JIVS
The Chamber of Veterinary Surgeons, Istanbul
e-ISSN: 2602-3490
Abbr. Title: J Ist Vet Sci

Journal of Istanbul Veterinary Sciences (JIVS)

Journal home page: www.jivs.net
http://dergipark.gov.tr/http-www-jivs-net
Since 2017

JIVS JOURNAL OF ISTANBUL VETERINARY SCIENCES

Special Issue; Vetexpo-2019, KHVD-2019 E-ISSN: 2602-3490

Indexes and Platforms

Turkey citation index, Google scholar, ResearchBib, Bielefeld Academic Search Engine, Cosmos IF, İnternational Institute of organized research(I2OR), Scientific İndexing service, CrossRef, Eurasian Scientific Journal Index, Open AIRE, General Impact factor, Directory of Research Journals Indexing (DRJI), ASOS index.

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Determination of poultry heterophile functions by flow cytometry

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Abstract

The aim of this study is to modify the flow cytometric methods for avian heterophil that used to analyze neutrophil functions. Within the aim of the project, we tested the amount of blood for acquiring the heterophil and the storage duration of the blood before the analysis and the time of centrifugation. Also, we tested the amounts of cell suspension and dihydrordamine-123 (DHR-123) during the flow cytometric analysis. We reviewed the amount of porbol miristat asetat (PMA) used to stimulate the oxidative burst and the amount of formyl methionyl-leucyl-phenylalanine (fMLP) used to stimulate chemotaxic activity. Experiments on the incubation temperature and incubation duration were also performed. The results showed that 0.5-3 ml of blood could be used to detect heterophil functions and it would be ideal to study in fresh blood samples. However, it also showed that the stored blood can be used for a maximum of 8 hours at +4 degrees. In order to isolate the cells, centrifugation of blood samples for 30 minutes would be sufficient, and it would be appropriate to use 30µL from the cell suspension. DHR-123, which is used as a chemical probe to measure heterophil functions, had to be used in 2µL, and when used excessively, it affected the heterophil functions negatively. In addition, it was seen that using 2µL each of fMLP, which is used as an oxidative burst stimulant, and PMA as a stimulant of chemotaxic activity was sufficient. It was concluded that the incubation at 41 ° C for 5 minutes after stimulating the heterophil would also be sufficient. As a result, it was thought that this study could be used to isolate heterophil and to analyze with flow cytometry and to contribute further research and clinical studies in poultry.

Keywords: Heterophil, flow cytometry, phagocytic activity, oxidative burst, chemotaxic activity

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VETEXPO-2019 homepage: http://vetexpo.org/
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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Determination the effects of capsaicin on the growth of pure cultures of rumen bacteria

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Abstract

Capsaicin that is a major pungent component of red pepper is widely used as food additive and considered to be an antimicrobial factor. In this study, it was aimed to determine the effects of capsaicin on the growth of pure cultures of Gram-positive and Gram-negative rumen bacteria to evaluate potential of capsaicin as an alternative to ionophore antibiotics in modification of ruminal fermentation. The antibacterial activity assays of capsaicin were carried out using broth microdilution method under strictly anaerobic conditions inside an anaerobic chamber. Capsaicin was used in a dose range of 0.5-256 µg/mL. Capsaicin exhibited potential antibacterial activity on *Ruminococcus flavefaciens* and *Methanobacterium formicicum* ($p<0.05$), although it did not inhibit these bacteria completely. On the other hand, capsaicin showed growth stimulatory effect on Ruminococcus albus at 0.5-128 µg/mL doses ($p<0.05$), while potential antibacterial activity was observed at 256 µg/mL ($p<0.05$). Growth of other Gram-positive rumen bacteria, *Butyrivibrio fibrisolvens* and *Eubacterium ruminantium* were stimulated by capsaicin at 0.5-64 µg/mL and 8-128 µg/mL doses, respectively ($p<0.05$), however stimulatory effects disappeared at higher concentrations. Capsaicin had stimulatory effects on *Streptococcus bovis* from Gram-positive bacteria at all used doses ($p<0.05$). Capsaicin also showed stimulatory effects on the growth of Gram-negative rumen bacteria, *Megasphaera elsdenii* and *Fibrobacter succinogenes*, at 0.5-128 µg/mL and 1-256 µg/mL concentrations, respectively ($p<0.05$). Stimulatory effects of capsaicin on some hydrogen, formate and lactate producer Gram-positive rumen bacteria suggested that the mechanism of action of capsaicin in the rumen may be different from ionophore antibiotics.

Keywords: Antibacterial, capsaicin, rumen bacteria

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VETEXPO-2019 homepage: http://vetexpo.org/
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INTRODUCTION

Ionophore antibiotics have been used since 1970s in order to avoid unwanted ruminal losses and control metabolic disorders. But, use of antibiotics as feed additives was banned in European Union (EU) by January 21, 2006 since they leave residues in animal products and develop resistance in bacteria (Jouany and Morgavi 2007). An intense interest has occurred on safer antimicrobial agents which can be alternatives to antibiotics as feed additives after this ban. Mostly plant extracts and secondary bioactive plant metabolites are focused due to their potential to modify ruminal fermentation in recent years.

Capsaicin is a major pungent component of red pepper (Surh and Lee, 1996). It is also the main component of capsicum oil (10 to 15%) (Cichewicz and Thorpe, 1996). Capsaicin is widely used as food additive and considered to be an antimicrobial factor. Capsaicin was reported to have a strong inhibitory effect on Bacillus subtilis, Escherichia coli (Molina-Torres et al., 1999), Salmonella typhimurium, Pseudomonas aeruginosa (Careaga et al. 2003), Staphylococcus aureus (Omolo et al., 2014), Streptococcus pyogenes (Marini et al., 2015), and Helicobacter pylori (Jones et al., 1997). There are some reports on the effects of capsaicin on in vitro (Cardozo et al., 2004; Busquet et al., 2005) and in vivo (Cardozo et al., 2006) ruminal fermentation. However, to the our knowledge, the effects of capsaicin on pure cultures of rumen bacteria have not been evaluated previously. Such an information can contribute to the clear physiological mechanisms and the mode of action of capsaicin in the rumen.

Therefore, the objective of the present study was to investigate the effects of capsaicin on pure cultures of some Gram-positive and Gram-negative rumen bacteria.

MATERIAL AND METHODS

Capsaicin: Capsaicin was purchased from Santa Cruz Biotechnology (Istanbul, Turkey).

Bacterial strains: The Gram-positive bacterial species used in antimicrobial tests were Ruminococcus albus (ATCC 27210) and Ruminococcus flavefaciens Sijpestejin C97 (ATCC 49949) as hydrogen, formate and, acetate producers, Butyrivibrio fibrisolvens D1 (ATCC 19171) and Eubacterium ruminantium GA 195 (ATCC 17233) as butyrate producers, and Streptococcus bovis (ATCC 33317) as a lactate producer. Methanobacterium formicicum (ATCC 33274), a mesophilic methanogen, was used as a methane producer. The Gram-negative bacterial species tested were Fibrobacter succinogenes S85 (ATCC 19169) and Megasphaera elsdenii LC1 (ATCC 25940), which were used as succinate and propionate producers.

Anaerobic media: Growth media for bacterial cultures were prepared under CO2 to maintain anaerobic conditions according to Orpin (22). The chemical composition of anaerobic media is shown in Table 1. The media was gassed with CO2 while heating to 60 °C in a hot water bath to remove O2 completely. The conversion of the color of medium to dull yellow from bluish purple by the resazurin (0.1%, v/v), which is a redox potential indicator in the medium, was considered to be a sign of removal of oxygen. Bottle of media was closed with a rubber stopper and autoclaved. Anaerobic bacteria were grown at 37 oC for 24-72 h under strictly anaerobic conditions inside an anaerobic chamber (Whitley DG250, Don Whitley, West Yorkshire, UK) under an atmosphere of N2-CO2-H2 (80:10:10).

Antibacterial activity assays: The antibacterial activity assays of capsaicin were carried out using a broth microdilution method following the Clinical and Laboratory Standards Institute guidelines (CLSI, 2016) in the anaerobic chamber. Stock solution of capsaicin (100 mg/mL) was prepared dissolving capsaicin in 50 % (v/v) ethanol. A serial 2-fold dilution of capsaicin (256, 128, 64, 32, 16, 8, 4, 2, 1, 0.5 µg/mL) was prepared in the anaerobic media. Two hundred microliters of each concentration was added to wells of a 96-well plate (Corning 3599, Flat bottom). Then, 20 µL aliquots of 4 × 1010 cell/mL bacteria were added into each well. Triplicate wells were used for each concentration. Negative control wells without antimicrobial compounds and media control wells without bacteria were maintained for each set. After incubation at 37 °C for 24 h in the anaerobic chamber, microbial growth was determined at 600 nm using a plate reader (BioTek, Epoch). A significantly lower OD600 value compared to control dose (0 µg/mL) was accepted as potential antibacterial activity (Ko et al., 2018) while significantly higher OD600 value was accepted as stimulatory activity.

Statistical analyses: Statistical analysis was carried out by the use of one-way ANOVA followed by Dunnett's test. Each well of a 96-well plate was an experimental unit. A value of $p<0.05$ was taken to indicate a significant difference.

RESULTS

Effects of capsaicin on rumen bacteria are presented in Figure 1 and Figure 2. Capsaicin exhibited potential antibacterial activity on R. flavefaciens and M. formicicum ($p<0.05$), although it did not inhibit these bacteria completely. On the other hand, capsaicin showed growth stimulatory effect on R. albus at 0.5-128 µg/mL doses ($p<0.05$), while potential antibacterial activity was observed at 256 µg/mL ($p<0.05$). Growth of other Gram-positive rumen bacteria, B. fibrisolvens and E. ruminantium were stimulated by capsaicin at 0.5-64 µg/mL and 8-128 µg/mL doses, respectively ($p<0.05$), however stimulatory effects disappeared at higher concentrations. Capsaicin had stimulatory effects on Streptococcus bovis from Gram-positive bacteria at all used doses ($p<0.05$). Capsaicin also showed stimulatory effects on the growth of Gram-negative rumen bacteria, M. elsdenii and F. succinogenes, at 0.5-128 µg/mL and 1-256 µg/mL concentrations, respectively ($p<0.05$).

DISCUSSION

In this study, capsaicin was evaluated for its potential to be an alternative to ionophore antibiotics in modification of ruminal fermentation. Capsaicin had a potential antimicrobial activity on R. flavefaciens at all concentrations and on R. albus at only highest concentration. Ruminococcus species produce mostly hydrogen, formate and, acetate in the rumen. Capsicum also had potential to inhibit methane producing M. formiciccum, at doses above 4 µg/mL. On the other hand, capsicum stimulated the growth of butyrate, and propionate producing bacteria in this study. Calsamiglia et al. (2007) reported that capsaicin may increase propionate production, and reduce acetate or methane production. Fandi˜no et al. (2008) also reported that capsicum increased butyrate proportion from 13.0 to 14.1 mol/100 mol, and reduced acetate proportion from 55.3 to 54.0 mol/100 mol versus control. The results of these studies are consistent with the results of our study. Stimulatory effects of capsaicin on butyrate producing bacteria suggested that the mechanism of action of capsaicin in the rumen may be different from ionophore antibiotics. Nevertheless, the stimulatory activity of capsaicin on some acetate and butyrate producer Gram-positive bacteria like R. albus, B. fibrisolvens and E. ruminantium disappeared at higher concentrations in the present study. Some phytochemicals could promote in vitro bacterial growth and feed utilization in the rumen at low doses while they exhibited inhibition at high doses (Demirtas et al., 2019; Patra et al., 2012). Therefore, further studies are required on the effects of higher doses of capsaicin on pure cultures of rumen bacteria to clarify the mode of action of capsaicin on rumen fermentation.

CONCLUSIONS

Stimulatory effects of capsaicin on some acetate, butyrate and lactate producer Gram-positive rumen bacteria especially in low doses suggested that the mechanism of action of capsaicin in the rumen may be different from ionophore antibiotics. However, further studies are required on the effects of higher doses of capsaicin on pure cultures of rumen bacteria to clarify the mode of action of capsaicin on rumen fermentation.

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Retrospective analysis of central and eastern black sea region ruminants in terms of copper deficiency

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Abstract

Diseases due to copper deficiency (enzootic ataxia, swayback, bowleg) which led to extremely high levels of lamb death were first detected in 1961 at a state farm in Karaköy, Samsun. In subsequent studies, it was found that they caused lamb death in the delivery season with a rate of 30-40%. According to another study conducted in five different geographical regions (1996), the lowest plasma copper concentration in sheep and cattle was found in Samsun and Sivas. Since 1961, many researchers have been interested in the subject and studies have been conducted. Samsun Directorate of Veterinary Control Institute serves 9 provinces in the region with the Biochemistry Laboratory established in 2004. In addition, information is obtained about the mineral substances in the region with TAGEM projects carried out. The aim of the present study is to evaluate the region in terms of copper by retrospectively examining the sample results that have been sent to our institute in the last five years. Serum and liver samples of cattle, sheep and goats which were sent to our institute for analysis were analyzed with AAS-FL (Atomic Absorption Spectrophotometer flame system) in our laboratory. The results were arranged according to reference value range. According to the data records of our institute between 2014-2019 (first four months), copper deficiency was found in 65.3% of cattle samples, 44.73% of sheep samples and 66.6% of goat samples which were sent with suspected copper deficiency. According to the results of data, it was found that although previous studies have created awareness, copper deficiency is still a problem in our region.

Keywords: Copper deficiency, black sea, Samsun, ruminant

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

The evaluation of prevalence and risk factors of overweight and obesity in cats from some private veterinary clinics in Istanbul, Turkey

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Abstract

Overweight and obesity in cats is known as one of the most common welfare issues. According to various studies, many risk factors such as age, breed, gender, neutering, food type, inactivity, diseases etc. played role in this problem. The aim of this study was to evaluate the relationship between potential risk factors and overweight or obesity in cats. A total of 264 cats were evaluated in the study and dataset related age, breed, sex, neutering status, exercise status, food type, disease category and BCS were obtained from several veterinary clinics by using a standardized questionnaire. Chi-square test was used for comparing subgroups of potential risk factors in terms of prevalence of overweight or obese cats. Univariable analysis was performed to determine associations between being overweight/obese and possible risk factors. A multivariable analysis was performed to determine the most important risk factor among variables investigated in the study. Statistical analysis of dataset showed that BCS of 5 was the most common score (29.17%), followed by score 6 (18.56%). Prevalence of overweight or obese cats (BCS $\geq$ 7) was 18.56% and it was higher in age groups 3 (5-8 years old) (27.50%) and 4 (9-14 years old) (22.73%) than in age group 1 ($\leq$1 years old) (4.65%). It was also higher in SA and SNA cats than cats whose exercise was not recommended ($P<0.05$). There was a tendency towards the association of sex ($P=0.055$) and neutering status ($P=0.068$) with being overweight or obese. Male cats were 1.95 times more likely to be overweight and obese than female ones. Neutered cats were also more likely to be overweight and obese than intact cats. Breed differences, food type and disease category had no significant effect on being overweight or obese.

