Antispasmodic effect of Tecoma stans (L.) Juss leaf extract on rat ileum

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Tecoma stans (L.) Juss or Yellow bells from Bignoniaceae is a ornamental tropical shrub or small tree predominantly found in central, and south America and in Latin America is used traditionally for reducing blood glucose. However, its other pharmacological effects have not been yet elucidated. The aim of present study was to investigate the effect of its leaves extract on rat ileum contractility and involved mechanism(s). Tecoma stans Juss hydroalcoholic leaf extract (TLE) was prepared by macerated method using 70% alcohol. Distal segment of ileum (2 cm) from male Wistar rat was mounted in an organ bath containing Tyrode solution (10 ml, pH 7, 37 °C) and pre-contracted by carbachol (CCh, 10 µM) or by KCl (60 mM). The antispasmodic effects of TLE (0.125-2 mg/ml) were studied prior and after 20-30 min incubation of ileum with propranolol (1µM), naloxone (1µM), L-NAME (100 µM), or 5 min incubation with glibenclamide (10 µM) and tetraethylammonium (TEA, 1mM). The effect of TLE on CaCl2-induced contraction in Ca2+-free with high K+ Tyrode solution was also studied. The CCh- and KCl-induced ileal contractions were reduced by TLE ($P<0.0001$). This effect was not attenuated by propranolol, naloxone, L-NAME, glibenclamide and TEA. In Ca2+-free Tyrode solution with high K+, cumulative concentrations of CaCl2 induced contractions which were inhibited by TLE dose-dependently. Our results indicate that the Tecoma stans (L.) Juss leaf extract induces its antispasmodic effects without involvement β-adrenoceptors, opioid receptors, potassium channels and NO production. It seems that, the calcium channels are involved in this spasmolytic effect.

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