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The effect of intraperitoneal administration of aqueous extract of Melia azedirach leaves on rat paw inflammatory edema

Submission Author: Alieh Jalali

Alieh Jalali¹, Masoud Fereidoni², Ali Asadollahi³, Bahram Farhadi Moghadam⁴

1. M.sc Student in Biology (Animal Physiology), Department of Biology, Faculty of Science, Ferdowsi University of Mashhad, Mashhad, Iran
2. Professor, Rayan Center for Neuroscience and Behavior, Department of Biology, Faculty of Science, Ferdowsi University of Mashhad, Mashhad, Iran
3. Assistant Professor, Rayan Center for Neuroscience and Behavior, Department of Biology, Faculty of Science, Ferdowsi University of Mashhad, Mashhad, Iran
4. M.sc in Biology (Animal Physiology), Department of Biology, Faculty of Science, Ferdowsi University of Mashhad, Mashhad, Iran

Background and Aim : Inflammation is a physiological response of the body to harmful stimuli, such as pathogens, damaged cells, or irritants which leads to swelling, redness, warmth and itching in affected area. In this study the anti-inflammatory effects of the i.p. dose 200 mg/kg of aqueous extract of Melia azedirach leaves was investigated.

Methods : After the preparation of plant leaves aqueous extract, male Wistar rats (200-250gr) were randomly divided into 3 groups: Control groups, sham groups (i.p. Saline) and 200 mg/kg i.p. dose extract receiving group. Inflammation was induced in the rats hind paw by the injection of 0.05 ml of formalin 2.5% and paw volume was measured using plethysmometric method before and one hour after the injection.

Results : Saline didn't have any effects on formalin- induced paw edema but the 200 mg/kg dose of Melia azedirach leaves extract reduced the volume of inflammatory paw edema ($p < 0/001$).

Conclusion : The results indicate that aqueous extract of Melia azedirach leaves have the anti-inflammatory effects that may be due to the presence of tannins and steroid components within the extract which probably inhibit the synthesis, release or action of inflammatory mediators same as histamine and serotonin, this assumption needs more investigations.

Keywords : Melia azedirach; edema; Tannins; Steroid components; plethysmometer