

عنوان مقاله:

Investigation of TNF-a Converting Enzyme and Activity of NF-KB in Tolerance to Ischemia Induced by Intermittent Normobaric Hyperoxia in Rat Model

محل انتشار:

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خلاصه مقاله:

Background and objective: Recent studies suggest that intermittent and prolonged normobaric hyperoxia (HO) results in ischemic tolerance to reduce brain injury. In this research attempts were made to see the changes in TNF-a converting enzyme (TACE) and NF-kB activity following intermittent HO and ischemia preconditioning. **Materials and Methods:** The rats were divided into two experimental groups, each consisted of 20 animals. The first group was exposed to 95% inspired HO for 4h/day for 6 consecutive days (intermittent HO; InHO). The second group acting as the control, was exposed to 21% oxygen in the same chamber (normobaric normoxia or room air; RA) continuously for six days (intermittent RA; InRA). Each main group was subdivided to MCAO-operated (middle cerebral artery occlusion), sham-operated (without MCAO), and intact (without any surgery) subgroups. After 24hr, MCAO-operated subgroups were subjected to 60 min of right MCAO. After 24 h reperfusion, neurologic deficit score (NDS) and infarct volume were assessed in MCAO-operated subgroups. Immediately and 48 h after pretreatment, blood sampling for assessment of serum TNF-a levels were subjected. Then, the effect of intermittent HO and ischemia on NF-kB activity and TACE expression were measured. **Results:** Preconditioning with intermittent HO and ischemia decreased NDS and infarct volume. Moreover InHO and MCAO-InHO upregulate TACE and increase NF-kB activity significantly. **Conclusion:** Although further studies are needed to clarify the mechanisms of ischemic tolerance, InHO and ischemia seem to partly exert their effects via increase upregulation of TACE and NF-kB activity.

کلمات کلیدی:

Normobaric hyperoxia, Brain ischemia tolerance, Stroke, TACE, NF-kB activity

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