Original Paper

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

MomenAbadi S (M.Sc)¹, Zahedi Khorasani M (Ph.D)²*, Vakili A (Ph.D)³

¹Ph.D Candidate in Physiology, Research Center and Department of Physiology, Faculty of Medicine, Semnan University of Medical Sciences, Semnan, Iran. ²Associate Professor of Physiology, Research Center and Department of Physiology, Faculty of Medicine, Semnan University of Medical Sciences, Semnan, Iran. ³Professor of Physiology, Research Center and Department of Physiology, Faculty of Medicine, Semnan University of Medical Sciences, Semnan, Iran.

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

*Corresponding Author: Zahedi Khorasani M (Ph.D), E-mail: zahedikhorasani@yahoo.com

Received 12 Aug 2014 Revised 7 Jan 2015 Accepted 21 Jan 2015

Cite this article as: MomenAbadi S, Zahedi Khorasani M, Vakili A. [Effect of intravenous and intraperitoneal injection of *Lavandula angustifolia* L. oil on normal blood pressure in rats]. J Gorgan Uni Med Sci. 2015; 17(3): 32-38. [Article in Persian]