

## **EFFECTS OF TETRACYCLINE INJECTION ON BLOOD CALCIUM AND RUMINAL ACTIVITY IN SHEEP**

*P. Mudroň*

pavol.mudron@uvlf.sk

University of Veterinary Medicine and Pharmacy in Košice, Košice, Slovak Republic

Tetracycline is widely used in the treatment of the foot rot in ruminants. They chelate with  $\text{Ca}^{2+}$  ions causing a depression of levels of ionised calcium. The objective of the study was to assess effects of tetracycline administration on serum calcium concentrations and the frequency of ruminal contractions.

Rumen contractions were monitored by auscultation in 23 sheep prior to administration of oxytetracycline and recorded every 12 hours for 84 hours after intramuscular injection of the antibiotic. Blood for calcium analyses was collected by venepuncture of the jugular vein before and 24, 48, 72, and 96 hours after administration of oxytetracycline. The serum calcium concentrations were determined by atomic absorption spectrophotometry. Analysis of variance (ANOVA) was used to analyse the time effect of tetracycline treatment on the rumen contractions and serum calcium concentrations.

There was a significant decrease ( $P < 0.01$ ) in ruminal contractions following application of oxytetracycline, with a maximum decrease at 24 hours following oxytetracycline application and a return to the initial rumen contraction frequency by 60–72 hours following oxytetracycline application. The oxytetracycline administration resulted in serum calcium decrease from 2.42 mmol/l to 2.26 mmol/l 24 hours after the administration ( $P < 0.01$ ).

In conclusion, the administration of tetracycline in sheep can be associated with a decline in ruminal motility potentially causing production losses, particularly in lactating ewes. Despite the resulting transient production decreases, oxytetracycline remains the antibiotic drug of choice for the treatment of bacterial infections in small ruminants, foot rot especially.

**Keywords:** SHEEP, TETRACYCLINE, RUMINAL ACTIVITY