

일반 연재(II) - 11

CORRELATIVE CHANGES OF PLASMA NOREPINEPHRINE AND ITS METABOLITES WITH PHARMACOKINETIC ALTERATIONS OF NORTRIPTYLINE IN NORMAL VOLUNTEERS

Seong-Yoon Kim, Jin-Pyo Hong, Jun-Soo Kwon, Jong-Inn Woo, Chung-Kyoon Lee. Dept. of psychiatry, Seoul Natl Univ Coll Med.

A tricyclic antidepressant, nortriptyline, is known to be a potent inhibitor of the re-uptake of norepinephrine at synaptic site. The purpose of this study was to examine the acute effect of nortriptyline on noradrenergic system in human. After single oral dose of nortriptyline, we compared the plasma levels of norepinephrine and 3-methoxy-4-hydroxy-phenylglycol (MHPG) with pharmacokinetic changes in the concentrations of nortriptyline.

Method : Eleven healthy male volunteers took single oral dose of nortriptyline three times(placebo, 20mg and 50mg). At each time, plasma nortriptyline, MHPG and norepinephrine concentration were measured by HPLC method in 0, 1, 3, 5, 8, 12, 24, 32, 48 hours after oral ingestion.

Results : Plasma MHPG level was significantly decreased from 3 hours after drug administration. Maximal 50% reduction of levels of MHPG was found in 8-12 hours and the MHPG maintained lowered level to 48 hours. But plasma peak levels of nortriptyline were attained in 5 hours. Although MHPG decrease showed slight delay compared with each nortriptyline concentration, significant correlation was found between nortriptyline concentration and MHPG level. The plasma level of norepinephrine was not affected by nortriptyline within 48 hours.

Conclusion : The present study suggests that pharmacokinetic variations of nortriptyline in the plasma correlate with the altered levels of MHPG, but not NE. It follows from this study that the reduction of MHPG induced by nortriptyline does not directly lead to the therapeutic effect.