

## **Effects of xylazine on acid-base balance and arterial blood-gas tensions in goats under different environmental temperature and humidity conditions**

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### **Abstract**

The effects of acute exposure to 3 different temperature and humidity conditions on arterial blood-gas and acid-base balance in goats were investigated after intravenous bolus administration of xylazine at a dose of 0.1 mg/kg. Significant ( $P < 0.05$ ) changes in the variables occurred under all 3 environmental conditions. Decreases in  $pH$ , partial pressure of oxygen and oxyhaemoglobin saturation were observed, and the minimum values for oxygen tension and oxyhaemoglobin saturation were observed within 5 min of xylazine administration. The  $pH$  decreased to its minimum values between 5 and 15 min. Thereafter, the variables started to return towards baseline, but did not reach baseline values at the end of the 60 min observation period. Increases in the partial pressure of carbon dioxide, total carbon dioxide content, bicarbonate ion concentration, and the actual base excess were observed. The maximum increase in the carbon dioxide tension occurred within 5 min of xylazine administration. The increase in the actual base excess only became significant after 30 min in all 3 environments, and maximal increases were observed at 60 min. There were no significant differences between the variables in the 3 different environments. It was concluded that intravenous xylazine administration in goats resulted in significant changes in arterial blood-gas and acid-base balance that were associated with hypoxaemia and respiratory acidosis, followed by metabolic alkalosis that continued for the duration of the observation period. Acute exposure to different environmental temperature and humidity conditions after xylazine administration did not influence the changes in arterial blood-gas and acid-base balance.