

CHANGES OF HYPOTHALAMUS CORTICOTROPHIN RELEASING FACTOR LEVELS IN ILL CHILDREN WITH ACUTE BRAIN INJURY

J. Dong^{1,2}, Y.M. Zhu¹, Z.Y. Xu¹, J.S. Cao¹, X.L. Yao¹, P. Chen¹, X. Liu¹, X.L. Lu¹, Y.H. Yuan¹, Z.Q. Liu¹, J. Peng¹, S. Tang¹, C. Zhang¹, F. Yuan¹, C.Y. Dong¹, L.H. Zhu¹, Y.H. Gui², C. Chen²

¹*Pediatric Intensive Care Unit, Children's Hospital of Hunan Province, Changsha,* ²*Children's Hospital of Fudan University, Shanghai, China*

Background and aims: It has been proved that the secreting levels of corticotrophin releasing factor (CRF) were correlated with the TNF- α and IL-6 and hypoxia in animal experiments, our present study is to explore the changes of CRF levels secreted by hypothalamus neuron in ill children with acute brain injury.

Methods: Fifty-one intracranial-infection ill children with brain injury and eleven intracranial-noninfection ill children with brain injury were chosen as the researched objects from pediatric intensive care unit of our hospital, severities of their brain damage were evaluated by Glasgow Coma Scale Score, and CRF levels in cerebrospinal fluid and serum TNF- α and IL-6 level were measured by radioimmunoassay.

Results: There was no significant difference of Glasgow Coma Scale Scores between the intracranial infection group and intracranial-noninfection group ($P = 0.3026$), CRF concentration of intracranial infection group in cerebrospinal fluid was significantly lower than that of intracranial noninfection group ($P < 0.01$), serum TNF- α and IL-6 levels of intracranial infection group were significantly higher than those of intracranial-noninfection group ($P < 0.001$, $P < 0.01$). As comparing to the CSF CRF and serum TNF- α and IL-6 in the children with 6 to 7 score of Glasgow Coma Scale Scores, those in the children with 4 to 5 score significantly increased ($P < 0.05$, $P < 0.001$ and $P < 0.05$).

Conclusions: CSF CRF levels of the children with acute brain injury are increased, which may be concerned with the secretion of hypothalamus CRF neuron stimulated by TNF- α and IL-6 and hypoxia stress in ill children with brain injury.