THE EFFECT OF VALERIANA OFFICINALIS ON THE ASTROCYTES OF HIPPOCAMPUS IN RATS

[1]HAMDOLLAH DELAVIZ, [2]AMROLLAH ROOZBEHI, [3]ASGHAR HEIDARIAN, [4]PARASTOU RAD, [5]JAMSHID MOHAMMADI

[1,2,3,4,5]Department of Anatomy, Yasuj University of Medical Sciences, Yasuj-Iran,
E-mail: delavizhamdi83@gmail.com

Abstract- Introduction: The Valeriana officinalis has therapeutic properties in neurological disorders, insomnia and hysteria. This plant has been used as a medical herb and act as a tranquillizer for nervous system and muscle cramps. The main **purpose of this study** was to evaluate the protective activity of **hydroalcoholic extract** of **this plant** on **the proliferation and diameter of astrocytes** in the **hippocampal formation in rats.**

Materials and Methods: In this experimental study, forty **Sprague Dawley rat** (200–230 g) were randomly divided equally into 4 groups. The treatments groups I, II and III received Valeriana officinalis extracts 300, 400 and 600 mg/kg respectively, daily for three weeks. The **control group** just **received 1 ml** of **distilled water daily 21 days** by **gavage.** At the end of the study, the rats were killed and brain were removed and fixed. The numbers and large diameter of the **astrocytes** cells were measured in the CA1, CA2 and CA3 zone of the hippocampal **formation** of different groups. Data were analyzed by one way AOVA.

Results: The mean numbers of **astrocytes of the CA1 and CA2 in the group that received 600 mg/kg of** Valeriana officinalis extracts **were 16.79±6.48 and 9.11±3.91 respectively, which significantly increased compare to the control group. The mean of large diameter of astrocytes in the CA1 region of the animals with 300, 400 and 600 mg/kg of** Valeriana officinalis were 10.41±2.87, 7.85±2.36 and 5.5±2.06 respectively, that decreased significantly compare to the control group 13.1±4.01. The mean large diameter of the **CA3 area in the groups with 400 and 600 mg/kg of** Valeriana officinalis extracts were 8±2.38 and 7.13±4.12 respectively, that was reduced significant compare to the control group 14.53±8.60

Conclusion: Recent results show the **hydroalcoholic extract of the** Valeriana officinalis with different effective components including phenolic acids, esters, flavonoids, eccles, monoterpenes, and antioxidant property has potential to affect the extracellular environment of the nervous system to proliferation of astrocytes cells **in** the rat hippocampus.

Key words- Astrocytes, hippocampus, Valeriana officinalis, extracts