Hippocampal apoptosis and RTP801mRNA expression in global brain ischemia model of rats

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View from specialist: It is creative, and of certain scientific and educational value.

[ABSTRACT] Objective: To explore the Hippocampal apoptosis and RTP801mRNA expression in global brain ischemia model of rats, and to discuss the role of RTP801 in the mechanism of global brain ischemia. Methods: A total of 36 cases of rats were randomly divided into experimental group (30 rats) and control group (6 rats). Four vessel occlusion method was used to establish rat models of global cerebral ischemia. After establishment of ischemia, rat models were subdivided into five groups with 6 rats in each group according to time of ischemia, viz. 6 h after ischemia, 12 h after ischemia, 24 h after ischemia, 48 h after ischemia. Rats were sacrificed at the above mentioned time points. TUNEL staining method were used to observe hippocampal neuronal apoptosis, RT-PCR detection was applied to evaluate RTP801mRNA expression level. Results: Ischemia groups at each time point showed significant difference in neuronal apoptosis (P<0.05), of which neuron apoptosis was most significant in group of 48 h ischemia. RT-PCR results showed that RTP801mRNA expression level significantly increased at 6 h after ischemia, and reached the peak at 12 h; Except 72 h ischemia group, RTP801mRNA expression levels were significantly differed from that of the control group (P<0.05). Conclusions: Apoptosis play an important role in the process of injury occurred in global ischemia rat model. The elevated hippocampus RTP801 expression level may induce neuronal injury caused by apoptosis.

[KEY WORDS] Cerebral ischemia; RTP801; Hippocampal cells; Apoptosis; TUNEL; by RT-PCR; Rats