

TWO WEEKS OF INTRAPERITONEALLY OXYTOCIN TREATMENT EXERTS FACILITATORY EFFECTS ON WORKING MEMORY AND ANTI-DEPRESSIVE EFFECTS IN WISTAR RATS

Alin Ciobica^{1,3}, Radu Lefter^{1,3}, Iulia Antioch¹, Manuel Paulet¹, Manuela Padurariu²

¹*Molecular Biology, Alexandru Ioan Cuza, Romania*

²*Psychiatry, "Gr. T. Popa" University, Romania*

³*Centru de Cercetari Biomedicale, Romanian Academy, Romania*

alinmimi@yahoo.com

Introduction

Lately, there is increased interest in understanding the roles of oxytocin in the main neuropsychiatric disorders such as Alzheimer's disease, anxiety, depression, schizophrenia or autism and the variety of behaviours exhibited by both the administration of intranasal or peripheral oxytocin on the developed animal models for the aforementioned disorders.

In this way, here we present some of our preliminary data regarding the administration of oxytocin for 2 weeks in some specific behavioural tasks used to assess working memory and antidepressive behaviour.

Material and methods

Male Wistar (n=20) rats were used. Oxytocin was intraperitoneally injected in a dose of 10 mg/kg/b.w. for 14 consecutive days. The control rats were also injected with saline. The treatment began 12 days before the behavioural testing. Memory functions were tested through Y-maze, while antidepressive behaviour was evaluated by forced swim test, performed during the last 2 days of treatment (13th and 14th, respectively).

Results

Our initial data is showing positive effects on immediate working memory for the oxytocin administration in the hippocampal-dependent Y-maze test, as showed by the significant increase of the spontaneous alternation behavior in the oxytocin group, as compared to saline. Moreover, the administration of oxytocin resulted in a significant increase of the total swimming time in the forced-swim-test, as compared to the control rats, suggesting some anti-depressive effects.

Conclusions

It seems that the administration of intraperitoneally oxytocin in a dose of 10 mg/kg for 2 weeks in rats could exert some facilitatory effects on the hippocampus-dependent working memory Y-maze test and anti-depressive behavior in forced-swim-test.