



## Poster Presentation

### Effect of Concomitant Use of Erythropoietin and Progesterone in Traumatic Brain Injury

Zahra Nourzad, Tahereh Ghadiri, Sayed Mostafa Modarres Mousavi, Fariba Karimzadeh, Arezou Eshaghabadi, Hassan Hosseini Ravandi, Ali Gorji\*

Shefa Neuroscience Research Center, Khatam Alanbia Hospital, Tehran, Iran.

**Published: 18 February, 2015**

#### Abstract

Traumatic brain injuries may cause some neurological deficits, such as altered level of consciousness or coma, sensory-motor dysfunction, and seizure attacks. The neuroprotective effect of progesterone and erythropoietin has been shown in different types of brain injuries and cerebral ischemia. This study aims to evaluate the probable additional neuroprotective effects of progesterone and erythropoietin after brain injury. The effects of progesterone, erythropoietin or the combination of these substances were investigated in 54 male Wistar rats suffering from traumatic brain injury. The effects of drugs were investigated using modified neurological severity scores as well as counting the number of dark neurons (injured cells) in the hippocampal CA1 and CA3 areas. Our data revealed that the scale of neurological deficits increased by co-application of progesterone and erythropoietin in brain-injured rats. Assessment of dark neurons did not show a significant decrease in the number of dark neurons after combined treatment compared to control groups. Our study showed that the combination therapy did not exhibit any synergistic effect and may worsen the outcome of traumatic brain injury. Details of this study were published (Nourzad, et al. 2014).

**Keywords:** Neuroprotective, Motor Dysfunction, Traumatic Brain Injuries.

#### References

- Nourzad Z, Khazali H, Ghadiri T, Modarres Mousavi SM, Karimzadeh F, Eshaghabadi A, et al. Neuroprotective effects of concomitant use of erythropoietin and progesterone in traumatic brain injury. *Shefaye Khatam*. 2014; 2(2): 1-12.
- Ghadiri T, Sharifzadeh M, Khodaghali F, Modarres Mousavi SM, Hassanzadeh G, Zarrindast MR, et al. A novel traumatic brain injury model for induction of mild brain injury in rats. *J Neurosci Methods*. 2014; 15(233): 18-27.

**\*Corresponding Author:** Ali Gorji

E-mail: gorjial@uni-muenster.de