

## **Mechanisms of action of ozone in maintaining energy metabolism in hemorrhagic shock**

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Nihon University Journal of Medicine (2002), 44(4), 123-133.

ISSN: 0546-0352.

Journal written in English.

CAN 139:207403

### **Abstract**

The pathol. condition created by oxygen administration and fluid resuscitation in hemorrhagic shock treatment is considered as a global ischemia-reperfusion injury and the free radicals produced during shock play an important role. When an ozonated soln. was administered, the results revealed that energy metab. was activated and maintained. In the present study, we focused on the prodn. of glutathione involved in the pentose phosphate pathway which is a part of the mechanism of action of ozone in maintaining tissue energy metab. and also the cellular protective action of glutathione in maintaining its reduced state and removing active oxygen. The mechanism of action of ozone in maintaining tissue energy metab. was investigated in relation to the glutathione system. The results demonstrated significant increases in GSH and GSSG when blood was withdrawn. There were no significant differences in GSH and GSSG between the Salinehes group and the ozonated Salinehes group at 50 min after blood withdrawal. However, the GSH and GSSG values in the ozonated Salinehes group tended to reveal lower values. Concerning the action in maintaining energy metab. in hemorrhagic shock, it is suggested therefore that the administration of an ozonated soln. may be involved via the pentose phosphate pathway.