Study of the influence of nomifensine on the narcosis induced by ethanol and pentobarbital in mice

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Serotonin and catecholamines are involved in the CNS depressant effect of ethanol. Nomifensine (NOM), a tetrahydroquinoline derived antidepressant, preferentially inhibits norepinephrine and dopamine but only slightly inhibits serotonin reuptake. The interactions of NOM on sleeping time of ethanol and pentobarbital in mice were studied. Groups pretreated with alphamethyl-p-tyrosine (AMPT), an inhibitor of catecholamine biosynthesis, or p-chlorophenylalanine (PCPA) which reduces serotonin synthesis, were compared with non-pretreated controls. NOM markedly reduced ethanol narcosis and this effect increased only slightly with PCPA, while the effect of NOM on ethanol narcosis was significantly antagonized with AMPT. NOM did not modify pentobarbital narcosis either with or without PCPA or AMPT pretreatment. The results agree with the hypothesis that serotonin favors the CNA depressant action of ethanol, while norepinephrine diminishes it. NOM is not a CNS stimulant drug since it did not mod