Title:	Salutary consequences of oxygen therapy on the long-term outcome of hemorrhagic shock in awake, unrestrained rats
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Abstract:	Decreased oxygen delivery and cellular hypoxia are major factors in the pathophysiology of shock. We studied the effects of 100% O2 at 0.1 and 0.3 MPa (1 and 3 atm abs) in severe hemorrhagic shock in awake, unrestrained rats. Shock was induced by withdrawing 50% of the total blood volume within 120 min. Blood pressure, heart rate, and the electroencephalogram (EEG) were recorded during the first 6 h of the protocol. The animals were observed for 7 days. The shock protocol resulted in 60 and 90% mortality after 1 day and at the end of 7 days, respectively. A single 90-min exposure to O2 at 0.1 and 0.3 MPa, which was started 30 min after bleeding, maintained mean arterial blood pressure at significantly higher values compared to untreated controls throughout the exposure period ($P < 0.05$). Oxygen therapy at both doses also improved the long-term survival rate and survival time significantly ($P < 0.01$). No clinical or EEG sign of CNS O2 toxicity was detected in O2-treated animals. Our results indicate that O2 given alone after severe bleeding exerts a beneficial effect on the long-term outcome of hemorrhagic shock in awake, unrestrained rats.
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