Gingival Overgrowth Induced by Nisoldipine

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Background & Objectives: Amlodipine1),
diltiazem2,3), manidipine4), nicardipine5-7),
nifedipine2,3,5-7,9) and velapamil3,8,9) were reported
as the causative drug for gingival overgrowth.
However, there is no report of nisoldipine-induced
 gingival overgrowth. Thus, we determined whether
nisoldipine is the causative drug for gingival
overgrowth. Furthermore, since the incidence of
gingival overgrowth induced by calcium channel
blocker remains poorly defined, the incidences of 13
calcium channel blockers were also determined.

Patients and Methods: Dental patients (n = 1,080)
who received nisoldipine (n = 78), amlodipine (n =
69), barnidipine (n = 24), benidipine (n = 27),
cinnarizine (n = 45), diltiazem (n = 157), flunarizine
(n = 31), manidipine (n = 79), nicardipine (n = 201),
nifedipine (n = 262), nilvadipine (n = 54),
nitrendipine (n = 23) or velapamil (n = 30) for more
than 3 months were surveyed to determine the drug-
induced gingival overgrowth. Patients taking other
drugs known to induce gingival overgrowth or
presenting with complaint of drug-induced gingival
overgrowth were excluded from this study.

Clinical diagnosis of drug-induced overgrowth was
verified by disappearance or decreased severity of
gingival overgrowth after withdrawal of the
causative drug.

Results: The first case of gingival overgrowth
induced by nisoldipine was found in one patient
(Fig), which was clinically and histologically similar
to those of other calcium channel blockers. Since
marked reduction of gingival overgrowth was
evident two months after withdrawal of nisoldipine,
we concluded that this case was a nisoldipine-
induced gingival overgrowth. In other drugs, the
gingival overgrowth was also found in patients
receiving amlodipine (n = 1), diltiazem (n = 7),
manidipine (n = 1), nicardipine (n = 1) and
nifedipine (n = 22) (Table), but not by barnidipine,
benidipine, cinnarizine, flunarizine, nilvadipine,
nitrendipine and velapamil. The highest incidence
of gingival overgrowth was obtained by nifedipine
(8.4%), followed by diltiazem (5.0%), amlodipine
(1.4), manidipine (1.3%), nisoldipine (1.3%) and
nicardipine (0.5%). The incidence of nifedipine-
induced gingival overgrowth was significantly
higher than those of diltiazem and nicardipine, but
not amlodipine, manidipine and nisoldipine (Table).

Conclusions: Since nisoldipine-induced gingival
overgrowth was found, nisoldipine is also implicated as the causative drug for gingival overgrowth. Gingival overgrowth induced by nisoldipine, amlodipine, diltiazem, manidipine, nicardipine and nifedipine was found in surveyed patients, of which incidence of overgrowth varied among the drugs. Calcium channel blocker-induced gingival overgrowth, especially by nifedipine, appears more frequently and is now not a rare adverse effect.

**References**


