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Enhancement of Hippocampal Ca1 Neuronal Death On the Line of Ageing in Rats Brain

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Aging related with specific numbers of disorders, including from cognitive decline to Parkinson's disease, Alzheimer's disease, schizophrenia, and even depression, which mostly are similar to those caused by hippocampal cell damages. There is an increasing concern about age related disorders. There may be several complex circuits, which involve hippocampus in the mechanisms of aforementioned disorders. Moreover, hippocampus appears to be an early target of stress and hormones, excitatory amino acids and a bunch of neurotransmitters as well as age-related structural changes. Hence, the study of hippocampal anatomical changes during aging results in better understanding of age-related brain disorders. Previous study showed ionic, channel as well as receptors disturbance in CA1 hippocampal region during aging process. In the present experiment the structural changes of hippocampal CA1 region of aged rat were studied.

In this study 21 male Wistar rats with the age of 3, 6, and 12 months were deeply anesthetized and perfused transcardially, the brain of each rat was fixed. Histological assessments were done on hippocampal region and mean number of cell death were analyzed.

Mean numbers of neural cell death in CA1 hippocampal region was significantly increased in the third and twelfth months compared to the month 6. However, there was no statistical significant difference between the third and twelfth month rats in their hippocampal cell death.

Concluded those middle age rats are less vulnerability to cell death. Data showed that CA1 related disorder may be less abundant in middle age rats compare to younger and older age animals.