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Relaxant effect of *Satureja hortensis* on guinea pig tracheal chains and its possible mechanism

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Background: In Iranian ancient medical books, the therapeutic effects of *Satureja hortensis* on respiratory diseases have been reported. In order to verify these reports, the relaxant effect of aqueous-ethanolic extract of *Satureja hortensis* on guinea pig trachea was examined.

Methods: The relaxant effects of 6 cumulative concentrations of extract (0.15, 0.3, 0.45, 0.6, 0.75 and 0.9 g %) in comparison with saline and 4 cumulative concentrations of theophylline (0.15, 0.3, 0.45, and 0.6 mM) by their effects on precontracted tracheal chains of guinea pig by 10 μ M methacholine (group 1) or 60 mM KCl in two different conditions including: non-incubated tissues (group 2) and incubated tissues with 1 μ M propranolol, 1 μ M chlorpheniramine and 1 μ M atropine (group 3, for each group n=6) were examined.

Results: In group 1, the extract and theophylline showed concentration dependent relaxant effects compared to that of saline ($p < 0.05$ to $p < 0.001$). In group 2, three last concentrations of theophylline and four higher concentrations of extract showed significant relaxant effect compared to that of saline ($p < 0.05$ to $p < 0.001$). The effects of four lower concentrations of extracts in groups 1 and 2 were significantly lower than those of theophylline ($p < 0.05$ to $p < 0.001$). In group 3, the extract did not show any significant relaxant effect. There were significant correlations between the relaxant effects and concentrations of extract and theophylline in groups 1 and 2 ($p < 0.001$ for all cases).

Conclusion: These results showed a potent relaxant effect of *Satureja hortensis* on guinea pig trachea which was comparable to that of theophylline.

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