

عنوان مقاله:

Time course changes of oxidative stress and inflammation in hyperoxia-induced acute lung injury in rats

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خلاصه مقاله:

Objective(s): Therapies with high levels of oxygen are commonly used in the management of critical care. However, prolonged exposure to hyperoxia can cause acute lung injury. Although oxidative stress and inflammation are purported to play an important role in the pathogenesis of acute lung injury, the exact mechanisms are still less known in the hyperoxic acute lung injury (HALI). **Materials and Methods:** In this study, we investigated the time course changes of oxidative stress and inflammation in lung tissues of rats exposed to >95% oxygen for ۱۲-۶۰ hr. **Results:** We found that at ۱۲ hr after hyperoxia challenge, the activities of superoxide dismutase and glutathione peroxidase were significantly reduced with remarkably increased lipid peroxidation. At ۱۲ hr, NF-κB p۶۵ expression was also upregulated, but Iκ-Bα expression showed a remarkable decline. Significant production of inflammatory mediators, e.g, interleukin-۱β, occurred ۲۴ hr after hyperoxia exposure. In addition, the expression of intracellular adhesion molecule ۱ expression and the activity of myeloperoxidase were significantly increased at ۲۴ hr with a peak at ۴۸ hr. **Conclusion:** Our data support that hyperoxia-induced oxidative damage and NF-κB pathway activation implicate in the early phase of HALI pathogenesis.

کلمات کلیدی:

Acute lung injury, Hyperoxia, Inflammation, Oxidative stress

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