

عنوان مقاله:

Antispasmodic effect of Physalis alkekengi fruit extract on rat uterus

محل انتشار:

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خلاصه مقاله:

Background: Studies have shown that *Physalis alkekengi* reduces implantation and induces antifertility in rat. In Iranian traditional medicine it is believed that this plant has abortifacient and antifertility activities. Objective: The goal of this study was to evaluate the effect of *Physalis alkekengi* ripe fruit hydroalcoholic extract (PFE) on uterine contractility and its possible mechanism(s). Materials and Methods: Extraction of *Physalis alkekengi* fruit was carried out by maceration method (70% alcohol). Uterus was dissected out from adult non-pregnant rat (Wistar) and contracted by KCl (60mM) or oxytocin (10mU/ml) in an organ bath containing De Jalon solution and the effect of PFE on the uterine contractions was investigated. Furthermore, the role of α - and β -adrenoceptors, opioid receptors, nitric oxide and cyclic guanosine monophosphate synthesis inhibitors on the extract effects were evaluated. Results: KCl- and oxytocin-induced uterine contractions were inhibited ($p < 0.001$) by the cumulative concentrations of the extract in a concentration dependent manner. Incubation of uterus with propranolol (1 μ M) and L-NAME (100 μ M) attenuated the PFE antispasmodic effect ($p < 0.05$). But the PFE effect was unaffected by phentolamine (1 μ M), naloxone (1 μ M) or methylene blue (10 μ M). In Ca^{2+} -free with high potassium (60mM) De Jalon solution, cumulative concentrations of $CaCl_2$ (0.1-0.5mM) induced uterine contraction concentration-dependently ($p < 0.001$). Uterus incubation (5min) with PFE (0.25-1.75mg/ml) attenuated the $CaCl_2$ -induced contractions ($p < 0.05$). Conclusion: It seems that the extract induced antispasmodic effect mainly via calcium influx blockade and partially through blocking β -adrenoceptors and nitric oxide (NO) synthesis. However, neither α -adrenoceptors nor opioid receptors or cGMP synthesis were involved.

کلمات کلیدی:

Rat, Uterus, *Physalis alkekengi*, Antispasmodic

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