

Effects of different fluid resuscitation speeds on blood glucose and interleukin-1 beta in hemorrhagic shock.

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BACKGROUND: Fluid resuscitation is an important treatment for hemorrhagic shock. However, evidence of guidelines for fluid resuscitation is limited. The expressions of blood glucose and proinflammatory cytokines under different resuscitation rates are still unknown. In this study, the status of blood glucose and interleukin-1beta (IL-1beta) between rapid and slow fluid resuscitation for hemorrhagic shock were compared.

METHODS: Twenty-four male Wistar-Kyoto rats were used in the study. The volume of blood withdrawal was 40% of the total blood volume of a rat and fluid resuscitation was given immediately after blood withdrawal. Rats were randomly divided into control group, 10 minutes rapid group, and 12 hours slow group. **RESULTS:** Our findings show that a 10 minutes rapid infusion may provide the blood pressure and heart rate stability at early phase of hemorrhage. Moreover, rapid infusion decreases blood glucose and IL-1beta at 1, 3, 6, 9, 12, 18, and 48 hours after fluid resuscitation. However, the levels of glucose and IL-1beta were not different between control and the slow group. **CONCLUSION:** Rapid fluid resuscitation ameliorates hyperglycemia and inflammatory response after hemorrhagic shock. Knowledge of advanced treatment will facilitate optimal care delivery for patients with hemorrhagic shock.