



ApoE and S-100 expression and its significance in the brain tissue of rats with focal contusion

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ABSTRACT. This study explored the effect of focal cerebral contusion on the expression of ApoE and S-100, and its significance in determining the time of brain injury. Based on a rat model of cerebral contusion, immunohistochemistry was used to analyze the expressions of S-100 and ApoE at different time points after injury. Thirty minutes following cerebral contusion, ApoE protein expression was significantly increased in cortex neurons ($P < 0.01$), and S-100 protein expression was significantly ($P < 0.001$) elevated 2 h after cerebral contusion. Over time, the number of ApoE and S-100 positively expressing cells gradually increased. Three days after injury, ApoE was widely distributed throughout the tissue and the number of ApoE-positive cells and staining intensity reached a peak. ApoE expression decreased after this time point. Five days after cerebral

contusion, the number of S-100-positive cells reached a peak level of expression higher than that in the control group. Our data demonstrate that the expression of ApoE and S-100 correlated with the progression of focal cerebral contusion. This suggests that both proteins may serve as effective biomarkers of focal cerebral contusions.

Key words: Cerebral contusion; Injury time; S-100; ApoE