



NDD. 04. Progressive microglial activation in the striatum in rats submitted to a neurodevelopmental model of schizophrenia: reversal by clozapine

RIBEIRO, B.M.M.¹, MENEZES, A.T.², SOUZA, G.C.¹, VALE, M.L.¹, MACÊDO, D.S.¹

¹UFC, Universidade Federal do Ceará, Rua Coronel Nunes de Melo, 1127, CEP 60430-270, Fortaleza, CE, Brasil

²UECE, Universidade Estadual do Ceará, Av. Dedé Brasil, 1700 - Itaperi, CEP 60740-000, Fortaleza, CE, Brasil

Introduction: Schizophrenia is a serious mental disorder, either because of their symptoms or by its prevalence. This disorder is characterized by the deterioration in cognitive patterns and personality, as well as by the presence of delusions, hallucinations, social isolation, and paranoia. One of the characteristic processes of the pathophysiology of this disorder has only been recently reported named microglial activation in brain areas involved in schizophrenia. **Objectives:** To show the process of microglial activation in the striatal area of adolescent and adult rats subjected to a schizophrenia model induced by neonatal Poly I: C administration. **Methods:** Wistar rats were used for the administration of Poly I: C in the 5-7 postnatal days. Microglial activation assessment was performed in the following lifespan periods: 35 days old (teen animals), 60 days old (young animals), and 74 days old (Adult animals) rats. Experimental rats had their brains removed, processed, fixed and mounted on saline slides. The histological sections were processed for antigen retrieval, and immunofluorescence was performed according to the laboratory protocol standard. Brain sections were incubated with polyclonal rabbit antibody anti- Iba1 (MNK 4428, Wako Pure Chemicals, Neuss, Germany). **Results:** In the striatum of adult rats exposed to Poly I: C, Iba-1 immunofluorescence (microglia marker) showed decreased percentage of cell ramifications and increased cell body of microglial cells, representing a high microglial activation compared to control adult rats. In teen animals treated with Poly I: C, this activation was mild to moderate, when compared to control teen animals, while the animals treated with clozapine showed reduced microglial activation in adulthood. **Conclusions:** The results show a high activation of microglial cells in the striatum of adult animals submitted to neonatal immune challenge with poly I: C. We have also shown the ability of clozapine to reverse the percentage of expression of microglial activation.

RIBEIRO, B.M.M.; MENEZES, A.T.; SOUZA, G.C.; VALE, M.L.; MACÊDO, D.S. 2013. Progressive microglial activation in the striatum in rats submitted to a neurodevelopmental model of schizophrenia: reversal by clozapine, p.33. In: Oriá, Reinaldo Barreto; Andrade, Geanne Matos de; Bruin, Veralice Meireles S. de. **I International Symposium in Neuroscience Meeting** [Blucher Neuroscience Proceedings n.1 v.1]. São Paulo: Blucher, 2014, <http://dx.doi.org/10.5151/isnm-sine28>