

عنوان مقاله:

Stereological analysis of cornu ammonis in prenatally stressed rats: a heuristic neurodevelopmental model of schizophrenia

محل انتشار:

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خلاصه مقاله:

Objective(s): The hippocampus has been implicated in pathophysiology of schizophrenia. Prenatal stress is a contributing risk factor for a wide variety of neuropsychiatric diseases including schizophrenia. This study examined long-term effects of prenatal restraint stress on the stereological parameters in the Cornu Ammonis (CA) of adult male rats as an animal model of schizophrenia. **Materials and Methods:** Wistar pregnant dams in experimental group were stressed in a cylindrical Plexiglas restrainer daily for 1 hr during last week of gestation. Controls remained in the animal room and were exposed only to normal animal room conditions. At 2 months of age, the volume of the pyramidal cell layer of the CA, the numerical density and the somal volume of the respective neurons were assessed in the male offspring generated from stressed and control pregnancies. Cavalieri's principle, physical disector and nucleator were applied for stereological analyses. **Results:** This study showed that prenatal stress significantly decreased the volume of CA₃ pyramidal cell layer and the individual somal volume of CA₃ pyramidal neurons. However, there were no markedly differences in the numerical density, total number of CA₃ pyramidal neurons and stereological parameters in CA₁ of prenatally stressed and control animals. **Conclusion:** These data indicate that prenatal stress exposure induced neuronal changes in the CA₃ subfield of hippocampus which are similar to what is observed in schizophrenia.

کلمات کلیدی:

Cornu ammonis, Hippocampus, Prenatal stress, Stereology

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