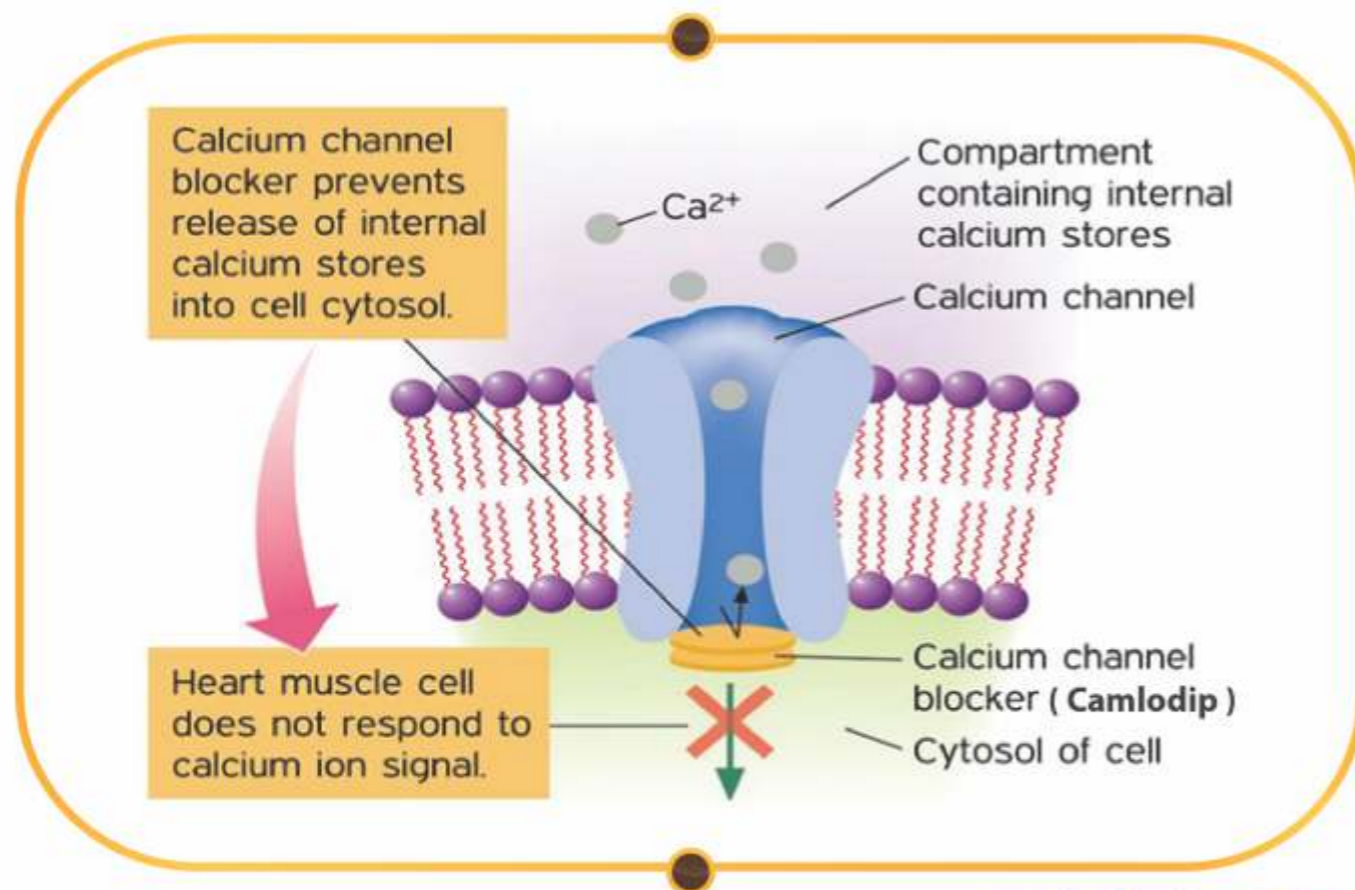
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How does Camlodip Work ?

- Amlodipine decreases arterial smooth muscle contractility and subsequent vasoconstriction by inhibiting the influx of calcium ions through L-type calcium channels.
- Calcium ions entering the cell through these channels bind to calmodulin. Calcium-bound calmodulin then binds to and activates myosin light chain kinase (MLCK).
- Activated MLCK catalyzes the phosphorylation of the regulatory light chain subunit of myosin, a key step in muscle contraction.
- Signal amplification is achieved by calcium-induced calcium release from the sarcoplasmic reticulum through ryanodine receptors.
- Inhibition of the initial influx of calcium decreases the contractile activity of arterial smooth muscle cells and results in vasodilation.
- The vasodilatory effects of amlodipine result in an overall decrease in blood pressure. Amlodipine is a long-acting CCB that may be used to treat mild to moderate essential hypertension and exertion-related angina (chronic stable angina).
- Another possible mechanism is that amlodipine inhibits vascular smooth muscle carbonic anhydrase I activity causing cellular pH increases which may be involved in regulating intracellular calcium influx through calcium channels.



Clinical Study

BACKGROUND:

- Systolic hypertension is the most common form of hypertension, particularly in people aged >60 years.
- Caused by decreased compliance of large arteries, systolic hypertension is an independent risk factor for cardiovascular disease.
- Recent studies have demonstrated that it is more important to control systolic blood pressure (SBP) than diastolic blood pressure (DBP).

OBJECTIVE:

- The objective of this study was to perform a systematic literature review to examine the effectiveness of amlodipine in lowering SBP in a variety of patient subgroups and clinical settings.

METHODS:

- The literature review methodology included identifying, selecting, appraising, extracting, and synthesizing primary research studies.
- Following an a priori protocol, published literature was searched from 1980 to 2001 using 3 electronic databases. A manual review of the reference lists of recent review articles and all accepted studies was performed.
- Parallel-group, randomized, controlled trials that included at least 10 adults with baseline hypertension (SBP>or=140 mm Hg, DBP>or=90 mm Hg, or both), included at least 1 arm randomized to initial treatment with amlodipine monotherapy, had a minimum treatment duration of 8 weeks, and reported baseline and end-point blood pressure were included.

RESULTS:

- Of 696 citations identified, 85 primary studies met all inclusion criteria. Comparable treatment arms were pooled, and weighted mean SBP was calculated.
- In the amlodipine monotherapy arms, which included >5000 patients, SBP decreased by a mean of 17.5 mm Hg from baseline.
- The effect of amlodipine in reducing SBP was greater in elderly patients (age>or=60 years) and patients with author-defined isolated systolic hypertension.
- The dose was titrated to achieve the target blood pressure in 73 of 89 amlodipine treatment arms, whereas 16 treatment arms reported fixed doses.
- The median daily dose was 5 mg (range, 1.25-15 mg) in both the fixed-dose and dose-titration groups.

CONCLUSIONS:

- In this review of the published literature, amlodipine monotherapy was effective in reducing SBP. Antihypertensive agents such as amlodipine warrant consideration for the management of patients with inadequately controlled SBP.

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THE GOAL ACHIEVER

Reference:
Clin Ther. 2003 Jan;25(1):35-57.

