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Poster Presentations

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Inhibition effect of gamma-aminobutyric acid ergic system on oxidative stress in the dorsal hippocampus in an experimental model of polycystic ovary syndrome induced by morphine

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Background: Because of noticeable occurrence of endocrine disorders in women such as polycystic ovary syndrome, researchers have conducted extensive experimental studies to detail the mechanism of the disease by using the animal model that simulates this type of complication in the model.

Objective: We used the baclofen as a GABAB receptor agonist to reduce oxidative stress induced of polycystic ovary syndrome (PCOS) in active brain regions such as the dorsal hippocampus.

Materials and Methods: For this experiment, 48 female Wistar rats (in the diestrous phase) were randomly divided into seven groups: control (saline), morphine (5 mg/kg), baclofen alone (at doses of 10, 20, and 30 mg/kg), and pre-injection of baclofen doses to the morphine. 24 hr after the experiment, the animals' brains were removed and the hippocampus was isolated on ice for histological and oxidative stress studies. The results were analyzed by analysis of variance (ANOVA) with an error coefficient of 0.05.

Results: In this morphine-induced experimental model of PCOS, the level of dorsal hippocampustissue stress was significant compared to the control group, but in the groups pretreated with baclofen, stress in the dorsal hippocampus decreased.

Conclusion: Reproductive difficulties such as PCOS cause oxidative stress in the active brain areas such as the dorsal hippocampus. The use of baclofen as an agonist of the gamma-aminobutyric acid ergic system shows a protective effect in this complication. Therefore, the gamma-aminobutyric acid ergic system may involve in stress inhibition circuits in this area.

Key words: *Polycystic ovary syndrome, Morphine, Baclofen, Oxidative stress, Dorsal hippocampus.*