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EXPRESSION OF CASPASE-12 AND GRP94 IN MEDIAL PREFRONTAL CORTEX OF PTSD RATS

D. Zhao, F. Han, ***Y. Shi***

Department of Histology and Embryology, China Medical University, Shenyang, China

Introduction: Post-traumatic stress disorder is an important manifestation of mental and behavioral disorders after the disaste Single-prolonged stress (SPS) is an received established animal model for post-traumatic stress disorder.

Objectives: To investigate endoplasmic reticulum apoptosis pathway and unfolded protein reaction plays an important role in medial Prefrontal Cortex of PTSD rats by Single-prolonged stress (SPS).

Aims: Determined by the change of free intracellular Ca^{2+} the glucose-regulated Protein (GRP)94 and apoptosis-related cacaspase-12 expression.

Methods: A total of 60 healthy, male Wistar rats were selected for this study,randomly divided into a normal control group and SPS groups of 1d,4d,7d,14day and 28day. Behavioral of learning and memory capabilities of rats was observed by using Morris water maze. The expression of , GRP94 and cacaspase-12 was detected using immunohistochemical,Western Blotting and reverse transcription-polymerase chain reaction.

Results: In this study compared with control groups the intracellular free calcium level in mPFC was increased 1 day after SPS exposure ($P< 0.05$) decreased 7 days after SPS. The expression cacaspase-12 peaked at SPS 7d and then gradually decreased. GRP94 express in normal control group and increased 1 day after SPS exposure peaked at SPS 7d and then gradually decreased ,at SPS 28d still higher than normal control group.

Conclusions: In SPS-PTSD rats the learning and memory capabilities of the rats decline;mPFC free intracellular Ca^{2+} may relate to endoplasmic reticulum stress;Endoplasmic reticulum stress launch unfolded protein reaction Endoplasmic reticulum apoptotic process which may relate to the pathogenesis of medial prefrontal cortex abnormal function in PTSD.