Keywords: Overweight, obesity, cat, prevalence, risk factors

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VETEXPO-2019 homepage: http://vetexpo.org/

Introduction

Obesity is the formation of excessive adipose tissue with positive energy balance, and is the most common multifactorial nutritional disorder of pet cats (Michel and Scherk, 2012; Linder and Mueller 2014). Because of its prevalence and its detractive effects on quality of life and longevity by predisposing animals to several diseases and conditions, obesity is a significant problem (Lund et al., 2005; Scarlett et al., 1994; German et al., 2010). The incidence of obesity in cats and dogs has increased dramatically and it has become a serious concern in veterinary medicine (German, 2006). Older reports suggested that 6-12% of cats were overweight while recently published studies reported a prevalence of 19-29% and 6-8% of overweight or obese cats, respectively. In the United States, it is estimated that 53% of cats are overweight or obese (Lund et al., 2005; German et al., 2010). Many risk factors are recognized for feline obesity and the factors with significant roles in the development of obesity are inactivity, middle age, sex, neutering, age at neutering and breed (Scarlett et al., 1994; Russell et al., 2000). Of these risk factors common to all studies, age, sex and neutered status are identified consistent three risk factors and neutering was the most strongly associated factor with obesity (Cave et al., 2012). Furthermore, number of cats in a house, presence of a dog, inactivity, middle age, being mixed-bred, food type, feeding treats, ad libitum feeding and being unawareness of body weight or body condition were also accepted as risk factors in some studies (Lund et al, 2005; Robertson, 1999; Allan et al., 2000; Russell et al., 2000). In companion animals, individuals are generally accepted as obese if more than 20% heavier than ideal body weight and overweight if 10% to 20% greater than optimal body weight (Burkholder and Toll, 2000; Zoran, 2009; Laflamme, 2012; Linder and Mueller 2014). Rather than classification of obesity based on body weight, the Body Condition Score (BCS) is the most widely accepted method of assessing overweight and obesity and has been validated in domestic cats (German et al., 2006; Bjornvad et al., 2011). The most commonly used system for BCS are the 5-point scale (Allan et al., 2000; Lund et al., 2005; Courcier et al., 2010; Courcier et al., 2012) and 9-point scale (Cave et al., 2012; Corbee 2014; Laflamme, 1997).

In Turkey, there are many studies on the prevalence and risk factors for overweight and obesity in human medicine, but studies on cats in veterinary medicine are quite rare. Though many veterinarians agree that the prevalence of overweight and obesity in cats is increasing, there is no enough data regarding this health problem in Turkey. Therefore, the aim of this survey study was to evaluate the relationship between potential risk factors and overweight or obesity in cats.

Materials and Methods

Data collection

A total of 264 cats were evaluated in this study. All data were collected from cats visited several participating clinics by using questionnaires completed by veterinarians in Istanbul-Turkey. Data regarding BCS (9-point scale), age, breed, sex, neutering status, exercise status, food type, disease category was considered for each cat.

Statistical analysis

All statistical analyses were performed using SPSS 25.0 for Windows programme (IBM Corp, Armonk, NY, USA). Age group, breed group, sex, neutering status of cat, exercise status, food type and disease category were evaluated as potential risk factors for being overweight or obese (BCS $\geq$ 7). The number and percentages of cats in different BCSs were calculated for the subgroups of each potential risk factor to characterize demographic variables. Chi-square test was used for comparing subgroups of potential risk factors in terms of prevalence of overweight or obese cats.

Univariable logistic regression analysis was performed to determine associations between being overweight / obese and possible risk factors. In the hypothesis of this analysis, risk factors that cause overweight or obesity in cats were assumed to be different from the factors that cause underweight. Therefore, data of

cats with a BCS 1 and 2 (n=21) were deleted from dataset in logistic regression analysis. The dependent variable in logistic regression analysis was BCS category. BCS values of 3-6 were assumed as normal weight category, while BCS values that equal or greater than 7 were considered overweight or obese category.

A multivariable logistic regression analysis was performed to determine the most important risk factor among variables investigated in the study. Explanatory variables which yielded a Wald test P value <0.10 in the univariable logistic regression test were included in the multivariable test (Rowe et al., 2015). The two-way interactions of explanatory variables were also assessed in the multivariable analysis. Stepwise logistic regression procedure was applied. Backward-selection based on likelihood ratio statistics was used for variable selection. The criteria of $P<0.05$ and $P>0.1$ were chosen in stepwise procedure for entry and removal of variables, respectively.

Results

Descriptive statistics

Table 1 shows the number and percentages of cats in different body condition scores. A total of 264 cats were evaluated in the study. The most frequently seen cat breed was Tekir (n=189; 71.59%). There were more male cats (58.71%) than female ones (41.29%). The majority of the cats were neutered (79.55%) and only 20.45% of cats was intact. Of the 264 cats, 78.79% were fed with dry diet. BCS of 5 was the most common score (29.17%), followed by score 6 (18.56%). Spearman correlation between weights of cats and body condition scores (1-9 scale) was 0.837 ($P<0.001$).

Prevalence of overweight or obese

Prevalence of overweight or obese cats (BCS ≥ 7) was 18.56% (Table 2). Age group had a significant influence on being overweight or obese ($\chi2=10.854$; $P=0.013$). Prevalence of overweight or obese cats was higher in age groups 3 (27.50%) and 4 (22.73%) than in age group 1 (4.65%). Differences among breed groups in terms of prevalence of overweight or obese cats were not significant ($\chi2=0.245$; $P=0.993$). Male cats had higher prevalence of overweight or obesity compared with female ones ($\chi2=4.014$; $P=0.045$). Neutered cats had higher prevalence of overweight or obesity than intact cats ($\chi2=3.885$; $P=0.049$). Exercise status had also a significant effect on being overweight or obese ($\chi2=7.798$; $P=0.005$). The prevalence of overweight and obese cats was higher in SA and SNA cats than that of cats whose exercise was not recommended ($P<0.05$). Neither food type ($\chi2=0.291$; $P=0.589$) nor health status ($\chi2=7.947$; $P=0.242$) influenced the prevalence of overweight or obese cats.

Univariable analysis

According the univariable analysis, age group ($P=0.015$) and exercise status ($P=0.033$) were determined to be associated with overweight or obesity. Age groups 3 and 4 showed an increased risk of overweight and obesity. SNA cats had an increased risk of overweight and obesity compared with SA cats, while a decreased risk was observed in NS cats. There was a tendency towards the association of sex ($P=0.055$) and neutering status ($P=0.068$) with being overweight or obese. Male cats were 1.95 times more likely to be overweight and obese than female ones. Neutered cats were also more likely to be overweight and obese than intact cats. On the other hand, no association was observed between food type or disease category and being overweight or obese.

Multivariable analysis

According the results of stepwise logistic regression based on backward-selection procedure, only two risk factors were included in the final multivariable regression model: exercise status and sex of cat. SNA cats were 3.163 times more likely to be overweight and obese than SA cats. NS cats had lower odds of being overweight and obese than SA cats. Male cats tended to have more risk to be overweight and obese than female ones. Age group, breed group, neutering status, food type, disease category and sex × neutering status interaction were not a significant predictor in the multivariate model.

Discussion

In this study, the most common BCS was 5 (29.17%). Of cats evaluated in this study, 73.49% were normal weight and 18.56% were overweight or obese. The prevalence of overweight or obese cats were 18.56%. In the present study, four risk factors, age, sex, neutering status, exercise status, were significant on being overweight or obese. In several studies, the results have indicated that obesity is more common in middle-aged (5 to 11 years old) cats due to reductions in metabolism and physical activity depending on age (Kronfeld et al., 1994; Scarlett et al., 1994; Robertson, 1999; Lund et al., 2005; Kienzle and Bergler, 2006; McGreevy et al., 2008; Courcier et al., 2012). Also, it was reported that below 1year old was a lower risk factor and adult age (2-9 years old) was a positive risk factor for feline obesity (Colliard et al., 2009). In this study, statistical analysis showed that age group (Group 1: ≤1, Group 2: 2-4, Group 3 5-8, and Group 4: 9-14 years old) had a significant influence on being overweight or obese ($\chi 2$=10.854; P=0.013). Parallelly to prior studies, prevalence of overweight or obese cats was higher in age groups 3 (27.50%) and 4 (22.73%) than in age group 1 (4.65%).

In this study, sex was a significant factor in the terms of being overweight or obesity. According to the results, male cats had higher prevalence of overweight or obesity compared with female ones, similar to what has previously been shown (Lund et al., 2005; Courcier et al., 2012; Colliard et al., 2009; Öhlund et al, 2018). In the present study, multivariable analysis shown that male cats tended to have more risk to be overweight and obese than female cats, and univariable analysis shown that male cats were 1.95 times more likely to be overweight and obese than female ones. This result was agree with Teng et al. (2017) who reported that sex was significant (P=0.01) in the univariable model with 1.24 (95% CI: 1.08-1.43) times the odds of overweight in male cats, compared to female cats. The tendency toward overweight or obesity in male cats might be due to the maintenance energy requirement per kg BW in female cats is higher than males (Bermingham et al., 2010), therefore, males might consume excess energy in a feeding programme without considering sex.

In the present study, neutering was a significant risk factor for overweight and obesity in both sexes. Neutered cats had higher prevalence of overweight or obesity than intact cats. While most of the studies reported that neutering increased the probability of overweight or obesity in cats (Cave et al., 2012; Courcier et al., 2010; Colliard et l., 2009; McGreevy et al., 2008; Hoenig and Ferguson, 2002), some of the other studies shown that neuter status was not significant (Kienzle and Berglert, 2006; Rowe et al., 2015). When compared to intact cats, the higher prevalence of overweight or obesity in neutered cats in this study can be the result of an increase in daily food intake and a decrease in metabolic rate and energy expenditure as suggested by several studies (Mitsuhashi et al., 2011; Bermingham et al., 2010; Fettman et al., 1998; Flynn et al., 1996; Root et al., 1996).

The other significant risk factor for overweight and obesity in this study was exercise status. Among sub groups of exercise status (SA: Exercise was suggested by veterinarian and applied by owner; SNA: Exercise was suggested by veterinarian but it was not applied by owner; NS: Exercise was not suggested by veterinarian), the prevalence of overweight and obese cats was higher in SA and SNA cats than that of NS cats. According to the result of univariable and multivariable analysis in this study, SNA cats had an increased risk of overweight and obesity compared with SA cats, and SNA cats were 3.163 times more likely to be overweight and obese than SA cats, while a decreased risk was observed in NS cats. The suggestion of exercise (regardless of whether it was applied or not) by veterinarian can be considered as an indicator for prevalence of overweight and obesity in pet cats. In previous studies, inactivity has been shown as a risk factor for overweight and obesity in cats (Sloth, 1992; Scarlett et al., 1994; Fettman et al., 1998; Robertson ,1999; Allan et al., 2000) and these reports supported the increase in the risk of overweight and obesity in SNA cats in the present study. However, there were also some studies reported no associations between activity and obesity (Courcier et al., 2010; Russell et al., 2000; Scarlett et al., 1994; Cave et al., 2012).

Statistical analysis of dataset in this study showed that breed, food type and disease category were not significant risk factor for being overweight and obesity. The major proportion cat breed was Tekir, a domestic breed in Turkey, in this study and the other breeds (mixed-breeds and purebred) was minor. The no significant effect of breed differences in this study was in accordance with some previous studies (Colliard et al., 2009; Courcier et al., 2010; Courcier et al., 2012; Rowe et al., 2015) but was in disagreement with other

studies that found significant difference (Robertson, 1999; Lund et al., 2005; McGreevy et al., 2008; Teng et al., 2017). This disagreement might be due to the minor populations of some breeds in this study, therefore, the study was not able to detect individual breed effects, possibly due to lack of statistical power. With the terms of disease category, in a newest study conducted by Kocabağlı et al. (2017), it was reported that overweight-obese cats were more likely to be diagnosed with osteoarthritis, hepatic lipidosis, gastrointestinal disease and neoplasia, also, overweight cats were at increased risk for urinary diseases, however, there was no any relationship between obesity and urinary diseases. In our study, disease categories (such as respiratory, urinary, digestive, inflectional, skin and other diseases) were not significant risk factor for being overweight and obesity. In this study, 78.79% of 264 cats were fed with dry diet. The prevalence of overweight and obese cats was not influenced by food type. Also, no association was observed between food type and being overweight or obese in univariate and multivariate model. In contrast to this result, some recent studies showed feeding a dry food to be risk factor for overweight (Rowe et al., 2015; Rowe et al., 2017; Öhlund et al., 2018). Because of the limitations of the study, the amount of food given, the frequency of feeding and the composition of the diets were not assessed in this study. A comprehensive study containing these parameters might present a detailed approach on the risk factors for being overweight and obese. The prevalence of overweight or obese cats was not influenced by health status of cats in this study and no association was observed between disease category and being overweight or obese. Although some studies reported that overweight and obesity increased risk of diseases such as lower urinary tract disease, dermatoses, non-allergic skin conditions, lameness, diabetes mellitus, orthopedic, disease and certain types of cancer (Scarlett and Donoghue, 1998; Lund et al., 2005; German, 2006), a relationship between overweight-obesity and disease categories was not found in this study because there were fewer overweight or obese cats and effects of grouping many disease into one category.

Table 1. Number (n) and percentages (%) of cats in different body condition scores (BCS) according to the risk factors investigated in the study.

Risk Factors		Body Conditic				
		1	2	3	4	5
	n	n (%)	n (%)	n (%)	n (%)	n (%)
Age group						
1	43	0 (0.00)	3 (6.89)	6 (13.95)	6 (13.95)	24 (55.81)
2	97	1 (1.03)	3 (3.09)	14 (14.43)	11 (11.34)	35 (36.08)
3	80	0 (0.00)	6 (7.50)	9 (11.25)	9 (11.25)	13 (16.25)
4	44	3 (6.82)	5(11.36)	6 (13.64)	7 (15.91)	5 (11.36)
Breed group						
British-Scotish	26	0 (0.00)	0 (0.00)	3 (11.54)	4 (15.38)	10 (38.46)
Tekir	189	3 (1.59)	12 (6.35)	24 (12.70)	23 (12.17)	52 (27.51)
Persian-Chincilla	27	1 (3.70)	3 (11.11)	6 (22.22)	2 (7.41)	7 (25.93)
Van-Angora	12	0 (0.00)	2 (16.67)	1 (8.33)	1 (8.33)	4 (33.33)
Others	10	0 (0.00)	0 (0.00)	1 (10.00)	3 (30.00)	4 (40.00)
Sex						
Female	109	2 (1.83)	8 (7.34)	15 (13.76)	16 (14.68)	36 (33.03)
Male	155	2 (1.29)	9 (5.81)	20 (12.90)	17 (10.97)	41 (26.45)
Neutering status						
Neutered	210	3 (1.43)	12 (5.71)	24 (11.43)	28 (13.33)	56 (26.67)
Intact	54	1 (1.85)	5 (9.26)	11 (20.37)	5 (9.26)	21 (38.89)
Exercise status*						
SA	57	0 (0.00)	1 (1.75)	1 (1.75)	7 (12.28)	21 (36.84)
SNA	94	0 (0.00)	1 (1.06)	2 (2.13)	5 (5.32)	21 (22.34)
NS	113	4 (3.54)	15 (13.27)	32 (28.32)	21 (18.58)	35 (30.97)
Food type						
Dry diet	208	2 (0.96)	11 (5.29)	25 (12.02)	25 (12.02)	62 (29.81)
Others	56	2 (3.57)	6 (10.71)	10 (17.86)	8 (14.29)	15 (26.79)
Disease Category						
Healthy	133	2 (1.50)	4 (3.01)	12 (9.02)	13 (9.77)	43 (32.33)
Respiratory Sys.	11	0 (0.00)	0 (0.00)	2 (18.18)	4 (36.36)	4 (36.36)
Urinary Sys.	29	2 (6.90)	4(13.79)	6 (20.69)	5 (17.24)	4 (13.79)
Digestive Sys.	24	0 (0.00)	0 (0.00)	3 (12.50)	2 (8.33)	9 (37.50)
Infections	29	0 (0.00)	3 (10.34)	9 (31.03)	3 (10.34)	8 (27.59)
Skin	24	0 (0.00)	1 (4.17)	2 (8.33)	4 (16.67)	8 (33.33)
Others	14	0 (0.00)	5 (35.71)	1 (7.14)	2 (14.29)	1 (7.14)
TOTAL	**264**	**4 (1.52)**	**17 (6.44)**	**35 (13.26)**	**33 (12.50)**	**77 (29.17)**

*Exercise status sub groups: SA: Exercise was suggested by veterinarian and applied by owner; SNA: Exercise was suggested by veterinarian but it was not applied by owner; NS: Exercise was not suggested by veterinarian

Table 2. Prevalence of overweight or obese (BCS ≥ 7) cats by the risk factors investigated in the study.

