

5th International Conference on

BRAIN DISORDERS AND THERAPEUTICS

November 29-30, 2017 | Madrid, Spain

Prenatal exposure to the bacterial endotoxin - lipopolysaccharide causes anxiety like behaviour in an adult offspring rats

Katarzyna Chamera, Katarzyna Kotarska, Ewa Trojan, Natalia Bryniarska, Barbara Korzeniak and Agnieszka Basta-Kaim
Polish Academy of Sciences, Poland

It is well documented that infections both bacterial and viral during pregnancy activate the mother's immune system. It causes alterations in the fetal environment and consequently affects the central nervous system of the offspring. Above-mentioned facts fully support the hypothesis that maternal immune activation (MIA) is one of the risk factors for the development of some psychiatric disorders, including schizophrenia. Accordingly, the aim of our study was to examine if the prenatal treatment with bacterial immune activator- lipopolysaccharide (LPS) influences the anxiety behaviour of adult offspring rats. For this purpose, pregnant rats were injected subcutaneously with LPS at a dose of 2 mg/kg every second day from the seventh day of pregnancy until the delivery. At the age of 90 days, the offspring male rats underwent the light-dark box test. The obtained data revealed that the animals prenatally exposed to LPS spent less time in the light compartment of the test box, in comparison with the control group. What is more, LPS-treated rats covered a smaller distance in the light compartment comparing to their controls. These parameters suggest that the examined animals demonstrate the anxiety-like behaviour. In conclusion, our results show that the prenatal exposure to the bacterial endotoxin - lipopolysaccharide may induce behavioural disturbances, like anxiety, in an adult life of the offspring. These observations and attempts to explain their biochemical basis can be particularly important for an understatement of the pathophysiology of MIA-related psychiatric disorders.

This research was supported by the grant no. 2015/19/B/NZ7/02394, National Science Center, Poland.

Biography

Katarzyna Chamera is currently pursuing her PhD third year in the Institute of Pharmacology, Polish Academy of Sciences, Cracow, Poland. Currently, she is working on the attempt to determine the role of disturbances in neuron – microglia interactions in the development of schizophrenia-like disorders.

chamera@if-pan.krakow.pl

Notes: