

EFFECT OF THE USE OF CATOSAL B₁₂® AT THE BEGINNING OF THE TUPPING TIME ON THE REPRODUCTIVE PERFORMANCE OF EWES GRAZED ON NATURAL PASTURES OF STATE OF RIO GRANDE DO SUL / BRAZIL

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In a flock of 384 Polwarth cross ewes, grazed on natural pastures of the Central area of Rio Grande do Sul State, Brazil a mob of 177 ewes was selected on the last week of February, 2009. All the experimental sheep had their oestrus synchronized at the beginning of March using the Synchrovine™ protocol and were allocated in three different groups with similar age, weight and condition scores (CS) as follow: Group T1 (n 59) treated with two doses (5 mL, IM) of Catosal B₁₂® on days zero (D0) and seven (D7), just after the prostaglandin application; Group T2 (n 57) got a dose of Catosal B₁₂® on day zero (D0) and Group C (n 60) was left as untreated controls. All the ewes were exposed to 6% of fertile rams for four weeks. The scanning for pregnancy was carried out on day 40 after the ram being removed from the flock. The pregnancy rates for T1 and T2 were respectively 93 and 95%, significantly different ($p < 0,05$) than that found for the control group @ 82%. The prolificacy of the T1(110%) ewe group was significantly higher ($p < 0,05$) than the two other groups, T2 (105%) and C (88%), respectively. The results suggest that the use of Catosal B₁₂® at the beginning of estrus synchronization did enhance the pregnancy rate of ewes kept on natural pastures as well as have a positive effect on twin birth leading to an increase of the prolificacy rate.

Keywords: Catosal B₁₂; sheep reproduction efficiency; ewe pregnancy rate; prolificacy.

REPRODUCTIVE PERFORMANCE IN DORPER EWES SYNCHRONIZED AT ESTRUS DURING NON BREEDING SEASON UNDER TROPICAL CONDITIONS

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The objective of this study was to evaluate the reproductive performance of 51 Dorper ewes during non-breeding season under tropical conditions of Mexico. The experiment was carried out on "Las Delicias" farm, located in the municipality of Metapa de Dominguez, Chiapas (14° 50' 08" N and 92° 11' 28" W), with an altitude of 100 m above sea level. The predominant climate is warm-humid with rainfalls in the summer, annual mean temperature of 25°C and annual mean precipitation of 2 200 mm. The ewes were assigned to a completely randomized unbalanced design with three treatments and different number of replications, where the replication was represented by one ewe. Treatment 1(T1) was considered as control, where the ewes remained constantly with the male, during the time of the experiment. An intravaginal sponge impregnated with 65 mg of medroxyprogesterone (MPA) was introduced to treatment 2 ewes (T2) during 12 days, and at removing it, 500 I. U. equine chorionic gonadotrophin were applied. On the next day, the ewes were exposed to three males of the same breed of proven fertility, and in treatment 3 (T3), the ewes under study received a dose of 100 µg releasing gonadotrophin hormone (GnRH) intramuscularly, 5 days afterwards, 7.5 mg of Luprostiol, and 36 h later, a second dose of GnRH were applied. The sheep showing premature estrus during the hormonal treatment were natural breeding with the male every six hours, until completing three services. The variables of the study were: onset of estrus, distribution of estrus, estrus percentages, pregnancy percentages and prolificacy percentages. Data were analyzed using the GLM procedures of SAS for a completely randomized design and the proportion variables with the T student test. Estrus percentages were 65, 93.3, and 25% for T1, T2, and T3, respectively. The average pregnancy percentage was 43.7%, being 40, 60, and 18.6% for T1, T2, and T3, respectively, and the prolificacy percentage was 100% for T1, T2, and T3 respectively. It is concluded that intravaginal sponges impregnated with 65 mg of medroxyprogesterone acetate used during 12 days, plus 500 I. U. of eCG, efficiently synchronize estrus in Dorper ewes, whereas ovsynch scheme presented low pregnancy and prolificacy percentage.

Keywords: Medroxyprogesterone, eCG, reproduction, ewes.

PHARMACOKINETICS OF TULATHROMYCIN FOLLOWING SUBCUTANEOUS ADMINISTRATION IN MEAT GOATS

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Tulathromycin is a triamilide antibiotic approved for the treatment of respiratory disease in cattle and swine. Due to its long persistence, tulathromycin has been recommended for the treatment of several diseases in goats, such as pneumonia and caseous lymphadenitis. To investigate the pharmacokinetics of tulathromycin in meat goats, 10 healthy Boer goats were given a single 2.5 mg/kg subcutaneous (SC) dose of tulathromycin and blood was collected for 600 hours after administration. Plasma concentrations were measured by ultra-high pressure liquid chromatography tandem mass spectrometry (UPLC-MS/MS) detection. Plasma maximal drug concentration (C_{max}) was 633 ± 300 ng/ml (0.40 hours after injection). The half-life of tulathromycin in goats was 117.9 ± 33.9 hours. Tulathromycin was rapidly absorbed and distributed widely after subcutaneous injection (apparent volume of distribution was 34 ± 9 L/kg). The mean area under the curve (AUC) of the group was 12,500 ± 2,021 hr*ng/mL for plasma. Overall the pharmacokinetics of tulathromycin after a single 2.5 mg/kg SC injection in goats were similar to what has been previously reported in cattle. Therefore tulathromycin could be potentially useful drug in meat goats, maintaining therapeutic drug concentrations for an extended period of time. A 23-day meat withdrawal interval would be recommended following the administration of tulathromycin in goats.

LUMBOSACRAL EPIDURAL MAGNESIUM PROLONGS KETAMINE ANALGESIA IN CONSCIOUS SHEEP: A PROSPECTIVE, RANDOMIZED, EXPERIMENTAL TRIAL

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Objective: To determine the analgesic, motor, sedation and systemic effects of lumbosacral epidural magnesium sulphate added to ketamine in the sheep.

Study design: A Prospective, Randomized, Experimental Trial.

Animals: Six healthy adult mixed-breed sheep; weighing 33-54 kg (mean, 43 kg) and aged 20-36 months.

Methods: Each sheep underwent three treatments, at least 2 weeks apart, via epidural injection:

- (1) ketamine (KE; 2.5 mg/kg),
- (2) magnesium sulphate (MG; 100 mg), and
- (3) KE + MG (KEMG; 2.5 mg/kg + 100 mg, respectively).

Epidural injections were administered through the lumbosacral space. Analgesia, motor block, sedation, cardiovascular effects, respiratory rate, skin temperature, and rectal temperature were evaluated before (baseline) and after drug administration as needed.

Results: The duration of analgesia with the lumbosacral epidural KEMG combination was 115 ± 17 min (mean ± SD), that is, more than twice that obtained with KE (41 ± 7 min) or MG (29 ± 5 min) alone. KE and KEMG used in this experiment induced severe ataxia. The cardiovascular changes were no statistical difference in these clinically healthy sheep.

Conclusion: Results of this study support, that adding a dose of MG to lumbosacral epidural KE in sheep is feasible and safe.

Clinical relevance: Further studies are required to determine whether epidural administration of this combination in sheep results in conditions suitable for performing prolonged surgery.

PRIMARY LUNG NEOPLASIA IN OVINE. DESCRIPTION OF AN UNUSUAL CASE

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A 7 year-old ewe, Bordaleira Serra da Estrela breed, was submitted to the pathology service of the Superior Agrarian School of Viseu, after sudden death during a vaccination procedure, without previous clinical signs records. The animal presented a good body condition and mucopurulent nasal discharge. After the opening of the thoracic cavity, a whitish proliferative lobulated mass, with firm consistence, surrounding the heart, was seen. A massive hydrothorax was also present. Parietal pericardium was adherent to the stern. Several nodules were found close to the parietal pleura, and were also present at the medial aspect of the ribs. The medial surface of the lungs presented several whitish spots.

Given the singularity of the lesions, its location, the main objective of this work is describing this rare pulmonary and pericardic lesion, shedding concerns on new pathways for this oncogenic event and providing new approaches in ovine oncology diagnostics.

Samples from the lungs, mass surrounding the heart, liver, spleen and small bowel were processed for routine histopathological diagnosis and an immunohistochemical study was also performed.

Microscopic exam of the lung fragments revealed atelectasy, severe congestion, peribronchiolar cuffing and lung interstitium mononuclear inflammatory infiltrate, very rich in macrophages and lymphocytes. The spots corresponded to a bronchic epithelium hyperplasia, with intense desquamation.

Pleura hypertrophy, with epithelial metaplasia, cubic appearance, papillomatous type proliferations, fibrosis and neovascularisation was also seen.

Microscopically, the proliferative pericardic mass corresponded to small undifferentiated epithelial cells proliferations, in a tubular type pattern organization, with abundant fibrous tissue stroma. Nevertheless, some areas with well differentiated cylindrical epithelium, and, pseudostratified cylindrical type, apparently ciliated, in one of the lobules were also seen.

The authors suggest the hypothetic diagnosis of an extra pulmonary (pericardic) metastasis of a primary lung neoplasia.

WHITE BLOOD CELLS COUNT OF THE NEWBORN GOAT KIDS

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Introduction: The colostrum contains important immunological cytokines, maternal antibodies and approximately 10^6 leukocytes/mL. Hundreds of millions of those leukocytes are ingested in the first feeding and cross the intestinal mucosa reaching the newborn circulation.

Aims: The aim of this study was to hypothesize the influence of colostrums intake on the white blood cells (WBC) count of the newborn goat kids in the first 24 hours of life.