Risk Factors		Number of cats	Number of overweight or obese cats	Prevalence of overweight or obese cats (%)	Chi-Square	*P*-v
Age group					10.854	0.0
	1	43	2	4.65[b]		
	2	97	15	15.46[ab]		
	3	80	22	27.50[a]		
	4	44	10	22.73[a]		
Breed group					0.245	0.9
	British-Scotish	26	4	15.38		
	Tekir	189	36	19.05		
	Persian-Chincilla	27	5	18.52		
	Van-Angora	12	2	16.67		
	Others	10	2	20.00		
Sex					4.014	0.0
	Female	109	14	12.84[b]		
	Male	155	35	22.58[a]		
Neutering status					3.885	0.0
	Neutered	210	44	20.95[a]		
	Intact	54	5	9.26[b]		
Exercise status*					7.798	0.0
	SA	57	11	19.30[a]		
	SNA	94	28	29.79[a]		
	NS	113	0	0.00[b]		
Food type					0.291	0.5
	Dry diet	208	40	19.23		
	Others	56	9	16.07		
Disease Category					7.947	0.2
	Healthy	133	33	24.81		
	Respiratory Sys.	11	1	9.09		
	Urinary Sys.	29	4	13.79		
	Digestive Sys.	24	3	12.50		
	Infections	29	2	6.90		
	Skin	24	4	16.67		
	Others	14	2	14.29		
TOTAL		**264**	**49**	**18.56**		

*Exercise status sub groups: SA: Exercise was suggested by veterinarian and applied by owner; SNA: Exercise was suggested by veterinarian but it was not applied by owner; NS: Exercise was not suggested by veterinarian
[a,b]: Percentages in the columns with different letters differ at $P < 0.05$

Table 3. Results of univariable logistic regression analysis for risk factors of overweight or obesity in cats.

Risk Factors		*B*	S.E.	OR	OR (95% C.I.)	*P*-value
Age group						
	1	-	-	1 (ref)	-	-
	2	1.296	0.778	3.654	0.795-16.798	0.096
	3	2.084	0.769	8.038	1.782-36.270	0.007
	4	1.989	0.815	7.308	1.478-36.124	0.015
Breed group						
	British-Scotish	-	-	1 (ref)	-	-
	Tekir	0.361	0.575	1.435	0.465-4.427	0.530
	Persian-Chincilla	0.424	0.742	1.528	0.357-6.545	0.568
	Van-Angora	0.318	0.959	1.375	0.210-9.015	0.740
	Others	0.318	0.959	1.375	0.210-9.015	0.740
Sex						
	Female	-	-	1 (ref)	-	-
	Male	0.668	0.348	1.950	0.986-3.854	0.055
Neutering status						
	Neutered	-	-	1 (ref)	-	-
	Intact	-0.919	0.503	0.399	0.149-1.069	0.068
Exercise status*						
	SA	-	-	1 (ref)	-	-
	SNA	1.039	0.397	2.826	1.298-6.154	0.009
	NS	-19.794	4145.588	0.000	n=0	0.996
Food Type						
	Dry diet	-	-	1 (ref)	-	-
	Others	-0.112	0.410	0.894	0.400-1.998	0.785
Disease Category						
	Healthy	-	-	1 (ref)	-	-
	Respiratory Sys.	-1.256	1.068	0.285	0.035-2.311	0.240
	Urinary Sys.	-0.511	0.586	0.600	0.190-1.892	0.383
	Digestive Sys.	-0.899	0.650	0.407	0.114-1.453	0.166
	Infections	-1.438	0.763	0.237	0.053-1.060	0.060
	Skin	-0.511	0.586	0.600	0.190-1.892	0.383
	Others	-0.206	0.827	0.814	0.161-4.115	0.803

B: Regression coefficient; OR: Odds ratio; C.I: Confidence interval; ref: Reference level
*Exercise status sub groups: SA: Exercise was suggested by veterinarian and applied by owner; SNA: Exercise was suggested by veterinarian but it was not applied by owner; NS: Exercise was not suggested by veterinarian

Table 4. Results of multivariable logistic regression analysis for risk factors of overweight or obesity in cats

Risk Factors		*B*	S.E.	OR	OR (95% C.I.)	*P*-value
Exercise status*						
	SA	-	-	1 (ref)	-	-
	SNA	1.151	0.399	3.163	1.446-6.918	0.004
	NS	-19.763	4116.463	0.000	n=0	0.996
Sex						
	Female	-	-	1 (ref)	-	-
	Male	0.653	0.385	1.922	0.904-4.086	0.090

B: Regression coefficient; OR: Odds ratio; C.I: Confidence interval; ref: Reference level
*Exercise status sub groups: SA: Exercise was suggested by veterinarian and applied by owner; SNA: Exercise was suggested by veterinarian but it was not applied by owner; NS: Exercise was not suggested by veterinarian

Conclusions

In this study, the most common BCS was 5 (29.17%). Within a population of cats visiting veterinary clinics, the prevalence of overweight or obese cats were 18.56%. Age, sex, neutering status and exercise status were significant on being overweight or obese, similar to other reports. However, no association was observed between food type or disease category and being overweight or obese. Also, differences among breed groups in terms of prevalence of overweight or obese cats were not significant. Further studies needs to be undertaken to expose the associations between the risk factors and overweight or obesity with large scale cat population. Obtaining data and evaluating the results from comprehensive researches on predisposing and risk factors in overweight and obesity is important and will be benefit to develop a strategy to avoid this common health problem in pets.

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

The evaluation of feeding methods applied by beef and dairy cattle enterprises in Istanbul

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Abstract

In this study, enterprise structure, feedstuffs used in animal feeding, percentage of these feedstuffs, nutrition habits of animal in beef cattle and dairy cattle enterprises in Istanbul were determined. The research material in this study consisted of dataset obtained from 76 cattle enterprise managers by using questionnaire in Istanbul. The production type in 58, 22 and 4 of these enterprises were combined, dairy cattle and beef cattle , respectively. The percentage of breeds were 76.3% (58 enterprises) culture-bred, 18,4% (14 enterprises) mixed-bred and 6.6% (5 enterprises) and 6.6% (5 enterprises) domestic bred. Applied fattening methods were 40,8% (22 enterprise) open-, 37.0% (20 enterprise) half-open-, 22.2% (12 enterprise) closed- fattening method. In this study, the major part of these enterprises (88.2%) have been producing own feedstuffs. The percentage of feedstuff production in these enterprises were 41.8% (28 enterprise) alfalfa, 43.3% (29 enterprise) wheat, 58.2% (39 enterprise) barley, 38.8% (26 enterprise) oat, 34.3% (23 enterprise) vetch, 79.1% (53 enterprise) maize for silage. Silage has been made by themselves in 62 enterprises (81.6%), but it has been purchased in 14 enterprises (18.4%). It was determined that roughage: concentrate rate was substandard in 40.8% of fattening enterprises. Special feeding program has been applied by all of the enterprises, however, it was observed that reproduction, fertility and calf health were still the most important problem because of inadequate nutrition of calves from birth to weaning period.

Keywords: Istanbul, enterprise, feedstuffs, inadequate nutrition

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VETEXPO-2019 homepage: http://vetexpo.org/
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Introduction

In Turkey, dairy farming is the most important industry for country economics and for healthy and sufficeint nutrition of people. There are 14.2 million cattle in Turkey (Anonymous 2015). In animal nutrition the most important factor is feed and feding methods. 60-70 % of cost of animal production is feed (Anonymous 2011, Anonymous 2015). Therefor, feeding of animals with proper feed stuffs and ration is very important.

The use of quality and cheap roughage and balanced ration are the factors for the increase in animal production. However the most important problem in animal production in Turkey is the insufficience in roughage. Although the recurement of roughage is 57 million tonne in our country, only 33 million tonne of this requerement can be supported (Anonymous 2015, Yolcu and Tan 2008).

Thirty percent of total meat production is consistet of beef cattle meat in the world, but this rate is in our country almost 90 % (Anonymous 2015). However, this rate will not change in the near future. Therefor, solutions should be devoloped for efficient and economics cattle production.

In addition to animal nutrition faulds, the animal number per farms are also very low. The animal number is lower than 20 for 97 % of enterprice. In the terms of animal number, most of enterprises in Turkey are small family farms. Therefor economical animal production in Turkey very diffucult because of the high cost of feeds, the difficultys in control mechanisms, price fluctuation in the cost of milk and meat production (Iptas et all. 1997).

Recently, although there were some servey studies in Turkey (Akman and Yalçınkaya, 2015; Aydın ve Sarıkaya, 2012; Bakır ve Demirel, 2001; Budağ ve Keçeci, 2013; Güngör ve ark., 2008; Soyak ve ark., 2007; Sürmen ve ark., 2008; Tugay ve Bakır, 2009), there were no any servey study in Istanbul province. In this study the data reqarding feding and nutrition methods were optained from 76 cattle farms (beef and dairy) by using quastionaire in Istanbul province and this data were evaluated.

Materials and Methods

Data of the study were collected by using quastionaire between April and September 2016 in Istanbul province at 76 dairy and beef cattle farms. Quastionaires were consisted of 44 quastion. With this quastionaire, data related to animal number, capacity of farm, production, feed stuffs and rations were collected. No statistical analyses were used on optained dataset and results were presented as numarical.

Results

According to the results of the survey conducted in 76 establishments in Istanbul and its environs, 50 (65.8%) of the enterprises operate meat and milk, 22 (28.9%) milk and 4 (5.26%) meat. 44 (57.9%) of the enterprises were large enterprises (enterprises with number of animals 50 and above), 22 (28.9%) were medium enterprises and 10 (13.2%) were small enterprises (number of animals) 20 and less)

Breeds of animals in farms were 76.3% (58 enterprises) of culture breed, 18.4% (14 enterprises) of mixed breeds and 6.6% (5 enterprises) of domestic breeds. Extensive fattening method was the most preferred method with 42.1% (22 enterprises) in 54 enterprises. In fattening enterprises, extensive method is applied in 40.8% (22 enterprises), semi- extensive method is 37.0% (20 enterprises) and intensive method is 22.2% (12 enterprises).

Roughage: concentrate ratios of the rations are varied in 54 dairy farms. In 24 enterprises (44.4%) 30% roughage / 70% concentrate feed rates, in 22 enterprises (40.8%) 40% / 60%, in 8 enterprises (14.8%) 25%: 75% it is used. The roughage / concentrate ratios of rations in the 72 farms where dairy farms are operated also differ on farm basis. It is 60%: 40% in 44 enterprises (61.1%), 50%: 50% in 25 enterprises (34.7%) and 40%: 60% in 3 farms (4.2%). As a feding method, roughage and concentrate feed are given seperately in 45 enterprises (59.2%) and together in 31 enterprises (40.8%).

The most important issue in livestock enterprises is fertility and calf health. The first insemination age in the farms; 1.3% of them inseminate heifers when they are 12 months old, 13.9% are 14 months old, 33.3% are 15 months old, 13.9% are 16 months old, 27.7% are 18 months old and 6.9% are 20 months old. The calving interval also varies between enterprises. According to the farm averages, calving intervals of animals in 2 enterprises (2.7%) was 11 months, in 25 enterprises 12 months (34.7%), in 16 enterprises was 13 months (22.2%), in 9 enterprises was 14 months (12.5%), in 14 enterprises was 15 months (19.4%), in 4 enterprises was 16 months (5.6%) and in 2 enterprises was 18 months (2.7%). All establishments implement a special feeding program for pregnant animals.

While 50 (69.4%) of the calving enterprises experienced fertility problems, 22 (30.6%) enterprises did not experience fertility problems during the study period. The prevalence of foot problems, which are

closely related to nutrition and fertility, are; 51.4%.

Live body weights of calves born in farms vary between 25 kg and 50 kg. Live body weight of calves born in 84.7% of farms is in the range of 35-50 kg. The body weight of the calf less than 35 kg was observed in 15.3% of enterprises. After the birth, 48 (66.7%) kept calves in special compartments, 23 (31.9%) kept together with other calves and 1 (1.4%) kept with their mother. Colostrum was given in the first 3 hours in 91.7% of the enterprises with a calf bottle and by suckling its mother in 8.3% of the enterprises. The age of weaning of calves varies between farms. The age of weaning of calves was 2 months (41.7%) for 30 enterprises, 3 months (54.2%) for 39 enterprises and 4 months (4.1%) for 3 enterprises. The first roughage supplementations in enterprises of 5.6%, 22.2%, 4.2%, 1.4%, 11.1% and 4.2% were in first month, second month, third month, sixth month, second week and third week, respectively. The age of first calf feeding after calves was also different among the farms. The first concentrate feding in enterprises of 13.9%, 2.8%, 5.6%, 5.6%, 52.8%, 13.9%, 5.6% were in first month, second month, fourth month, second week, third week and first week of age, resprctively. The mortality rates of calves also vary widely between farms. In 10, 8, 6, 4, 9, 12 and 2 of the enterprises, the mortality rates were 1%, 2%, 3%, 4%, 5%, 10% and 20%, respectively. However, in 21 enterprises, there were no any mortality. One of the questions asked to the enterprises was the incidence of calf septicemia in the last year. Calf septicemia was observed in 55.5% (40) of the enterprises, whereas septicemia was not observed in 44.5% (32).

Daily milk yields in dairy farms vary between 20 and 30 liters. Enterprises received veterinary services from private veterinary clinics were 85.5% (65 enterprises), and received from provincial and district directorates of agriculture were 14.5% (11 enterprises). Metabolic diseases (milk fever, acidosis, ketosis) were seen in the last one year in 9% (44 enterprises). There were no any metabolic diseases in 42.1% (32 enterprises) of the enterprises.

All enterprises recorded their data and parameters such as calf birth times, calf live body weights, calf and animal mortality rates, milk and meat yields were recorded by the staffs.

In our study, we wanted to learn general thoughts about animal husbandry by asking an open-ended question besides the related and independent questions in order to determine the situation in the enterprises. The companies that answer these questions were happy with the questionnaire, but they suggest that academicians working in the departments of animal husbandry of universities to be more interested in the field, to see the problems of animal husbandry and to produce solutions together with the enterprises.

Discussion

In this study conducted in Istanbul, 75.0% of the 76 enterprises surveyed use culture breed, 18.4% use hybrid breeds and 6.6% use domestic breeds. According to the data TSI (Turkey Statistical Institute, Animal Production Database 2015), 82 909 head of cattle are present in Istanbul, of these animals, 36762 are the culture breed, 27 783 are crossbreed and 6614 are native breeds (2015). In terms of the proportion of culture and hybrid breeds in the presence of cattle population inTurkey, the major differences are observed among regions. The regions with the lowest proportion of native genotypes are Marmara and Aegean regions, which are considered as the most developed regions. According to TSI data, only 6.3% of the cattle in Istanbul is consisted of domestic breeds. These results were agree with the values obtained in our survey.

