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Barnidipine

A Viewpoint by Takao Saruta

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Barnidipine is a novel long-acting and potent calcium antagonist classified as a dihydropyridine compound, which has been used in Japan for the last few years in usual doses of 5 to 15 mg/day. Its slow onset and long duration of action and potent calcium antagonist activity result from slow association with, and slow dissociation from, dihydropyridine receptors and high partition in the lipid bilayer of plasma membrane.

After administration of 15mg of barnidipine to healthy volunteers, the concentration curve of the unmetabolised drug exhibits 2 peaks, one at 1 hour and the other at 6 hours.[1]

Diastolic blood pressure was controlled to below 90mm Hg in 84.2% of the patients with mild to moderate hypertension given 5 to 15mg of barnidipine daily.[2] In a double-blind comparative study, the antihypertensive efficacy and the adverse effects (mainly flushing and headache) were comparable between 5 to 15mg daily of barnidipine and 40 to 80mg daily of sustained-release nicardipine.[3] In a study on the diurnal blood pressure change during treatment with barnidipine, it was shown that blood pressure was smoothly controlled over 24 hours and that the diurnal blood pressure change in a given individual was not much altered.[4] Blood pressure, however, was reduced more during daytime than during night-time. The morning rise of blood pressure was well controlled by the drug given once daily.

Barnidipine dilates the coronary arteries, as nifedipine and nitrendipine do, without altering the cardiac contractility. The drug, therefore, should be effective for chronic stable angina and is expected to provide an additive effect when combined with β-blocking agents.

References

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