Methods: To this end, 33 goat Bôer kids were used, regardless of their sex, on a farm in Araçatuba, São Paulo, Brazil. The blood samples were collected by jugular venipuncture immediately after birth and 24 hours of life, using vacuum tubes with K_2 EDTA anticoagulant and kept refrigerated until their processing. WBC count, neutrophils, lymphocytes and monocytes was performed by manual counting. Data were analyzed using a statistical program. The ANOVA was performed to determine whether there were any significant differences between moments, and mean values were compared by use of a Tukey test. Non-parametric data were analyzed by use of the Friedman test followed by the Dunn test. A values of $P \leq 0,05$ was considered significant for all tests.

Results: The average values observed at birth were 4398.3 ± 1410.3 cells/mL of WBC count; 2092.6 ± 831.9 cells/mL of neutrophils; 2039.5 ± 796.2 cells/mL of lymphocytes and 114.0 ± 82.7 cells/mL monocytes, and the 24 hours of life the values observed were 6873.5 ± 2201.7 cells/mL; 4505.6 ± 1822.7 cells/mL; 2081.8 ± 1454.2 cells/mL; 260.4 ± 236.4 cells/mL for WBC count, neutrophils, lymphocytes and monocytes, respectively. The significant increase of WBC count ($P < 0.0004$) and neutrophils ($P < 0.0001$) were due the colostrum intake, and, consequent absorption of leukocytes and by the migration of neutrophils through the intestinal mucosa, as reported in pigs and calves.

Conclusion: The average values of WBC count and neutrophils increase in the end of the first day of life due to colostrum intake.

COMPARISON OF RECTAL TEMPERATURES AND SPECIFIC HUMORAL IMMUNE RESPONSES AFTER VACCINATION OF FATTENING LAMBS WITH TWO POLYCloSTRIDIAL VACCINES UNDER FIELD CONDITIONS

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Objectives: A study was performed to compare the systemic reactions in terms of rectal temperatures after vaccination of fattening lambs with two polyclostridial vaccines, as well as to establish the specific immune response induced by either vaccine.

Materials and methods: The study was established as randomised blind comparative trial under field conditions. Fifty lambs at the age of 2-3 weeks were included in the study. The animals were randomly assigned to two vaccinated groups of 20 animals each and a control group of 10 animals. The animals were vaccinated with 2 ml of saline, 1 ml of vaccine B (Bravoxin[®]-10; Polibasco[®]-10, Intervet/Schering-Plough Animal Health) or 2 ml of vaccine C (Cevac[®] Ovine Clostridium, Ceva Sante Animale). All vaccinations were performed subcutaneously and repeated after 28 days.

Rectal temperatures were taken prior to the vaccinations, and then daily for 4 days. Blood samples were taken from each lamb prior to the application of the first vaccine dose 14 days after the administration of the second vaccine dose. The serum samples were pooled by group and sample date and tested for specific antibodies against *C. tetani*, *C. novyi* B, *C. perfringens* C, *C. perfringens* D, *C. septicum* y *C. sordellii* in a toxin neutralisation test. Antibodies against *C. tetani*, *C. novyi* B, *C. perfringens* A, B, C, D, *C. septicum*, *C. sordellii* y *C. chauvoei* were measured in an indirect ELISA assay.

Results: Following the administration of the first vaccine dose the temperature evolution was very similar in both vaccinated groups B and C and both were higher than the control group (Group A). After application of the second dose, the temperature levels were higher in Group B than in the two other groups. At no time, the increase in body temperature had an effect on the general health of the animals. However, the increase in temperature might be associated with an increased serological response as the serological response obtained 14 days after the administration of the booster, was higher in Group B than in Group C for all of the antigens studied, common for both vaccines except for *C. septicum*, which was higher in Group C than in group B.

Conclusions: It can be concluded that
i) both vaccines induced acceptable systemic reactions and
ii) the specific antibody response against all but one antigen tested (*C. septicum*) was higher after vaccination with vaccine B.

Keywords: Clostridia, sheep, vaccination

EFFECT OF GRAZING SYSTEM ON HEMATOLOGICAL PARAMETERS OF SHEEP AND CATTLE

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Considering the adverse effects of infections of gastrointestinal parasites in sheep, including effects on the hematological system and resistance to antihelmintics, there is a need to develop alternatives for their control. The aim of this study was to compare the grazing systems (cattle and sheep in single species pastures, simultaneous and alternate grazing of sheep with cattle) in terms of hematologic variations in the animals. The experiment was conducted in central-west Brazil. Eight hectares of Panicum cv Tanzania was subdivided into paddocks of 0.25 ha, in which four management systems were studied: 1 - Grazing cattle alone; 2 - Grazing sheep alone; 3 - Grazing sheep and cattle in the same pasture simultaneously; and 4 - Alternate grazing sheep and cattle, with sheep grazing after cattle were removed from the pastures. The experimental animals were 12 growing cattle with an average weight of 200 kg and 30 Santa Ines lambs with average weight of 20 kg. The animals received water and mineral salt ad libitum and a daily allowance of 200 and 2245 grams / animal concentrate