According to the findings of the research, 65.8% of the livestock enterprises in Istanbul are meat and milk enterprises, 28.9% are only dairy enterprises and 5.26% are only meat enterprises only. According to 2014 TSI data, the majority of the products (%80) obtained from milk are used as the majority (80%) as milk and cream. According to the distribution of raw milk in our country, 54% is delivered to modern enterprises and dairy farms, 35% is used on the farm (calf feeding) and 11% is consumed as street milk (TSI, Animal Production Database 2014). In Turkey, the enterprises having less than 20 cattles is 83.6% level. The rate of enterprises having 20-49 cattles is 15.1% and the enterprises having 50 or more animals is very low (1.4%) (Benli 2007). In the province of Istanbul, these rates were 13.2%, 28.9% and 57.9%, respectively in the present study. This results were different from the general situation in Turkey do to the establishment of the big cattle enterprises in Marmara region since 1980 (GAP report, Dec. 2014).

In this study, most of the enterprises (88.2%) produce forage plants themselves. 28 of them (41.8%) were alfalfa, 29 of them were wheat (43.3%), 39 of them were barley (58.2%), 26 of them were oat (38.8%), 23 of them were vetch (34.3%) and 53 (79.1%) planted silage maize. Silage, which is used extensively in dairy cattle nutrition, is made by themselves in 62 (81.6%) of the farms and is supplied externally in 14 (18.4%) of them. In a survey conducted in the province of Tekirdağ, 70% of enterprise owners stated that they produced plant and 30% supplies externally. While 57% of business owners grow alfalfa and vetch as forage crops, 43% do not produce forage crops. 52% of the enterprises produce their own roughage, 48% of the enterprises purchased. While 75% of the enterprises make the silage themselves, 25% purchased. (Soyak A., M.I. Soysal, Gurcan, E.K., 2007). The production of feed staffs and roughages used in animal nutrition by enterprises is important for an economical and efficient livestock. While 52.6% (40 enterprise) of the surveyed enterprises met their roughage needs by their own production, 26.3% (20 enterprises) supplied commercially and 21.1% (16 enterprises) purchased. While 17 (22.4%) of the enterprises met their need for concentrate feed by their own production, 16 (21.1%) purchased commercially. 43 (56.6%) enterprises both use their own facilities and buy from outside. According to the study by Soyak et al., 65% of the enterprises met the concentrate feed by purchasing, 23% from the cooperator and 12% from their own facilities. In another survey study, 79.41% of the enterprises received concentrate feed requirement from feed factories, 17.4% used feed produced by them and 2.94% purchased feed stuffs from outside and prepared their rations (Akman B., Yalçınkaya. İ., 2015).

The enterprises used different forages in their rations. 88.2% straw, 80.3% corn silage, 63.2% clover hay, 59.2% meadow hay, 22.4% beet pulp, 21.1% vetch dry grass, 17.1% use sainfoin and 3.9% triticale forage. In a survey conducted in the province of Van, the rate of using alfalfa from roughage in animal husbandry enterprises was found to be 66%, 35% of sainfoin and 45% of meadow hay (Budağ C., Keçeci Ş., 2013). According to the study by Togay et al. in the province of Giresun, the use of roughage in rations were detarminated as meadow grass 94.9%, alfalfa 30.8%, sainfoin 3.5%, corn silage 1.3%, straw 75.9%, vetch hay grass 30%. In another survey conducted in Van province, it was found that the roughage used in cattle farms were hay, alfalfa, sainfoin and meadow hay (Şahin et al. 2008). Considering the differences between the regions, it was determined that the use of corn silage was high in Istanbul, but the varieties and uses of other forages were similar. 52% of the enterprises produced their own roughage, 48% enterprises purchased and 75% of the enterprises make their own silage.

Roughage / concentrates were varied among 54 enterprises. Roughage / concentrates rates were 30% / 70% in 24 enterprises (44.4%), 40%-60% in 22 enterprises (40.8%), 25%-75% in 8 enterprises (14.8%). In a study conducted in Van province, roughage / concentrate feed rates were %40 / %60 (66% of enterprises), %30 / %70 (%20 of enterprises) and %20 /%80 (%14 of enterprises) (Budağ C., Keçeci Ş., 2013). Also, in Bayburt this rate were determined 57% /43% (Özkan and Erkuş 2003). The rate of concentration feed in a ration is the most important criteria that effects the profitability and output in fattening (Koknaroğlu et al. 2005).

In the present study the roughage / concentrate feed ratios were also vary among enterprises: 60% / 40% in 44 enterprises (61.1%), 50% / 50% in 25 enterprises (34.7%), 40% / 60% in 3 farms (4.2%). Feeding methods in these enterprises were roughage and concentrate feding separetely in 59.2% (45 enterprises), roughage + concentrate feedmix in 40.8% (31 enterprises). Average daily milk production in these enterprices were ranged 20-30 liters. Average daily milk productions were 20 litres for 13.9% (10 enterprices), 25 liters for 63.9% (46 enterprices), 30 liters for 13.9% (10 enterprices) and over 30 litres for 8.3% (6 enterprices) of the enterprices. Roughhage / concentrate feed ratio was 60% / 40% in enterprises with daily milk yield of 20-25 liters. It was found that the ration used in the farms in this group, where the milk yield was not very high, had higher forage ratio. The higher the milk yield, the lower the roughage / concentrate feed ratio.

Conclusion

In conclusion, it was found that large enterprises were more conscious about herd management and feeding, followed current developments in calf feeding. However, there were problems in calf health in small enterprises

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Oral presentation

Efficacy and toxicity of neoadjuvant doxorubicin and cyclophosphamide in dogs with locally advanced mammary tumors: Preliminary results

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Abstract

The aim of this study was to investigate the effect and toxicity of doxorubicin cyclophosphamide combination in neoadjuvant use in dogs with locally advanced mammary tumors. In this study, doxorubicin and cyclophosphamide combination was applied as neoadjuvant chemotherapy to dogs with 8 locally advanced mammary tumors of various breeds aged 8-14 years. A tru-cut biopsy from the mammary tumor and fine needle aspiration biopsy from the relevant lymph node were obtained from all dogs before neoadjuvant chemotherapy. The samples were sent to the pathology laboratory for histopathological examination. Pathology results of the dogs; adenocarcinoma (n: 5), tubulo-papillary carcinoma (n: 2) and malignant mix tumor (n: 1). Neoadjuvant chemotherapy was determined as doxorubicin 25-30mg / m2 and cyclophosphamide 100mg / m2 as i.v slow injection and 4 administrations with 3 week intervals. Before each chemotherapy, the dogs was followed up with blood examination and detailed clinical examination. Toxicity and efficacy of this treatment were determined by clinical examination, laboratory tests and measurement of tumor diameter. Although no side effects were observed during treatment as toxicity, clinical findings such as fever, vomiting, anorexia, lethargy, weight loss, alopecia, enteritis, skin ulceration, and laboratory findings such as neutropenia and decreased hematocrit values were observed after treatments. Based on the longest diameters of tumors before and after neoadjuvant chemotherapy; complete response was detected in 2 dogs (25%), partial response in 2 dogs (25%) and stable disease in 4 dogs (50%). According to preliminary results, the toxicity of doxurubicin and cyclophosphamide combination in neoadjuvant chemotherapy in dogs with locally advanced mammary tumors is acceptable and are seen to be promising in treatment.

Keywords: Dog, locally advanced mammary tumor, neoadjuvant chemotherapy, doxorubicin, cyclophosphamide

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September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Flow cytometric evaluation of ram semen freezability treated with α-tocopherol

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Abstract

The aim of this study was evaluation of ram semen freezability treated with different rate of α-tocopherol in non-breeding season. In this study, ejaculates were collected from four Merino rams (2-3 ages were used and belonging to the special sheep farm in Bademli, Burdur/Turkey). The ejaculates containing spermatozoa with >80% motility and concentrations higher than 1.5x109 spermatozoa/ml (normozoospermic) were mixed and used in the study. The mixed ejaculates were divided into five equal aliquots and samples were extended with tris base medium (tris, citric acid, glucose) containing 800 µM group, 400 µM group, 200 µM group, 100 µM group or 0 µM group (control) α-tocopherol and they were equilibrated to 4°C for 2 hours, frozen in mini straws then stored in liquid nitrogen. Straws were thawed at 37°C for 30s in water bath for plasma membrane acrosome integrity (PMAI %) and high mitochondrial membrane potential (HMMP %) with flow cytometric analyses. Flow cytometry analyses were performed with a Cytoflex Flow Cytometer (Beckman Coulter, Fullerton, CA, USA). Assessments of semen samples were made with a laser beam at 488 nm (50 mW laser output), with 525 ± 40, and 585 ± 42 and 610 ± 20 nm emission filters. Data were collected from 10.000 events. The highest PMAI (24.39±2.11 %) and HMMP (39.90±3.13 %) were in 100 µM compared to other groups ($p<0.05$). Also, the lowest PMAI and HMMP values were obtained in 800 µM and 400 µM groups respectively ($p<0.05$). In conclusion, 100 µM α-tocopherol should be supplemented to ram semen freezing extender for membrane & acrosome integrity and high mitochondrial membrane potential.

Keywords: α-tocopherol, flow cytometry, ram semen freezing, plasma membrane & acrosome integrity, mitochondrial membrane potential.

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Oral presentation

Investigation of Anti-Neospora caninum Antibodies in Hair Goats in Osmaniye Province

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Abstract

Neospora caninum is a parasitic protozoan that causes loss of abortion, stillbirth and premature breeding in goats as in the case of cattle and adversely affects goat breeding. The aims of this study was to determine the prevalence of anti-N. caninum antibodies in hair goats in Osmaniye province. For this purpose, 154 blood samples were collected from hair goats in 3 counties of Osmaniye. Obtained sera were examined with c-ELISA test. At the end of the study, anti-N. caninum antibodies were detected in 3 out of 154 animals (1.9%) and this result was found to be below the average of Turkey and the world.

Keywords: Neospora caninum, hair goat, c-ELISA, Osmaniye

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VETEXPO-2019 homepage: http://vetexpo.org/
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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Determination of the pharmacokinetics of marbofloxacin in endotoxemic sheep

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Abstract

Endotoxemia causes many pathophysiological changes in the body. These changes may alter the pharmacokinetics of antibacterial agents used in the treatment. Purpose of this research; a) to determine the effect of the pharmacokinetics of marbofloxacin in the healthy sheep, b) to determine the effect of endotoxemia treatment (ET) on the pharmacokinetics of marbofloxacin in the healthy sheep, c) to determine the pharmacokinetics of marbofloxacin in the experimentally induced endotoxemic (LPS, E. coli O55:B5) sheep treated with ET. Seven clinically healthy Merino sheep were used. The study was carried out according to a 3-cycle cross-pharmacokinetic design and a 15-day wash-out period was performed between the stages. In the study, respectively, marbofloxacin (MB) 10 mg/kg (IV), MB + ET (lactated ringer + Dextrose 5% + sodium chloride 0.45% 20 mL/kg, IV, 20 ml/kg/h, dexamethasone 0.5 mg/kg, SC) and LPS (10 µg/kg IV infusion for 30 minutes) followed by MB + ET were administered. In all phases of the study, blood samples were collected before (0 hours, control) and after MB administration at 0.083, 0.167, 0.25, 0.333, 0.417, 0.5, 0.75, 1, 1.5, 2, 3, 4, 6, 8, 10, 12, 18, 24, 36, 48, 72 and 96 h. Plasma MB concentration was measured using high performance liquid chromatography-UV and non-compartmental pharmacokinetic parameters were calculated. When the MB + ET group was compared with the MB group, no difference was found ($P>0.05$) in the basic pharmacokinetic parameters ($t1/2\lambda z$, MRT, $AUC0-\infty$, ClT and Vdss). When the LPS +MB + ET group was compared with the other two groups, it was found that $t1/2\lambda z$ and MRT were prolonged, $AUC0-\infty$ increased and ClT decreased ($P<0.05$). In conclusion, it may be stated that endotoxemia may change pharmacokinetic values of marbofloxacin.

Keywords: Endotoxemia, sheep, marbofloxacin, pharmacokinetics

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Oral presentation

Investigation of K-CN gene polymorphisms on milk productivity by using PCR-RFLP method in Anadolu water buffalo breed

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Abstract

Water buffalo breeding by breeder project is ongoing in Sivas province as well as in many other provinces of Turkey Republic. The aim of this study was to investigate gene polymorphisms on Exon 4 – Intron 5 and only Exon 4 of kappa casein (K-CN) gene for milk productivity in Sivas province. Blood samples were taken from a total of 135 water buffaloes and DNA extractions from taken bloods were conducted by phenol-chloroform method. DNA samples were amplified by using K-CN gene specific primers in Polymerase Chain Reaction (PCR). Amplified PCR products were separated in 2% agarose gel electrophoresis. Amplified PCR products were digested by Hae III – Hind III – Hinf I for Exon 4 – Intron 5 and Hind III for Exon 4 restriction endonuclease enzymes in accordance to their respective protocols for to determine gene polymorphisms. Digested PCR products were then separated in 3% agarose gel electrophoresis in order to determine allelic polymorphisms. As a result, only BB genotype (Hinf I enzyme) was obtained, but E allele (Hae III) was not obtained for K-CN gene. For Hind III enzyme, only BB genotype was obtained from Exon 4 of K-CN gene, while both AB (27.41%) and BB (72.59%) genotypes were determined from Exon 4 - Intron 5 of K-CN gene. No gene polymorphism was detected from used restriction enzymes in Anatolian water buffaloes (P>0.05). In conclusion, it can be said that Anatolian water buffaloes have higher milk yield with high milk fat due to presence of BB genotype. This research was supported by the Scientific Research Project Fund of Sivas Cumhuriyet University under project number V-019. Ethics approval of the study was granted from the Local Ethics Committee for Animal Experiments of Cumhuriyet University in 19.06.2014 with issue number of 65202830/122.

Keywords: Water Buffalo, Kappa casein, PCR-RFLP.

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International VETEXPO-2019 Veterinary Sciences Congress
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Oral presentation

Determination of the behavioral variables occurred after parturition mother dogs in Kangal shepherd dog breeding centers

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Abstract

The aim of the study was to investigate maternal aggression-stress relationship by determining behavioral variables occurred after the parturition among Kangal shepherd dogs that were kept in sequential kennels. Behavioral parameters exhibited prior to and following the parturition by clinically healthy 10 Kangal shepherd dogs in ages between 3 to 7 years were recorded by using video camera. All the dogs were breeding under the same conditions, and all were in Kangal shepherd dog breeding centers located in Sivas province. Among the recorded behavioral parameters, the following stress parameters were determined: attention deficit, yawning, increase in the frequency of urination-defecation, confusion, over scratching and over licking, overdrinking, barking, rigidity, hyperactivity, low body position, low tail position. These parameters were evaluated by using stress related behavior including ethogram and their relationship with the maternal aggression was interpreted. Sampling method used in the study was the "focal animal sampling method". Principle of this method is based on the observation of an individual animal in a set time frame. Animal count of each observed stress parameter was represented as percentage in groups in the study. At the end of the study, several of the stress parameters increased in 6 of the recently birthed dogs compared to their conditions before the birth, while the other 4 dogs were exhibited all parameters in increases. In all dogs, it was determined that maternal aggression based stress behaviors are exhibited against other dogs in kennels. However, observing all parameters in 4 dogs would indicate that under extreme stress, aggression can also be against the pups. Particularly for these 4 dogs, and for dogs that have birthed recently, it is suggested that their kennels should be transferred to other kennels where they can't see other dogs.

