

Immunohistochemical study of acute effects of ethanol on midbrain of Wistar rats associated with birthday of neurons in encephalon

Lima, NE., Ferreira, TAA., Nascimento, GNL., Marin, KA. and Souza Neto, A.

Universidade Federal de Goiás

The pre-natal exposure to ethanol is responsible for a series of disturbances in more formations may result in severe fetal anatomy-physiological effects in the newborn characterizing a disease known as fetal alcohol sindromy. The deleterious effects of fetal alcohol syndrome refers to the chronic exposure to ethanol, already fairly well known, but recent studies have shown that even the acute exposure in E12 (twelfth day of the development of intrauterine life), which corresponds to the date of birth of neurons the neocórtex, generates damage similar to the chronic effects on the pre-frontal cortex, the neocórtex in general and on the bulb olfatório. The verification of the acute effects of ethanol in E12 on the mesencephalon, whose neurons are formed mainly in E14, will ratify if the acute effects of ethanol are associated, in terms of prevalence, the date of birth of neurons in certain regions of the brain. The aim of this study was to determine the effects of acute exposure to ethanol on the density of neuronal mesencephalon and associate these results with the acute effects of ethanol in other regions of the brain under the same conditions. The rats were treated with ethanol in solution at 20%, equivalent to 3 g.kg⁻¹ of body weight, administered at intervals of 8 hours. for a total of 3 doses intraperitoneally for one day (E12). After one hour of the last injection of ethanol was applied BrdU. The animals were sacrificed in P8 (eighth day of postnatal life), the brains were removed and cut. The cuts were treated with DAB for the revelation of BrdU, the slides were stained with Safranin for one group and another group was stained with hematoxylin-eosin. Slides were analyzed and were the frequency of cells per field in the mesencephalon, the 400 x increase in light microscopy. The effects of acute injection of ethanol in E12 on the mesencephalon were not detected in this study ($p < 0.05$). Data from the literature suggest that the deleterious action of acute ethanol consumption only occur if the drug is injected at times near the beginning of the migration of neurons in that particular region of the brain.

Financial support: FUNAPE, CNPq, CAPES, IACT.