

Original Paper

Effect of intravenous and intraperitoneal injection of *Lavandula angustifolia L.* oil on normal blood pressure in rats

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Abstract

Background and Objective: Several studies have shown that inhalation of *Lavandula angustifolia L.* (*Lavender*) reduces hypertension, while systemic effects and mechanism of action of *lavender* oil on blood pressure is not clear. This study was carried out to evaluate the effect of intravenous and intraperitoneal injection of *Lavandula angustifolia L.* oil on normal blood pressure in male rats.

Methods: In this experimental study, 70 male Wistar rats were randomly allocated into 10 groups (n=7). Following anesthetizing the animals with sodium thiopental, femoral artery and vein were cannulated respectively for recording blood pressure and injection of *Lavandula angustifolia L.* oil. *Lavender* oil or its vehicle (Propylene glycol) was injected by intravenous (25, 50 and 100 mg/kg/bw) or intraperitoneal injection (500mg/kg/bw). For the evaluation of the mechanism of *Lavender* oil, L-NAME (4mg/kg/bw), atropine (1mg/kg/bw), indomethacin (5 mg/kg/bw) or saline was injected intraperitoneally before intravenous administration of *Lavender angustifolia L.* oil.

Results: Intravenous injection of *Lavender* oil of 25 and 50 mg/kg/bw reduced arterial blood pressure in compare to control group (P<0.05) and dose of 50 mg/kg/bw was more effective than dose of 25 mg/kg/bw (P<0.05). 100 mg/kg/bw of *Lavender angustifolia L.* oil caused serious fall of blood pressure and resulted in animal death. Intraperitoneally injection of *Lavender angustifolia L.* oil at dose of 500 mg/kg reduced arterial blood pressure that this reduction was longer than intravenously administration of *Lavender* oil (P<0.05). Intraperitoneal injection of L-NAME, atropine or indomethacin had no significant effect on baseline of blood pressure and hypotensive effect of *Lavender angustifolia L.* oil.

Conclusion: Intravenous injection of *Lavandula angustifolia L.* oil in doses of 25 and 50 mg/kg/bw reduced arterial blood pressure in rat, but intraperitoneally injection of *Lavender* oil at dose of 500 mg/kg/bw prolonged the reduction of blood pressure in animals.

Keywords: *Lavandula angustifolia L.*, Blood pressure, Rat

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Received 12 Aug 2014

Revised 7 Jan 2015

Accepted 21 Jan 2015