Keywords: Kangal shepherd dog, stress behavior, maternal aggression

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VETEXPO-2019 homepage: http://vetexpo.org/
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September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

The pathogenetic method of treatment of purulent wounds in dogs

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Odessa State Agrarian University, Faculty of Veterinary Medicine and Biotechnology Odessa, Ukraine.

Abstract

The effectiveness of the pathogenetic method of treatment of purulent wounds in dogs with on application 1,5 % solution of reamberine, prepared on its basis, was clinically, theoretically and experimentally justified, which was confirmed by objective criteria for assessing the clinical condition of animals and by morphological, biochemical studies. Treating dogs with purulent wounds included primary surgical treatment of wounds, retention suture stitching and Levomecol ointment administration through passive drainage application. 1,5 % solution of reamberine at a dose of 10 ml/kg body weight was injected intravenously to animals of the experimental group were for 5 days. Dogs in the control group were injected with 5 % glucose solution at a dose of 10 ml/kg of body weight for 5 days. The animals of experimental group, which in took 1,5 % solution of reamberine, the absence of purulent exudates in the cavity of the wound was found on the 3,2±0,18 day of treatment, i.e. 1,3 times ($p<0,01$) faster than that in the control animals. The best therapeutic effect was obtained in the group of animals treated with Reamberine. Wound healing and suture removal occurred on the 8,4±0,21 day of treatment, which was 1,3 ($p<0,001$) times faster compared with the control group. The recovery of blood parameters took less time compared with the control animals: on the 7th day of treatment the level of MDA, fibrinogen, superoxide dismutase (SOD) plasma activity, the percentage of total antioxidant activity (LAA) of plasma, and on the 10th day of treatment − the number of MSM, total protein, ceruloplasmine, catalase.

Keywords: purulent wound, dog, treatment, reamberine solution.

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

The relevance of using non-conventional feed additives produced from marine hydrobionts in poultry farming

Nina Dankevych

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Abstract

Technologies for recycling mussel (*Lat. Mytilus edulis Linnaeus*; Lat. *Mytilus galloprovincialis Lamarck*) and seaweed wastes (Lat. Phyllophora nervosa) into feed additives – protein-mineral and mineral ones with sea water adding were developed on the basis of the research results. The technology of producing feed additives from marine hydrobionts, protein-mineral and mineral, is approved by two useful model patents of Ukraine: No. 34634 (2008) A23K1/75 "Method for producing feed additive from marine hydrobionts for poultry No. 42687 (2009) A23K1/10, "Method for producing feed additive from marine hydrobionts for poultry. In accordance with the study methodology control and test groups of broiler chickens were provided with staple ration for 8 days (aged from 12 to 20 days). From the 21st day till the end of the period (62 days in total) their ration was enriched by paste-like additives in the amount of 7 % to the staple ration. We used the additives in 2 ways: 7 % replacement of the staple ration with additives and adding extra 7 % of additives to enrich the staple ration. Sea hydrobiont additives produced according to our own technology can be used when raising chickens as non-traditional source of proteins and minerals for staple ration. Enriching the ration of chickens by protein-mineral additive in the amount of 7 % or replacing the ration by the same amount of the additive allows to increase their body weight gain by 6,9 % as well as relative growth and conservation rate. Enriching the ration by mineral additive increases body weight gain of chickens by 4,9 %.

Keywords: marine hydrobionts, protein-mineral additive, mineral additive

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Comparative therapeutic effects of Theranekron D2® and Theranekron D6® in the treatment of foot- and- mouth disease (FMD) in cattle

Samad Lotfollahzadeh
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Abstract

Foot-and-mouth disease (FMD) is a highly contagious viral infection in domestic and wild cattle, sheep, goats and pigs. Theranekron® is a homeopathic remedy manufactured by Richter Pharma AG, Austria, containing the spider, Tarantula cubensis. Since 2013 Theranekron D6® (new potentiation) is available on the market in some countries. The aim of this trial is therefore to compare the efficacy of Theranekron D2® and Theranekron D6® in cattle with FMD. As a whole, 90 naturally infected cattle (beef and dairy cattle) in early stages of disease, came from two big farm and three small farms, included into the study. The animals randomised to three different groups and encountered to three different treatment regimens. In the first group, 30 animals received Theranekron D2 and in the second group, 30 animals received Theranekron D6. Thirty infected animals simultaneously studied as control group. Animals in the control group received classic treatment including: daily intramuscular injection of flunixin meglumine, Oxytetracycline for the prevention of secondary bacterial infections and daily dressing of lesions with 4% sodium carbonate solution. Clinical signs recorded on day 0 (treatment day) and on days 1, 2, 3, 7, 14. Repeated measure ANOVA test followed by Tukey's HSD test as well as Friedman test and Mann-Whitney U test were used for comparing results in three examined groups. Overall differences between the standard treatments and Theranekron® where they occurred were significant. Theranekron D2 and Theranekron D6 treated FMD infected cattle (dairy and fattening) and there were not any significant differences between important clinical signs of treated animals during different days of treatment with each homeopathic remedy. From the results of the present study, it can be concluded that Theranekron D2 and Theranekron D6 can treat naturally infected cattle with FMD successfully and there is no difference between two drugs in treating this disease.

Keywords: Foot-and-mouth disease, Theranekron, *Tarantula cubensis*, cattle

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Detection of *Theileria annulata* in blood samples by PCR and comparison with staining method in northwest of Iran

Ahmad Nematollahi, Parisa Shahbazi, Samad Ebrahimian
University of Tabriz,Faculty of Veterinary Medicine,Department of Pathobiology,Tabriz, Iran

Abstract

Bovine theileriosis caused by *Theileria annulata* is a tick-borne disease of great economic importance in tropical and subtropical regions of the world. The diagnosis of theileriosis is usually carried out by blood smear staining technique, which is not sufficiently sensitive to detect the piroplasms in the carrier animals. Aim of this study was comparison of efficacy of routine microscopic and PCR methods for diagnosing of theileriosis. In this study a total of 100 blood samples were collected from cattle in Urmia district in summer 2018. Samples were detected by Giemsa staining and microscopic observation. Also samples were detected by PCR method based on using the specific primers from the major merozoite-piroplasm surface antigen sequence of T. annulata (Tams-1) gene. In microscopic method (7%) samples were positive. However, the PCR detected 38 samples (38 %) positive for T. annulata. Our study suggests that the PCR based screening is more sensitive and accurate method for diagnosis of theileriosis in cattle.

Keywords: *Theileria annulata*, PCR, cattle

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Molecular detection of *Theileria annulata* in ixodid ticks in northwest of Iran

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University of Tabriz, Faculty of Veterinary Medicine, Department of Pathobiology, Tabriz, Iran

Abstract

Ixodid ticks transmit various protozoan diseases in animals such as theileriosis that cause a lot of economic loss in livestock industry. The purpose of the present study was to detect *Theileria annulata* infection in ticks in cattle in Urmia district in North West of Iran. One hundred ticks were collected from some suspected flocks with history of theileriosis and were transported to laboratory. Taxonomic identification was done based on morphological characteristic. Ten tick species were found: *Hyalomma anatolicum anatolicum* (29%), *Hyalomma aegyptium* (16%), *Boophyls anulatus* (16%), *Dermacentor marginatum* (14%), *Rhipicephalus bursa* (9%), *Dermacentor niveus* (4%), *Ornithodorus lahuransis*(4%), *Hyalomma anantolicum excavatum*(3%), *Rhipicephalus sanguinus* (2%) and *Haemaphysalis punctate* (1%).Salivary glands of ticks were isolated and examined using specific primers from the major merozoite-piroplasm surface antigen sequence of T. *annulata* (Tams-1) gene by PCR. Analysis of ticks by using PCR revealed T. *annulata* in 65(65%) of evaluated ticks. The high rate of infestation in ticks to T. *annulata* identifies the high risk of them to transporting the disease to cattle in North West of Iran and *Hyalomma anatolicum anatolicum* is the first candidate for transmitting of the disease.

Keywords: *Theileria annulata*, PCR, cattle

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Evaluation of anesthesia in combination with dexmedetomidine, medetomidine, butorphanol, morphine and ketamine in terms of clinical and blood parameters

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Abstract

In this study, dexmedetomidine, medetomidine, morphine and butorphanol combined with ketamine, the general anesthetic drug, has been used in clinical and experimental studies in order to achieve equilibrium anesthesia in desired duration and quality. The effects of the use of these drugs in various combinations on clinical and blood parameters were investigated. Twentyfour healthy adult cats were used in 4 groups. Subjects were evaluated in terms of clinical (respiratory rate, heart rate, blood pressure, capillary filling time, body temperature, conjunctival color, dehydration status), and hematological parameters. Six cats in the first group were treated with dexmedetomidine 0.01 mg/kg IM, then butorphanol 0.2 mg/kg SC and 10 minutes after 5 mg/kg IM ketamine was administered and the patients were intubated. Medetomidine 0.02 mg/kg IM was administered to in the second group, then butorphanol 0.2 mg/kg IM and 5 mg/kg IM ketamine was administered after 10 minutes and the patients were intubated. Dexmedetomidine 0.01 mg/kg IM was administered to in the third group, then morphine 0.1 mg/kg IM and 5 mg/kg IM after 10 minutes, and the patients were intubated. Medetomidine 0.02 mg/kg IM was administered to in the fourth group, then morphine 0.1 mg/kg IM and ketamine at a dose of 5 mg/kg IM 10 minutes after intubation. Onset of swallowing, onset of first movement, perception of sound and raising the head, sitting position and standing up, walking without coordination were realized in the third group at the earliest. It was determined that the best result was observed in the 3rd group during the awakening period. When the hematological data, respiratory, cardiologic and awakening periods were evaluated, it was found that the best data were in the dexmedetomidine and butorphanol group.

Keywords: Cat, anesthesia, combination

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Detection of bovine coronavirus in neonatal calve diarrhea in Iran and its phylogenic analysis based on gene N

Samad Lotfollahzadeh
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Abstract

Bovine coronavirus is a primary cause of neonatal calf diarrhea worldwide, resulting heavy economic losses to both dairy and beef industry. The Objective of the present study was to screen the fecal samples for BCoV collected from diarrhea from six geographic region of Iran, with the aim to increase the knowledge of BCoV prevalence and molecular epidemiology in Iran. 194 fecal samples from diarrheic calves up to one-month age, based on the geographic area were collected. Samples from all the cases were screened for the presence of BCoV by commercially available ELISA kit. Furthermore, all positive samples were subjected to RT-PCR for confirmation for gene N. RT-PCR assay, targeting a 407 bp fragment of the nucleocapsid (N) gene of BCoV with published primers that could amplify all BCoV strains. ELISA examination of stool samples revealed that 7.2 % of taken samples were positive for BCoV. All samples from the south-west, northeast, and west, were negative. The average ages of positive calves were nine days. The average stool scores in positive and negative samples for BCoV were 2.5 and 2.1 respectively. The results of the present study showed that the occurrence of coronavirus in stool samples of diarrheic calves in dairy farms of Iran is lower than the other parts of the world. Strains of Iran showed the most similarity to the European strains, such as France, Croatia, which may have been due to the imported cattle from these countries.

Keywords: Bovine coronavirus, cattle, neonatal calf diarrhea, phylogenic analysis

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

DNA sequence analysis of estrogen receptor alpha and steroid 5-alpha-reductase type 2 genes in Holstein cattle affected by hypospadias and congenital anomalies of the female genital tract

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Abstract

This study aimed to detect DNA sequence variations of estrogen receptor alpha (ESR1), steroid 5-alpha-reductase type 2 (SRD5A2) genes involved in hormonal pathways and investigate their associations between hypospadias and congenital anomalies of the female genital tract. Total five blood samples were collected from cattle affected by one hypospadias, two female genital tract anomalies and two clinically normal cattle. 400 bp fragment in exon 1 of ESR1 gene and 567 bp fragment including exon 2 region of SRD5A2 genes were amplified by PCR and PCR products were directly sequenced in both directions. In this study, while first hypospadias case was reported for cattle raised in Turkey, it was also investigated very rare congenital anomalies of the female genital tract. As a result of sequence analysis an A/C transversion was detected at nucleotide position 344 of the obtained sequence from the amplification of ESR1 gene. Five different nucleotide substitutions A/G, G/A, A/C, G/T and G/A were detected at nucleotide position 74, 313, 365, 445 and 468 of the sequence obtained from the amplification of SRD5A2 gene, respectively. The A/C transversion on the exon 1 of the ESR1 gene was not associated with hypospadias and other congenital anomalies due to the fact that it also observed in one sample of the clinically normal cattle and previously reported as variation between individuals in different cattle breeds. As a result of sequence analysis of SRD5A2 gene two different single nucleotide substitutions were observed as specific to one of the female genital system anomalies although it was not detected any mutations associated with hypospadias. The effects of these nucleotide substitutions on female genital system should be investigated in more samples.

Keywords: Cattle, DNA, SRD5A2, ESR1, mutations

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Isolation of Salmonella from hedgehog faeces living in parks and gardens and determination of antibiotic resistance

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Abstract

Hedgehog is one of the animals that started to feed as pet animals worldwide. In our country, hedgehogs are listed in "Wild Animals Protected by Republic Of Turkey Ministry Of Agriculture And Forestry", and they are prohibited from being removed from the natural environment and cared as pet animal at home. However, hedgehogs, whose nest has deteriorated due to the deterioration of the natural environment as a result of intensive construction, have started to live in areas where people live for feeding purposes. The hedgehogs who come to eat cat food left in the streets in order to feed stray cats, especially by animallovers, have come into close contact with both stray animals and humans. Salmonellosis is a global disease, most commonly reported as food and waterborne bacterial infection in humans, sometimes transmitted from animals to humans or from human to other animals by a vector. In many European countries, salmonella isolated from hedgehog faeces is reported to be the source of human salmonellosis. In this study, fecal samples were collected from 30 hedgehogs brought to veterinary clinics for treatment in Istanbul. Samples were cultured for salmonella by conventional methods and were confirmed as the *Salmonella spp*. by PCR. The typing of the strains was performed in the reference laboratory. Antibiotic resistance profiles of the two isolates were determined. As a result, 2 *Salmonella spp*. isolated from 30 stool samples were identified as *Salmonella Typhimurium* 4,5,12: i: 1,2. Both isolates were phenotypically resistant to ciprofloxacin, but genotypically resistant genes were not detected. This study is the first report that was revealed *Salmonella* carriage in the hedgehog in Turkey. *Salmonella Typhimurium* is known to cause severe infections in humans. For this reason, more extensive studies should be performed in terms of the carrier of salmonella and other zoonotic agents in hedgehogs.

