

عنوان مقاله:

Blood oxygenation during hyperpressure intraperitoneal fluid administration in a rabbit model of severe liver injury:
Evaluation of a novel concept for control of pre-hospital liver bleeding

محل انتشار:

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خلاصه مقاله:

Oxygen is an essential part of the most important metabolic pathways in aerobic organisms. Oxygen delivery is merely dependent on blood, rendering blood loss a devastating event. Traumatic pre-hospital liver bleeding is a major cause of early trauma deaths in human and animals, with no established therapeutic method yet. Increasing intra-abdominal pressure (IAP) has been shown to reduce liver bleeding by half. Although reduction of blood loss could be in favor of blood oxygen delivery, however, the complex interaction between increased IAP and respiratory mechanics during severe hemorrhagic shock remained unclear. We used a novel model of liver trauma in ۱۶ rabbits and randomly assigned them to either normotensive abdomen group or increased IAP by fluid infusion (HA) groups (n=۸ each). Liver size and the amount of liver injury were evaluated. Various blood oxygenation parameters were recorded. Both groups were identical in terms of the liver size and injury. The HA group had significantly lower shock index. Arterial oxygen capacity and oxygen content were higher in the HA group. No significant statistical difference was seen between groups in terms of abdominal perfusion pressure; alveolar pressure of oxygen; dissolved oxygen in blood plasma; alveolar to arterial oxygen tension gradient; arterial to alveolar oxygen pressure ratio; the ratio between partial pressure of arterial oxygen and fraction of inspired oxygen; and respiratory index. In conclusion, the novel therapeutic method of increasing IAP by fluid infusion in a rabbit model of liver hemorrhage preserved blood oxygenation better than the classic therapeutic method.

کلمات کلیدی:

Intra-abdominal hypertension, Liver, Hemorrhage, Pre-hospital care, Rabbit

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