
Protective effect of erythropoietin on type II pneumocyte cells after traumatic brain injury in rats.

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BACKGROUND: The main objective was to evaluate the protective effect of erythropoietin on lung ultrastructure against damage in rats after traumatic brain injury.

METHODS: We used forty Wistar-Albino female rats weighing 170-200 gr. The rats were allocated into five groups. The first group was the control and the second was the craniotomy without trauma. The third group was the trauma group. The fourth and fifth groups were erythropoietin (1000 IU/kg) and vehicle (0.4 mL/rat) groups, respectively. A weight-drop method was used for achieving head trauma. Samples were obtained from pulmonary lobes 24-hour post injury. Lipid peroxidation levels were determined and electron microscopic scoring model was used to reveal the ultrastructural changes.

RESULTS: Ultrastructural evaluation revealed pathologic changes in the trauma group compared with the control group (p < 0.05). Lipid peroxidation levels were found to be higher in the trauma group (p < 0.05). Erythropoietin significantly reduced both the ultrastructural pathologic changes and the lipid peroxidation levels in the treatment group (p < 0.05).

CONCLUSIONS: Erythropoietin protects the ultrastructure of pneumocyte type II cells against damage after traumatic brain injury.

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