Keywords: Hedgehog, faeces, *Salmonella spp*., antibiotic resistance

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Acute deltamethrin intoxication in a cat

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Abstract

In this report, it is aimed to notify clinical, haematological and biochemical changes due to deltamethrin intoxication in a 10-month-old female, tabby cat. The material of the case was a 10-month old, female tabby cat. The cat had the complaints of difficulty in standing, stretching the legs to the sides and doing abnormal moves. These complaints occurred after the cat licked its kittens which were sprayed with a watery solution of a pesticide called K-Othrine SC 50 that contains deltamethrin that is used against intense lice infestation which is frequently seen in the kittens. Haematological and biochemical analyses were performed on the blood sample. In the physical examination of the cat; Incoordination, spontaneous contractions, ataxia, hyperesthesia, hypothermia (T:37.2°C), tachycardia (128/min) and mydriasis were detected. Hematologic examination revealed leukocytosis (24.81x103/µL) and neutrophilia (21.38x103/µL). Biochemical analysis showed an increase in ALT, AST, ALP, LDH and CK-MB activities and cholesterol, glucose, calcium and potassium levels. Since there was no specific antidote to deltamethrin toxicity, 0.9% NaCl and 5% dextrose solution were administered intravenously at a dose of 40 ml/kg and diazepam at a dose of 0.5 mg/kg. 5 mg/kg enrofloxacin was administered subcutaneously. In the treatment of hypothermia blankets and hot water bottles were used. According to the information obtained from the owner, it was learned that the cat regained its health. In this case report, attention was drawn to clinical, haematological and biochemical changes in deltamethrin toxicity in cats. Also, it was concluded that the prognosis of deltamethrin toxicity was generally very good with prompt and effective treatment.

Keywords: Deltamethrin, intoxication, cat

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

The treatment of septic arthritis in the calves with arthroscopic lavage

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Abstract

Arthritis is a common disease in calves, manifested by various clinical symptoms and may cause joint deformities with progression of the case. Septic arthritis is usually characterized by severe lameness and swelling of the joints and signs of pain. We evaluated arthritis in 28 calves were brought to Fırat University Animal Hospital with complaints of joint swelling and lameness. The aim of this study was to determine the effect of two different lavage solutions and different antibiotic routes on the treatment process. Patients were divided into four groups in the treatment protocol. Seven patients were treated with arthroscopic lavage (AL) with 0.1% povidone-iodine and intraarticular gentamicin, 7 were treated with AL with 0.1% povidone-iodine and intramuscular gentamicin. Seven patients were treated with AL with 0.05% chlorhexidine and intraarticular gentamicin, 7 were treated with AL with 0.05% chlorhexidine and intramuscular gentamicin. Applications were repeated 3 times with one week intervals. Clinical examination, complete blood count and synovial fluid analysis revealed that septic arthritis was diagnosed. Desired success was achieved in patients who continued the treatment (intraarticular lavage + gentamicin) once a week in 3 doses. As a result of the evaluation, treatment was successful in 67% of the animals in group 1 and 3. Treatment was successful in 57% of the animals in the second and fourth groups. The gentamicin used in the first and third groups was administered intraarticularly and intramuscularly in the second and fourth groups. In the evaluation, it was observed that intraarticular administration was more effective. When the post-treatment results of each group were evaluated, it was found that there was no difference between two separate lavage solutions. It was also observed that the success of treatment in septic arthritis cases in calves is related to the continuity of antiseptic lavage application.

Keywords: Calf, arthritis, arthroscopic lavage

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Management of comminuted fractures with intramedullary pins

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Abstract

Comminuted fractures are quite common and their fixation is not easy. Fracture, patient and client has to be evaluated correctly to decide the fixation type. Mechanical, biologic, clinical environment and costs determine the choice of fixation type. In cats and small sized dogs, there may not be enough place to insert plate screws or external fixator pins. If they are inserted to small bone fragments, it can easily break fractured fragment again. In this work comminuted intercondylar humerus and femur fractures of 4 cats were operated with multiple intramedullary pins to see if anatomical accuracy of the fragments can be managed correctly. Although intramedullary fixation stability is lesser than plate or external fixation, results were satisfactory and functional.

Keywords: Comminuted fractures, intercondylar fractures, intramedullary pins, fixation biomechanics, fracture assessment

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Polymorphonuclear leukocyte isolation from venous blood of the dog

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Abstract

The aim of the current study was to neutrophil isolation from venous blood samples of healthy dogs. Venous blood samples were obtained from Venae cephalica of clinically healthy dogs (n:5) into heparinized tubes. The blood samples (2 mL) and Percoll dilutions (45%, 54%, 63%, and 72%) prepared with Hanks Balanced Salt Solution (HBSS) were layered into sterile tubes. After centrifuge, the polymorphonuclear leukocytes (PMN) were aspirated between 63% and 72% interfaces of the Percoll dilutions into tubes. The samples of PMN observed under light microscopy. Viability was detected microscopically after stained with trypan blue dye. Diff-Quick staining was used to detect neutrophil purity of the isolated PMN. In the present study, the neutrophils ratio was calculated as 92% of the isolated polymorphonuclear cells. The neutrophil viability was calculated as 98% of PMNs isolated from the venous blood samples of healthy dogs. In the present study, the Percoll gradient centrifugation (72%, 63%, 54% and 45%) is fast technic for isolation of the neutrophils from venous blood samples of dogs.

Keywords: dog, venous blood, polymorph nuclear leucocyte, neutrophil, isolation

This study was financially supported by Scientific Research Coordination Unit of Kırıkkale University (Project code: 2017 / 080).

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Corticosteroid as a possible cause of polycystic ovaries and consequent cystic endometrial hyperplasia CEH-Pyometra in a terrier dog (a case report)

Hamid Ghasemzadeh-nava, Abdolali Malmasi

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Abstract

Most common ovarian diseases in the bitch appear to be cystic ovarian disease (COD) or ovarian tumors. Also, the CEH-pyometra complex is one of the most serious and most common uterine diseases in bitches. Corticosteroids have been reported as a cause of cystic follicles in cows by suppressing LH surge, but this is not reported as a cause of polycystic ovary syndrome in bitch. The aim of this study is to prompt that corticosteroids may cause polycystic ovaries in bitch. A 11-year-old female terrier dog was presented to a private small animal clinic with a history of itching and red patches on her skin. On the basis of clinical signs and hematological tests, hypersensitivity condition was diagnosed by the vet and treated by a dose of parenteral dexamethasone. Based on the owner's claim, the clinical signs subsided for a while, but the signs relapsed after about 4 months. The owner referred the case to the same clinic and the vet prescribed another parenteral dexamethasone. The signs of itching and red patches on her skin subsides again, but a few days later the signs of hyperestrogenism was seen by the owner. Two weeks later, the bitch was presented to the small animal hospital (Faculty of Veterinary Medicine, University of Tehran) with the signs suspected to CEH-Pyometra complex. The bitch was depressed and anorectic, so an abdominal ultrasonography, vaginal smear and hematological tests were taken. Ultrasonographic findings showed bilateral polycystic ovaries (max. size, 1.13 cm) plus CEH-Pyometra complex. As the previous abdominal ultrasonography had not shown any disorders in the reproductive tract, we suspected to corticosteroid (dexamethasone) as the primary cause of polycystic ovaries which could lead to CEH-Pyometra complex. This is the first report of corticosteroid as a possible cause of polycystic ovaries in dogs.

Keywords: ***Corticosteroid, bitch, COD, CEH-pyometra***

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Neuromuscular involvement due to hypothyroidism in a Pekingese Mix Breed Dog

Murat İlgün, Akın Kırbaş*, Şükrü Değirmençay, Mustafa Sinan Aktaş
Department of Internal Medicine, Faculty of Veterinary Medicine, Ataturk University, Erzurum.

Abstract

In this report, it is aimed to notify the neuromuscular involvement due to hypothyroidism in a Pekingese mix breed dog. Material and Method: The case consisted of a 7-year-old Pekingese mix breed dog who came to the clinic with a history of paralysis of the left side of his body. Biochemical and haematological examinations were performed. Brain MRI was performed for neurological findings. Hematologic examination revealed neutrophilia, biochemical examination revealed increased creatine kinase (CK) activity and decreased total T4 (<0.5 ug/dl). Infarction, bleeding and fluid accumulation was not detected on brain MRI. On physical examination, bradycardia (P: 52), left-sided hemiparesis, proprioceptive loss and reflex examinations were negative and there was no deep pain in the animal. Sodium levothyroxine at a dose of 0.02 mg/kg was started on the dog diagnosed with hypothyroidism because of total T4 level <0.5 ug/dl. On the 4th day of treatment, the patient started to stand up, walked completely after 45 days and the T4 level reached to the reference values (2.71 ug/dl). In this case report, it was concluded that hypothyroidism should be considered in cases accompanied by neurological findings.

Keywords: Hypothyroidism, dog, neural findings, Pekingese Mix Breed

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Multiple feather cysts and surgical resection with radio cautery in a canary

Kübra Gerbaga Özsemir, Aynur Demir

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Abstract

A six-year-old canary was referred for recurring multiple feather cysts involving the mantle cover feathers and, undertail cover feathers. On physical examination, there were no other clinical complaints. Surgical removal of the feather cyst was successful using a surgical radio cautery. The cyst has not recurred on surgical site or on adjacent feathers during the two years following surgery, but new cysts have formed on wing feathers. Cysts frequently recur after lancing, curettage, or fulguration. Previously published reports suggest that complete feather follicle removal. This report provides a description of the removal of feather cyst with radio cautery and long term outcomes.

Keywords: Bird, cyst, feather, radio cautery

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Primary intraocular malignant melanoma in a cat

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Abstract

Melanomas are tumors originating from melanoblast and melanocyte cells. They are commonly seen in the skin, eye and oral cavity respectively in cats. Ocular melanomas are named as epibulbar (limbal), conjunctival and uveal depending on the location of the eye. In cats, iridial melanomas develop mostly from the anterior uvea (iris and ciliary body) and rarely from the posterior uvea (choroid). This case was a 16-year-old male cat who was brought to the hospital with complaints of redness, pain and enlargement of the eyeball for a long time. Ophthalmologic examination revealed blepharospasm, ocular pain, episcleral congestion, corneal vascularization and diffuse edema. The size, localization and extent of the mass were determined by ocular ultrasound and magnetic resonance imaging (MRI) findings. Primary intraocular malignant melanoma was diagnosed by histopathological examination of the eye removed by enucleation method. No metastasis was observed in the postoperative period of one year. In this case, we aimed to share ophthalmologic, ultrasonographic, magnetic resonance imaging, histopathological examination findings and treatment and prognosis of primary intraocular malignant melanoma. .

Keywords: Intraocular, cat, melanoma, MRI, uvea

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International VETEXPO-2019 Veterinary Sciences Congress
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Poster presentation

A case of intraocular linear foreign body in a cat

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Abstract

Intraocular foreign bodies are a common result of penetrating ocular trauma. These objects can be found in a variety of ways, making clinical diagnosis difficult. They are characterized by a series of clinical findings related to the type of foreign body, entry point and the presence of secondary infection. They often occur in the small intestine, causing perforation, peritonitis and death, while intraocular location is very rare in cats. Early diagnosis and removal of the foreign body are important to determine the outcome of treatment. In this case report, a 3-year-old male cat has been reported to have a linear foreign body penetrating through the oral cavity and coming out of the eye, causing lenticular and corneal perforation. A metal needle that facilitated the progression of the infection was seen entering the eye through the oral cavity. Ophthalmic examination revealed corneal perforation and edema, hyphemia, uveitis, miosis, lenticular perforation. The foreign body was carefully removed with slow movements, the anterior segment was cleaned and the corneal perforation was closed with simple sutures with 8/0 polyglactin 910 suture material. After postoperative topical and systemic medical treatment, vision was restored. In this case, the clinical presentation, etiology and treatment of an unusual intraocular linear foreign body that resulted in lenticular and corneal opacity in a cat were evaluated.

Keywords: Intraocular, cat, perforation, trauma, foreign body

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

Linear foreign body ingestion in a cat

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Abstract

In this case report, it is aimed to give detailed information about a cat that ingestion a linear foreign body. The case material consisted of a 2 years old crossbred male cat that had vomiting for 2 days (7 times in total). Clinical examination revealed that body temperature, respiration and pulse rates were within reference ranges, abdominal tension, pain and a hard mass were palpated. Radiographic examination revealed that the intestinal rings were gathered together and the large intestines were filled with feces. Abdominal ultrasonography showed acoustic shadowing, which is typically seen in foreign body cases. The patient was diagnosed with linear foreign body ingestion and was given a single dose of 10 g glycerol + sodium citrate + sorbitol enema and 1 mg / kg maropitant subcutaneously. After the enema application, it was seen that the string was thrown by defecation. Antibiotics were applied for protective purposes and it was learned that the cat regained its health as a result of the treatments. It was concluded that the presence of a linear foreign body should be evaluated in cats with severe vomiting in a short period of time, and the use of radiographic and ultrasonographic examinations will contribute to the definitive diagnosis.

Keywords: Cat, linear foreign body, radiography, ultrasonography, vomiting.

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Poster presentation

A case of chemical/ alkali burn in the eye of a dog

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Abstract

A 2-year-old female unvaccinated dog was brought to our clinic with the complaint of squinting after contact with slaked lime. Symptoms such as severe pain, corneal edema, blepharospasm and keratoconjunctivitis were noted at the initial consultation. In ophthalmologic examination, under local anesthesia (Alcaine 5%, Alcon, USA) confirmed the contact of slaked lime with the eye and a severe chemical (alkali) burn as a result. Affected eye contaminated with slaked lime were rinsed thoroughly with 'normal' saline followed by an application of fluorescein stain in order to determine the level of damage on the cornea. All of the corneal surface was positive fluorescein and intraocular layers could not be observed due to severe corneal edema. The treatment included administration of amoxicillin and clavulanic acid regularly for a week. Ofloxacin, acetylcysteine and cyclopentolate drops was started. An eye lubricant that contains hyaluronic acid (Dryex %0.15, Abdi Ibrahim, Turkey) was also added to the treatment for dry eye. Elizabethan collar was applied. The patient were asked to revisit every 5 days. Although severe inflammation and pannus developed on the cornea for the first 10 days after the incident, inflammation and opacity started to resolve visibly on the upcoming days. The therapy continued for a total of 20 days with a few alterations on the number of applications of the medications along the way and the next week. Fluorescein staining was repeated at the end of the therapy and the result was negative. In order to resolve the chronic keratitis and corneal vascularization, the patient was put on a 10-day-long local dexamethasone (Onadron, I.E. Ulagay, Turkey) therapy with doses being reduced gradually. The use of anti inflammatory drug helped with the cornea being transparent again and reversed the capillary formation that contributed to healing process. The patient regained vision after treatment.

Keywords: Dog, chemical-burn, corneal-ulcer, alkali-burn

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

Turkish Small Animal Veterinary Association
14 International Continuing Education Congress
8-9-10 NOVEMBER 2019
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PS01

Mast Cell Tumor of the Third Eyelid Gland in a Kangal Dog

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Abstract

Neoplasms of the conjunctiva and third eyelid gland are rare ocular lesions in dogs. Adenocarcinoma, melanoma, squamous cell carcinoma, papilloma, mast cell tumor, lymphoma, hemangioma, myoepithelioma, extramedullary plasmacytoma, malignant peripheral nerve sheath tumors and basal cell carcinomas are tumors reported in the third eyelid and are generally invasive. Mast cell tumors have a high prevalence in cats, but have a very low incidence in dogs. These tumors, which are specific to the skin, are rarely seen in primary extra cutaneous tissues and they cause variable size swelling due to mast cell degranulation and histamine release in the affected tissues. The case was a 6-year-old male, Kangal dog who was brought to Istanbul University, Cerrahpasa Veterinary Faculty Clinic. The dog was brought to our clinic with complaints of redness, pain and ocular discharge in the right eye for a long time. Ophtalmologic examination revealed follicular conjunctivitis and a large, firm swelling with protrusion of the third eyelid. Incision was made 2-3 mm from the bulbar conjunctival surface of the third eyelid parallel to the edge of the eyelid and the mass was removed with tear gland by total excisional biopsy. Incisional conjunctival mucosa was closed with 5/0 polyglactin 910 suture material with simple continuous suture. The mass was soft and fleshy, 1X 1,5X 0,5 cm in diameter with no significant capsule formation and histopathological examination revealed mast cell tumor of third eyelid gland. Topical and systemic medical treatment was applied for two weeks following the operation. It was learned that the clinical complaints of the patient disappeared completely after the treatment. No recurrence occurred during the 6-month post-operative period. In this case report, it is aimed to share the clinical and histopathological examination findings and treatment results of mast cell tumors of the third eyelid gland which is rare in dogs.

