

## **P-1034 - EFFECTS OF PERINATAL EXPOSURE TO CONNEXIN43 ANTIBODIES ON THE COGNITIVE FUNCTION IN RATS**

E.A.Zubkov, V.P.Baklaushev, G.M.Yusubalieva, Z.I.Storozheva, V.P.Chekhonin

<sup>1</sup>VP Serbsky National Research Center for Social and Forensic Psychiatry, <sup>2</sup>NI Pirogov Russian State Medical University, Moscow, Russia

**Introduction:** Connexin43 (Cx43) is the main protein of brain astrocytic gap-junctional network, which plays an important role in the ion and glutamate homeostasis, intercellular signaling, cell adhesion and migration during brain morphogenesis. Earlier we obtained monoclonal antibodies to the E2 extracellular loop of Cx43 (MAbE2Cx43) which could block the functions of astrocytic gap-junctions in vitro and in vivo.

**Aims:** The aim of the current study was to elucidate the influence of MAbE2Cx43 on the cognitive function in animals treated during neurogenesis.

**Methods:** The antibodies were injected intravenously to wild pregnant female rats in a dose of 5 mg/kg on the 10<sup>th</sup> day of gestation. The saline solution was used as a control medicine. Behavioral experiments were conducted on 1-month old offsprings in the following order: the Y-maze, novel object recognition test (NORT) and passive avoidance (PA) task.

**Results:** The Y-maze test revealed a significant decrease in the spontaneous alternation behavior of experimental rats treated with MAbE2Cx43 in the perinatal period compared to control rats. In the NORT rats treated with MAbE2Cx43 have shown significant impairments of the recognition memory after a 24-hour delay. The PA test revealed no significant difference in avoidance latency in the retention trial on the day 2-nd, but it appeared on the day 7-th.

**Conclusions:** These findings confirm memory deficiency after one-time administration of MAbE2Cx43 in the perinatal period. We conclude that the injection of anti-Cx43 antibodies in the perinatal period could alter some Cx43-dependent processes during neurogenesis resulting in cognitive deficiency in adulthood.