

Cardiorespiratory inhibitory reflex induced by intravenous administration of acetaldehyde in rats

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In urethane anesthetized rats, intravenous administration of a bolus of acetaldehyde (diluted 50 times its volume in Ringer Locke solution) induced after a latency of about 1 second, a triple reflex response characterized by transient bradycardia, hypotension and apnea. Intensity of both bradycardia ($r=-0.78$) and hypotension ($r=-0.74$) were dose dependent ($p<0.001$). The triple response was blocked by vagotomy. Atropine and hexamethonium blocked bradycardia and hypotension and pretreatment of rats with reserpine (0.5 mg/100 g b.wt., IP) did not change the magnitude of the reflex response. The bolus effect was discarded by injecting the same volume of Ringer Locke solution in control test experiments. Administration of acetaldehyde directly into the left ventricle induced neither bradycardia nor hypotension, thus discarding a Bezold-Jarish reflex response. Administration of acetaldehyde directly into the right ventricle induced an increase in reflex bradycardia, hypotension and apnea with