Keywords: Gland, Dog, Mast cell tumor, Treatment, Third eyelid,

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8-9-10 NOVEMBER 2019
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PS02

Medical and Surgical Treatment of Traumatic Corneal Perforation Complicated with Iris Staphyloma in Cat

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Abstract

Corneal perforation is a full-thickness rupture of the cornea that requires urgent intervention due to ocular morbidity. Small ruptures (eg <1-2mm) can be self-closing with a clot, whereas large ruptures cause the aqueous humor to flow through the eye suddenly and move the iris forward to close the open. This condition leads to anterior synechiae or prolapse of the iris from the wound site. Treatment varies depending on the size of the defect, the underlying cause and the preference of the surgeon. The study material consisted of a 1.5-year-old infertile male cat who was presented to I.U-Cerrahpasa Veterinary Faculty Surgery Clinic 2 hours ago with a complaint of unilateral active bleeding and blepharospasm in the eye after falling from a certain height. The ophthalmologic examination revealed a shallow anterior chamber, hyphema and irregular pupilla due to the 12-13 mm long corneal perforation that was starting from the upper limbus and continuing up to a distance of 2-3 mm from the lower limbus. A large part of the iris was prolapsed and the wound edges were covered with clot and fibrin. Anesthesia was induced with ketamine hydrochloride (5 mg/kg, intravenous) following xylazine hydrochloride (1 mg/kg, intravenous) administration. Twenty minutes before the operation, topical midriatics were administered. The infected and damaged part of the prolapse iris was removed by iridectomy. Corneal perforation was closed with 8/0 polyglactin 910 suture material with simple separate sutures. After irrigation and aspiration of the anterior chamber, third eyelid flap (effective for ten days) was performed. Subconjunctival steroid was injected after the surgery. Postoperative topical-systemic agents of antibacterial, anti-inflammatory and mydriatic were applied. The aim of this study is to show that in cases with corneal perforation and iris staphyloma leading to eye loss when not treated early, emergency surgery and appropriate medical treatment are very effective.

Keywords: Emergency, Iris prolapse, Cat, Corneal perforation, Treatment

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PS03

Treatment of Ocular Proptosis and Corneal Ulcer Accompanying Fracture of Symphysis Mandible in a Cat

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Abstract

Ocular proptosis is abnormal outward protrusion of the eyeball. It is an ophthalmic emergency that requires early intervention. This condition, caused by orbital or head trauma, is usually associated with keratitis, corneal dryness and ulceration, strabismus, hyphema with facial bone fractures. It is common in dogs and rarely in cats due to its orbital structure. Visual acuity is achieved in ~ 50% of dogs, while this rate is very low in cats. Prognosis varies depending on the size of the trauma, the breed of the cat, the depth of the orbit, the duration of the proptosis, the size of the pupil, the condition of exposure keratitis. Treatment involves enucleation or placement of the eye with tarsorrhaphy. In this study, a 2-year-old, non-neutered male cat was brought to I.U- Cerrahpasa Veterinary Faculty Department of Surgery with the complaint of trauma. Medical and operative treatment of proptosis, exposure keratitis and corneal ulcer were evaluated. Clinical examination revealed symphysis mandible in the jaw, ophthalmologic examination revealed pain around the right eye, mucopulent discharge, central and large corneal ulcer, partial protrusion of the eyeball. Anterior and posterior segment examination and menace and pupillary light reflexes could not be assessed due to corneal lesion. Fracture of symphysis mandible was achieved by cerclage wire fixation and protruded eyeball was replaced with temporary tarsorrhaphy. Horizontal mattress suture was performed in the tarsorrhaphy process. Subconjunctival dexamethasone was injected after the operation. Medical treatment was used for 4 weeks and tarsarofi sutures were removed 3 weeks later. There was a superficial fibrosis on the cornea but vision was provided. The aim of this case is to emphasize the importance of appropriate medical treatment and surgical approach in post-traumatic proptosis of cats in which emergency intervention is very important for prognosis.

Keywords: Eye, Cat, Corneal ulcer, Proptosis, Symphysis mandible

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PS04

Intralaminal Stent Implantation in a Dog with Tracheal Stenosis

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Abstract

We presented a case of 8 year old castrated male Yorkshire Terrier dog with dyspnea. In clinical examination typical "goose honking" sound noted. Radiographic examinations revealed narrowing in the intrathoracic region of trachea. Computerized tomography (CT) was performed. As a result of the findings, the patient was diagnosed with 4th stage "Tracheal Stenosis". Boston Scientific Wallstent® was implanted intraluminally to the site of stenosis with the guidance of digital x-ray (DR). No symptoms were seen on day "0" after the implantation. On the 3rd day, a dry cough complaint was seen and it was thought to be related to stent irritation. Cough were controlled with prednisolone for 30 days and butarfanol for 7 days. On the 30th day, no clinical symptoms were reported by the dogs owner. On the 60th day, cough was reported again, with prednisolone administration for 14 days clinical symptoms resolved. For now, no respiratory complaints were seen and the patient is still coming to routine check up. Conclusion, it would be beneficial to present the case in order to be an example of successful and safe application of this method in Turkey.

Keywords: Tracheobronchomalacia, Tracheal collapse, Intraluminal stent

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PS05

A Femur Ostheosynthesis with Intramedullary Pin in A Guinea Pig

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Abstract

The popularity of guinea pig in the role of exotic pets there is an increase for specialized veterinary services. In small mammals, limb fractures are a common occurrence following a fall from a height. Whenever possible the option of fracture repair should be considered and proposed to the owner. Fracture repair with external fixation and intramedullary pins has been described in small mammals, and local and regional anaesthetic techniques are widely accepted to provide good analgesia in rodents. The fracture surgery are not rare in guinea pigs, so the surgical repair is recommended in first treatment and give the highest successfully result. This paper reports the case of a complete fracture of the femur in a guinea pig treated surgically with an intramedullary pin.

Keywords: Guinea pig, osteosynthesis, femur.

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PS06

A Case of Pododermatitis in A Rabbit

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Abstract

Although in our country, application to our clinics of exotic small mammal patients are increasing, some diseases not known enough yet. One of this diseases is pododermatitis. Teorically disease is known but scoring and treatment has some mistakes and deficiency. So succesfully treatment rate is decreasing. This study was aimed to decrease this mistakes and deficiency and increase that succesfully treatment rate.

Keywords: Rabbit, Pododermatitis, Scoring

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PS07

Treatment Approaches in Pulmonary Hypertension Due to Right Heart Failure: A Case Report

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Abstract

Sildenafil is a phosphodiesterase type 5 (PDE-5) inhibitor found in corpus cavernosum and pulmonary smooth muscles. PDE-5 is an enzyme that induces cGMP degradation, and its inhibition results in the appearance of cGMP increase in tissue. It causes accumulation of nitric oxide in tissue, relaxation of smooth muscles and vasodilatation. It is rapidly absorbed following oral administration but its absorption is delayed when given with fatty foods. Its half-life is 6 hours for animals and 4 hours for humans. It is primarily metabolized by hepatic CYP 3A4. Cimetidine, Erythromycin, HIV protease inhibitors raises Sildenafil plasma levels. Co-administration of alpha adrenreceptor antagonists and sildenafil may result in life-threatening hypotension. The use of nitrate is contraindicated with sildenafil. Sildenafil was used 3 times a day initially. We observed decrease in cough, increse in apetite and regression in the existing mild ascites. Sildenafil P.O caused vomiting after the first 2 doses at half an hour and an hour apart. Vomiting was not repeated with antiemetic drugs used for 2 days. Our patient, who remained stable for about 1 month, returned to our clinic with the complaint of fatigue and Sildenafil decreased to 2 tablets per day. Symptoms of hypotension decreased. During this period, hypotension was seen again when patients accidentally given 3 tablets a day. Clinical symptoms decreased and stability was observed with regular drug use. After 3 months, the clinical symptoms began to intensify and the owners decided to let the animal to be operated for PDA.

Keywords: PDA, Hypotension, Sildenafil

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8-9-10 NOVEMBER 2019
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PS08

Hibernoma in a Cat: A Case Report

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Abstract

Hibernoma is a very rare benign tumor and it is suggested to have originated from brown fat tissue, which is responsible for maintaining temperature regulation in hibernating animals and neonatal mammals. Hibernoma is a painless, slowly growing tumor and surgical removal of the mass is considered to be sufficient for treatment. In this case report, we aimed to describe a mesenteric hibernoma in cat. A 13-year-old, Siamese, female cat was presented to the clinic with motility disorder. Blood hemogram values were normal, but total protein (8.3 g / dl), albumin (4.0 g / dl), glucose (158 mg / dl), blood urea nitrogen (43.0 mg / dl) and globulin (4.3 g / dl)) were found mildly increased. Radiographs showed a well-circumscribed mass nearby the colon and the patient underwent diagnostic laparotomy. At the operation, a mass was detected at the mesenteric margin of the colon. The mass was completely removed and the incision site was omentalized. The mass was routinely proceeded for histopathologic examination, embedded in paraffin blocks and tissue sections of 4 µm thickness were cut and stained with Hematoxylin and Eosin. Furthermore, S-100 and osteopontin immunostaining methods were also performed. Histopathological examination revealed a lobular mass supported by a thin fibrovascular stroma. The neoplastic cells were found round to polygonal surrounded by small capillaries. They had eosinophilic and vacuolar cytoplasm and centrally or eccentrically located nucleus. Immunohistochemical staining showed moderate to severe positive reaction with S-100, while mild reaction with osteopontin was detected. According to histopathologic and immunohistochemical findings, the case was diagnosed as hibernoma. As a result, the present case report showed a mesenteric hibernoma in the cat. Characteristic histopathologic findings led to the diagnosis for hibernoma. Moreover, immunohistochemical findings for S-100 were compatible with the previous studies and weak immune reaction with osteopontin confirmed the benign behavior of the tumor. The motility disorder of the cat was improved by the surgical excision of the mass, and no recurrence has been observed since the post-operative period

Keywords: Hibernoma, mesenterium, cat, S-100, osteopontin

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Turkish Small Animal Veterinary Association
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8-9-10 NOVEMBER 2019
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PS09

The Use of Lomustine Treatment in a Dog with Multiple Cutaneous Histiocytomas: A Case Report

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Abstract

Canine histiocytoma is regarded as a benign neoplasm and seen mostly in dogs younger than 2 years of age. Multiple histiocytomas rarely occur and most frequently seen in Shar Peis. Histiocytomas usually undergo spontaneous regression, and recurrence is very rare. The aim of this case report is to present the recovering of young dog with multiple histiocytoma by treatment with lomustine. A 1-year-old, Rottweiler, neutered female dog was presented to the clinic with complaints of multiple cutaneous lesions, high fever, lethargy and anorexia. The lesions had been present for 2 months and they were subcutaneous, progressive, ulcerative, erythematous and button-like multiple masses ranged between 0.5 to 2 cm in diameter. Skin biopsy specimens were obtained from the right hindlimb for histopathological examination. The preparation of the specimens were performed through routine Hematoxylin and Eosin staining and also immunohistochemistry. Histopathology revealed non-encapsulated, densely cellular composition of histiocytic cells, which were arranged in sheets. There was also severe inflammation characterized by neutrophil leukocyte infiltration. The case was diagnosed as multiple histiocytoma. Although the improvement had been obtained by treatment with corticosteroids, recurrence of the lesions was observed as the dose of the corticosteroids was tried to be reduced. However, no recurrence has been observed during the treatment with lomustine for 3 months. As a result; the use of lomustine in this case was found to be successful in the treatment of multiple cutaneous histiocytomas, as previously mentioned.

Keywords: Canine, multiple, cutaneous, histiocytoma, lomustine

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Turkish Small Animal Veterinary Association
14 International Continuing Education Congress
8-9-10 NOVEMBER 2019
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PS10

Neurofibroma Case in a Dog

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Abstract

Peripheral nerve tumors arise in the cranial nerves, spinal nerve roots, and peripheral nerves. Peripheral nerve tumors [peripheral nerve sheat tumors (PNSTs)] are infrequently reported in dogs and rarely in cats. These tumors ocur most commonly in middle-aged to older dogs of medium and large breeds. Peripheral nerve tumors ocur mainly in the cranial, spinal and asssociated peripheral nerves and less commonly in the automic nerveus system. These tumors arise from Schwann cells, perineurial fibroblast or a combination of these two cell types. PNSTs also classified as schwannomas, neurafibromas and neurofibrosarcomas. Neurofibroma is a benign nerve-sheath tumor in the peripheral nervous system. In this case 5 years old Terrier dog was presented which was brought to our clinic with compleint of swelling back of its left leg. In the examination a big solid swelling, unreleated the bone, was seen on the back of the left femur. After the diagnostic procedure the patient was prepared for the operation. The dog was anesthetized and performed excisional biopsy. As a result of the pathological examination that tumor type was determined neurofibroma.

Keywords: Dog, neurofibroma, peripheral nerve sheath tumor (PNST)

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14 International Continuing Education Congress
8-9-10 NOVEMBER 2019
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PS11

Diagnostic Radiography in Birds: Examination of Internal Organs

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Abstract

The role of imaging techniques is becoming increasingly important in veterinary medicine. Radiography is often used for diagnosis in avian medicine particularly coelemic cavity and orthopedic fields. Many diagnostic test results as percussion, blood analyses, body temperature, etc. have limited interpretive value in avian patients and avian patients can often hide their clinical disease signs for a long period of time. Individual organs are not always clearly visualized on all radiographs. There are some variations in species in the size, shape, and location of internal organs. However, accurate interpretation of the radiogram depends on the well-known radiographic anatomy. The purpose of this study is to present normal radiographic images of birds and some pathological cases in different bird species.

Keywords: Anatomy, Bird, Internal organs, Radiograpy.

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8-9-10 NOVEMBER 2019
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PS12

Superficial keratectomy with allgerbrush in a dog with pigmented keratosis

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Abstract

Introduction: Pigmented keratosis is a condition caused by chronical irritation and inflammation of the eyes. The accumulation of melanine granules in cornea leads to a dark coloration (black-brown) in the area. While pigmented keratosis is very common in dogs, it rarely occurs in cats. Susceptibility of breeds in dogs is an important factor in the formation of the disease. For instance, occurrence of the disease increases in the brachiocephalic dog breeds. The main cause of the disease is considered to be the dry eye syndrome. Other causes include entropium, ectropium, abnormality in eyelashes, the conditions in which the eye orbit is exposed due to problems in eyelids, chronical corneal inflammation, and corneal ulceration.

Case: Here we present a 6 years old male pug with pigmented keratosis. The owner reported that the dog was bumping into surroundings during walking. As a result of the examination, pigmented keratosis was observed to be infiltrated in the cornea in both eyes. Schirmer test results were lower than 10 mm/min in both eyes. For the treatment, superficial keratectomy was applied with an allgerbrush, followed by dry eye treatment as the standard of care.

