Hemodynamic responses to ketamine and diazepam in dogs with acute cardiac tamponade.

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摘要

Abstract

Induction of anesthesia may produce a significant hazard to patients with critical cardiovascular status. Ketamine has been advocated as the drug of choice for maintaining cardiovascular performance during induction of anesthesia in high-risk surgical patients. There is no detailed information on the use of ketamine in patients with acute cardiac tamponade. The purpose of this study was to assess the safety of ketamine in acute cardiac tamponade in dogs. Sixteen dogs were studied and a Swan-Ganz catheter was inserted through the right external jugular vein to measure hemodynamic parameters. Data obtained before tamponade was used as the control, then, tamponade was accomplished by infusing a mixture of saline and blood from the same dog through a catheter into the pericardial sac. Ketamine, 2 mg/kg intravenously resulted in an improvement of cardiac output from 1.2 +/- 0.5 L/min to 2.2 +/- 0.3 L/min (p less than 0.05). The addition of diazepam 0.3-0.5 mg/kg blunted the ketamine-induced cardiostimulation and resulted in a fall in cardiac output from 2.2 +/- 0.3 L/min to 1.7 +/- 0.2 L/min (p less than 0.05). Five dogs with intrapericardial pressure above 10 mmHg did not respond to ketamine. Diazepam did not blunt any more to these decompensated dogs. This study demonstrated that ketamine plays a beneficial role in acute cardiac tamponade as a safe induction agent. Limitation still existed when using ketamine in dogs with high intrapericardial pressure because they showed only negative inotropic effect during decompensation. Diazepam inhibited the cardiostimulant effects of ketamine in dogs with tamponade, but could not elicit a negative inotropic effect during decompensation. The practical application of ketamine and diazepam in patients with acute cardiac tamponade could be determined by evaluation of intrapericardial pressure through a needle-transducer kit.