

Abstract

The hypothesis that the descending noradrenergic system tonically inhibits nociception at the spinal level was investigated, using the formalin test in mice. The alpha-adrenoceptor agonist clonidine (0.46 and 0.92 microgram), injected intrathecally, significantly reduced licking activity in both the early and late phase of the test. The alpha 1-antagonist prazosin (3.75, 7.5 and 15 micrograms) and the alpha 2-antagonist yohimbine (7.5 micrograms) also significantly reduced licking activity in both phases. The smaller doses of yohimbine (1.87 and 3.75 micrograms) induced an insignificant reduction of licking in the early phase. Except for the largest doses of clonidine (0.92 microgram), the drugs used had no effect on the general level of activity and motor performance. These results support previous findings that increased noradrenergic activity in the spinal cord inhibits nociception, however, this inhibition seems not to be tonically active. The mechanisms of the antinociceptive actions of alpha-antagonists are not clear.