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MEETING ABSTRACT

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Ethyl-acetate extract of *Artemisia herba-alba* decreases locomotor activity and exhibits muscle-relaxant properties in rats

Obrad ĐURIĆ¹, Maja LOZIĆ², Jelica NOVAKOVIĆ³, Milan GAVRILOVIĆ³, Abdulhimid A. GIWELI⁴, Petar D. MARIN³, Zora DAJIĆ STEVANOVIĆ⁵, Peđa JANAČKOVIĆ³ and SILVIO DE LUKA^{6,*}

¹Internal Clinics Group, Medical Military Academy, Belgrade, Serbia;

²Institute of Pharmacology, Clinical Pharmacology and Toxicology, Faculty of Medicine, University of Belgrade, Serbia; ³Department of Botany, Faculty of Science, University of Al-Gabel Al-Gharbe, Zintan, Lybia; ⁴Institute of Botany and Botanical Garden

“Jevremovac”, Faculty of Biology, University of Belgrade, Serbia;

⁵Department of Agrobotany, Faculty of Agriculture, University of Belgrade, Serbia; ⁶Institute of Pathophysiology, Faculty of Medicine, University of Belgrade, Serbia

Background: *Artemisia herba-alba* Asso (AHA) is distributed throughout the Mediterranean region and is traditionally used for its antispasmodic, antiseptic, antiparasitic and blood glucose-lowering properties. It is also reported that AHA can be used in the treatment of some neurological disorders. *In vitro* studies have shown that the ethyl-acetate extract of AHA contains flavonoids which have affinity for GABA_A receptor. The purpose of our study was to investigate the effects of AHA ethyl-acetate extract on motor behaviour in rats.

Methods: Experiments were performed in adult male Wistar rats weighing 250–280 g. Increasing doses (10, 30, 100 mg/kg) of an ethyl-acetate extract of AHA were applied intraperitoneally to animals before submitting them to motor behaviour testing. An open-field arena was used to assess ambulatory behaviour, while muscle strength and coordination were estimated using the grip-strength test and rotarod test, respectively. Control groups were treated with saline containing 5% Tween 80 or diazepam.

Results: During a five-minute exposure to an open-field arena, rats treated with all doses of AHA showed a decline in both vertical and horizontal activity, reflected as a decrease in the number of supported and non-supported rears and a reduced number of total squares crossed compared to the control group treated with saline. The strength-grip test showed decreased muscle strength in forelimbs of rats treated with 30 mg/kg and 100 mg/kg AHA ethyl-acetate extract compared to saline-treated rats and this decrease was comparable to one induced by diazepam. Only diazepam-treated rats spent less time on the rotarod when compared to the saline-treated control group.

Discussion: This is the first *in vivo* study that examined effects of *Artemisia herba-alba* on rodent motor behaviour. Our results show that the ethyl-acetate extract of *A. herba-alba* reduces locomotor activity and induces muscle relaxation without affecting coordination. These results may be useful for the development of new drugs for the treatment of neurological disorders characterized by increased muscle tone.

*Corresponding author e-mail: de_luka@eunet.rs