The effects of chronic nicotine exposure on the sensitivity of rat stomach fundus to bethanechol

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1. The effect of chronic nicotine treatment (1 mg/kg/day for 10 days) in vivo on the sensitivity of rat gastric fundus in vitro to the muscarinic acetylcholine receptor agonist bethanechol was studied.

2. The $pEC_{50}$ values for bethanechol in tissues from saline- (control) and nicotine-treated animals were 4 ± 1 and 4 ± 2, respectively. The maximal effect (% KCl-induced response) produced by bethanechol was 140 ± 90% (control) and 185 ± 180% (nicotine-treated).

3. The $pEC_{50}$ values for 5-HT in tissues from saline- and nicotine-treated animals were 7.0 ± 0.8 and 7.0 ± 0.9, respectively. The maximal effects produced by 5-HT after the two treatments were 90 ± 22% and 113 ± 43%, respectively.

4. No significant differences in responses from control versus nicotine-treated animals were found.

5. Chronic nicotine exposure in vivo did not alter the response of the rat gastric fundus in vitro to muscarinic acetylcholine or 5HT receptor activation.