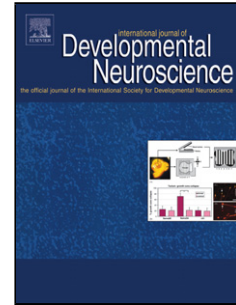


Accepted Manuscript

Title: Effects of prenatal binge-like ethanol exposure and maternal stress on postnatal morphological development of hippocampal neurons in rats

Authors: Ewa Jakubowska-Dogru, Birsen Elibol, Ilknur Dursun, Sinan Yürüker



PII: S0736-5748(17)30095-3
DOI: <http://dx.doi.org/doi:10.1016/j.ijdevneu.2017.06.002>
Reference: DN 2193

To appear in: *Int. J. Devl Neuroscience*

Received date: 13-3-2017
Revised date: 17-5-2017
Accepted date: 16-6-2017

Please cite this article as: Jakubowska-Dogru, Ewa, Elibol, Birsen, Dursun, Ilknur, Yürüker, Sinan, Effects of prenatal binge-like ethanol exposure and maternal stress on postnatal morphological development of hippocampal neurons in rats. *International Journal of Developmental Neuroscience* <http://dx.doi.org/10.1016/j.ijdevneu.2017.06.002>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Effects of prenatal binge-like ethanol exposure and maternal stress on postnatal morphological development of hippocampal neurons in rats.**Ewa Jakubowska-Dogru^{a*}, PhD, Birsen Elibol^b, PhD; Ilknur Dursun^c, PhD; Sinan Yürüker^d, MD;**^aMiddle East Technical University, Faculty of Science and Arts, Department of Biological Sciences, Ankara, Turkey^bBezmialem Vakif University, Faculty of Medicine, Department of Medical Biology, Istanbul, Turkey^cIstanbul Kemerburgaz University, Faculty of Medicine, Department of Physiology, Istanbul, Turkey^dHacettepe University, Faculty of Medicine, Department of Histology and Embryology, Ankara, Turkey***Correspondance to:** Ewa Jakubowska-Dogru, Department of Biological Sciences, Middle East Technical Universty, 06530 Ankara Turkey, Tel.: ± 90-312-210-51-86; Fax: ± 90-312-210-79-76; E-mail address: bioewa@metu.edu.tr**Highlights**

- Postnatal development of hippocampal neurons lasted until weaning and was region-dependent.
- Prenatal ethanol and maternal intubation stress showed similar effects manifested as a small delay in the development of some morphological features.
- Dendritic arbor and spine development appeared to be most affected.

Abstract

BACKGROUND: Alcohol is one of the most commonly used drugs of abuse negatively affecting human health and it is known as a potent teratogen responsible for fetal alcohol syndrome (FAS), which is characterized by cognitive deficits especially pronounced in juveniles but ameliorating in adults. Searching for the potential morphological correlates of these effects, in this study, we compared the course of developmental changes in the morphology of principal hippocampal neurons in fetal-alcohol (A group), intubated control (IC group), and intact control male rats (C group) over a protracted period of the first two postnatal months.

METHODS: Ethanol was administered to the pregnant Wistar dams intragastrically, throughout gestation days (GD) 7–20, at a total dose of 6 g/kg/day resulting in the mean blood alcohol concentration (BAC) of 246.6±40.9 mg/dl. Ten morphometric parameters of Golgi-stained hippocampal neurons (pyramidal and granule) from CA1, CA3, and DG areas were examined at

Download English Version:

<https://daneshyari.com/en/article/5585741>

Download Persian Version:

<https://daneshyari.com/article/5585741>

[Daneshyari.com](https://daneshyari.com)