Conclusion: Standard medical care of pigmented keratosis may be effective after a prolonged period of time. However, the prolonged time of healing over several months may bring high risks, such as blindness. Surgical intervention with an allgerbrush shortens the time of healing and thus leads to finer results when compared to standard medical care. The risk of relapse was eliminated after surgery when the preventive measures against chronical corneal inflammation were taken.

Keywords: Pigmented keratosis, Allgerbrush, Keratectomy, Dog

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14 International Continuing Education Congress
8-9-10 NOVEMBER 2019
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PS13

Response to Ronidazole Treatment in an Abyssinian Cat Infected With *Tritrichmonas Spp.*

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Abstract

Introduction: Trichomonosis is a protozoar disease caused by Tritrichomonas foetus. It has recently been described as a new pathogen that has started to play a role in cat diseases. Trichomonosis has been shown to colonize the ileum, secum and colon in cats, causing chronic large bowel diarrhea. Trichomonosis was first isolated in 2003 as a cause of chronic large bowel diarrhea. Most of the infected cats are in shelters and cat breeding establishments, where cat density is high. Factors such as age, breed, disease history (including diarrhea), care and feeding conditions and the presence of a different pet at home, are taken into consideration in determining the risk factors of trichomonosis in cats. The infected cat feces may be malodorous, possess a fluid to solid consistency, and sometimes contain mucus with blood. In the light of this information, we present a patient with colitis caused by trichomonas infestation.

Case: an 11 month old, Abyssinian breed, female cat. It was taken from the breeder 2 weeks ago. The owner came to our outpatient clinic with complaints of bloody and mucous diarrhea, since the day it was adopted from the breeder. As a result of his examination, no additional signs were observed. There was no abnormality in blood count, blood biochemistry and fpl (feline pancreatic lipase). X-ray findings of the patient detected inflammation and abnormal gas content in the colon. The native stool assay showed motile trichomonas agents at 400x magnification. The faster and more irregular movements were noted when compared to the Giardia factor. Fecal cytology was performed for differential diagnosis and the factors were more clearly determined in wright-giemsa staining. In the treatment, ronidazole was administered at a dose of 10 mg / kg for 2 weeks.

Conclusion: Trichomonas agents should not be omitted in cases with chronic diarrhea and colitis symptoms. No neurological side effects were observed during the use of ronidazole. After the 3rd day of treatment, colitis findings were recovered.

Keywords: Trichomonas, Cat, Giardia, Ronidazole

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Turkish Small Animal Veterinary Association
14 International Continuing Education Congress
8-9-10 NOVEMBER 2019
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PS14

A Case of CEH- Pyometra Complex with Ovarian Granulosa Cell Tumour in a Dog

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Abstract

Granulosa cell tumor, which one of the most common neoplasia seen in the dog ovary originates from sex chord stromal cells. Granulosa cell tumors may increase the production and release of hormones such as estradiol, progesterone and a-inhibin (Pluhar et al., 1995). Sex chord stromal tumors tend to be benign in horses or cows but may have a malignant character in dogs (Maclachlan and Kennedy, 2002; Zanghi et al., 2007). Prolonged estrus cycle caused by estrus cycle disorder due to most ovarian tumors may cause pyometra in dogs. This study aims to macroscopically and histopatologically identify the ovary and uterus of a 7 year old Belgian Malinois which was removed in ovariohysterectomy that was brought to Ondokuz Mayıs University, Faculty of Veterinary Medicine, Department of Gynaecology. The patient was brought to the clinic due to anorexia, lethargy and abdominal distension. Patient history of the dog revealed the last PR oestrus was 2 months ago and mucous membranes were normal, capillary refill time was 2 seconds, submandibular lymph nodes were enlarged, dehyration ratio was 4-6%, heart rate was 144/min, respiratory rate was 60/min and body temperature was 39,6oC in the physical examination. The patient's WBC (36.69 10^9/L), neutrophil (30.04 10^9/L) and monocyte (3.54 10^9/L) counts were greater than normal reference values. Reproductive ultrasonography showed anechoic regions in the uterus and heterogenous mass in line with the left ovary caudal to the left kidney. The patient was diagnosed as close cervix pyometra and prepared for surgery. Prior to the operation, the patient's general condition was supported. The reproductive organs' shape and size were found to be abnormal during the median laparotomy. The uterine horns were seen to be cystic, engorged and enlarged. The right ovary had its normal shape and size. However, a solid mass, which was attached to the uterus and large enough to be covered with both hands was detected. Since no ovarian structures could be seen in this region, the mass was assumed to be the pathological ovary. After the explorations, ovariohysterectomy was performed to remove ovaries and uterus. During the post operative evaluation the left uterine horn was measured to be 17.6 cm long and 4.5cm wide the left horn measured 17.6cm long and 3.2cm wide and the mass at the left ovary was 12x18x8cm3 in volume. Tissues were sent for histopathological evaluation in 10% buffered formalin solution. After routine tissue processing, Hematoxylene&Eozin sections were evaluated by histochemical staining. The histopathologic evaluation showed neoplastic cells with mostly follicular characteristics. These neoplastic cells had vacuolar cytoplasms and round hyperchromic nuclei. At some regions, eosinophyllic liquid filled gaps, which are called Call-Exner Particles, were detected between granulosa cells. After the treatment, it was learned that the patient lived for a year without significant health problems and died for another reason. This case shows that granulosa cell tumors should be taken into consideration in the etiology of KEH-pyometra cases due to estrogen and progesterone secreted.

Keywords: Canine; CEH-Pyometra complex; Granulosa cell tumour; Ovary

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Turkish Small Animal Veterinary Association
14 International Continuing Education Congress
8-9-10 NOVEMBER 2019
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PS15

Corneal Perforation and Iris Prolapse in a Persian Cat

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Abstract

A Persian cat which is two years old, vaccined, uncastred, has visited our clinic with complaint of loss of vision and an ocular discharge. According to anamnesis, the patient's eye problem started 15 days ago and was treated in different clinics. Clinical examination revealed corneal perforation in the left eye and iris prolapse from the perforated area, while uveitis was noted. Any foreign matter was found. Amoxicillin+clavulanic acid has been systematically used for 10 days in treatment. Ofloxacin, acetylcysteine and cyclopentolate drops have been started and elizabethan collar was applied during treatment. Patient was operated on the 5th day of medical treatment. The incarcerated part of the iris has excised carefully with surgical intervention. Corneal suture was not applied due to the wide area of perforations and its fragility. Third eyelid flap reconstructed after the excision. On the 10th postoperative day, the third eyelid flap was opened, and the treatment was continued for 2 weeks with the same drops. While reducing other drops in the third week, hyaluronic acid drops treatment has been continued. Significant improvement in eye lesions was noted during this process, and visual loss of vision disappeared. Corneal perforation is formed by the destruction of all layers of the cornea. Perforation is usually caused by progressive deep corneal ulcers or penetrating traumas. The humor aqueous flows with perforation and even the iris prolapse is shaped. The prolapsed iris becomes edema, gets mucoid appearance and sticks to cornea in a short span of time. Prolapsed iris is covered by fibrous membrane in the process of time. Applying suture to cornea rarely occurs in such cases. In this study, eye lesions were evaluated in a cat with corneal perforation and iris prolapse and the results of treatment were shared with our colleagues.

Keywords: cat, corneal perforation, iris prolapse

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Turkish Small Animal Veterinary Association
14 International Continuing Education Congress
8-9-10 NOVEMBER 2019
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PS16

Ehlers Danlos Syndrome in a Kangal Breed Puppy

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Abstract

A Kangal breed, 1,5 month-old, male dog was presented with the complaints of spontaneous skin lesions on lateral left hindlimb and different location of body. In general examination, the dog had lymphadenopathy on submabdibular and popliteal lenf nodules, but the other parametres were normal. At inspection, the dog was lateral recumbence and a ulserative skin wound was seen on lateral side of tarsal joints. There was also a right eye microphthalmia and bragnathia inferior. In addition, there were foldings on extremity skins, swellings with diffuse fluctuation in both hindlimbs and prolapsing in dorsally pelvis skin. In the palpation, hipermobility and laxity of tarsal and carpal joints, general skin hiperextensibility and fragility was determined. Radiological examination revealed bilaterally tarsal and carpal joints space widened. In ultrasonographic examination of fluctuation regions, with unclear limits, anechoic and some corpuscular hiperreflective particles in heterogeneous areas was detected. Skin extensibility index rate was found as %21(dog normal SEI- Skin Extensibility Index rate %8-15). Histologically, it was identified that epidermis and dermis thickness were markedley diminished, dermal collagen fibers was indicated characteristic of thin and pale staining, irregularly organized and the spaces between fibers was increased. The dog owner was informed about the pathology that there was no therapy for the disease, but consistent medical applications could allow to live long lives for the puppy. Reporting to clinical and histopathological findings of Ehler Danlos syndrome in a Kangal breed puppy was aimed with the case.

Keywords: Puppy, Ehler Danlos syndrome, Skin hiperextensibility, Joint laxity.

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Turkish Small Animal Veterinary Association
14 International Continuing Education Congress
8-9-10 NOVEMBER 2019
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PS17

Eyeworm Infection (Thelaziosis) in a Dog: A New Threat for Dogs in Turkey

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Clubvet Madenler Mahallesi. Palandöken Cad. Yeni Şenocak Sit A Blok No :3/A Ümraniye İstanbul, TURKEY

Abstract

Introduction: Canine thelaziosis caused by Thelazia callipaeda also referred to as 'the oriental eye worm' is increasingly common in Europe and infects dogs, cats, foxes, rabbits, and humans. Adult T callipaeda reside in the eyes and associated tissues. infected animals show a variety of clinical presentations, from subclinical carriage through to mild (eg, epiphora, conjunctivitis and chemosis) and severe pathology including corneal ulceration.
Case: A 15 months-old male Sıvas Kangal (50 kg) suffering from redness and conjunctivitis of both eyes presented to Clubvet/Istanbul on August 13, 2019. On clinical examination worms were detected on the conjunctiva of both eyes. Following sedation with xylasine intravenously (1 mg/kg body weight Rompun %2, 25 ml, Bayer) approximately 100 nematodes were manually recovered from beneath the nictitating membrane and conjunctival sac. Irrigation with %2-3 boric acid had been applied. Five nematodes were placed in a 10 per cent formalin solution and submitted to Merkez Lab for identification. A dose of 0.6 mg/kg of Ivermectin given subcutaneously (Avromec, Topkim), weekly for 3 weeks. A course of topical ofloxacin, one drop four times daily, (Exocin % 0.3 eye drops 5 ml, Allergan) and hyaluronic acid, one drop four times daily and oral meloxicam once daily (Boehringer) was prescribed and continued for a further seven days. Re-examination on 21 days post-treatment showed a significant improvement in ocular comfort with a regular blink rate and lack of ocular discharge. No further worms were identified by examination or flushing of the eyes or nasolacrimal ducts. No further problems have been reported since.
In conclusion, this canine ocular thelaziosis demonstrate the potential risks posed to the canine population in Turkey from infection with T callipaeda. Although effective diagnostic tests and treatments are available, more should be done to prevent this zoonotic pathogen from becoming endemic in Turkey.

Keywords: Dog, Ocular thelaziasis, Thelazia callipaeda, Sivas Kangal

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Determining the optimal time of mating in bitches

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Abstract

The planning of mating time by timing the day of ovulation in the breeding bitch is important particularly because mating with the stud dog only once or doing an artificial insemination especially when using frozen semen. Clinical signs (vulvar edema, colour of vulvar discharge) or clinical techniques (vaginal cytology, vaginal endoscopy) are not accurately detect the ovulation time in bitches. Hormone assays (luteinizan hormone-LH, progesterone-P4) are commonly used to assess ovulation timing and therefore breeding time in the bitch. LH is secreted from pituitary gland and it reaches its peak level in the blood stream 48 hours before the ovulation. Increased LH level is used as a predictor of ovulation in bitches but this increase only lasts about 24-48 hours. For this reason, to detect LH increase there is a need for frequent blood sampling every 12 hours and this increases the costs. Oocyte is ovulated as a primary oocyte in bitches it need some maturation to become a secondary oocyte. The optimal time for fertilization 2-4 days after ovulation, when the oocytes are fully mature. If the availability of stud dog is limited or AI is intended the bitch should be bred 5th or 6th days after ovulation detection. Slight increase in P4 level after LH peak may lead to false ovulation timing in some bitches and should not be used. P4 test is a practical method for ovulation timing in the bitch whatever the breed. Ovarian granulosa cells initially secrete oestrogen after than starts to produce P4 with the pre-ovulatory LH peak. P4 level is 2.0 ng/mL and it reaches to 6.0 ng/mL during LH peak during ovulation. P4 assays fairly reliable to assess ovulation timing in bitches. This test can also be reliably used when the bitch in silent heat or do not pay attention to male dog. Other than LH and P4 tests, transabdominal ultrasonography and vaginal mucus crystallisation are other options for determining fertilization time in bitches.

Keywords: dog, breeding, ovulation, progesterone

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Chemotheraphy and Chemosensitivity Test in Canine Mammary Tumors

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Abstract

Canine mammary tumors are treated mainly by operation, radiotherapy, chemotherapy and immunotherapy. Malignant tumor cells tend to metastasize to regional lymph nodes and / or distant tissues by lymphatics. In many cases, micrometastases have already been formed by the time of mastectomy, and in this case the operation alone will not interfere with the progression of the disease. It has been reported that operative administration will be easier with preoperative chemotherapy. Postoperative chemotherapy is a powerful adjunctive treatment that can improve disease-free survival and quality of life by controlling distant spread of the disease. There are many chemotherapeutics applied as adjuvant treatment in canine mammary tumors. It is possible to benefit from chemotherapy in dogs with mammary tumors by evaluating the general condition of the dog, correct histopathological diagnosis, selection of appropriate chemotherapeutic drug and appropriate dosing. However, different results were obtained regarding tumor regression and disease-free survival in different patients with the same histopathology tumor after the same chemotherapy protocols. One of the reasons why today's success in cancer treatment is not increasing very well despite the introduction of many new cancer drugs is the possibility of this different response. This demonstrates the necessity of individual treatment in cancer patients. Each cancer patient is different from one another at the molecular level. It is possible to determine the response of the patient's tissue to chemotherapy by using ATP-tumor chemosensitivity test in laboratory. Quantitative testing of the cytotoxic potential of chemotherapeutic agents applied to cells obtained from canine mammary tumor tissues will be able to develop individualized treatment methods. In this presentation, the chemotherapeutic agents used so far in canine mammary tumors, the use of chemosensitivity test in canine mammary tumors and the points to be considered in chemotherapy applications are mentioned.

Keywords: Canine, mammary tumor, micrometastases, chemosensitivity test

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

A new era under dermatology in small animal veterinary medicine:'gut-brain-skin axis' I-II

Kerem URAL
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Abstract

Given developing data and knowledge everyday, science related novelty within the Veterinary Internal Medicine shine like a star. A star is born; immunostimulation via probiotherapy and/or fecal microbiota transplantation. As an important component of the latter branch, Veterinary Dermatology has changed within the last 10 years and shifted to another West side of the story. Understanding gut-brain-skin axis, our mind has been shifted to determine gastroenterology and dermatology is somewhat like famous twosomes such as 'Blues brothers' or 'Metin Akpınar-Zeki Alasya'. The gut and skin, as an important components of gastroenterology and dermatology, highl vascularized and entirely innervated organs with neuroendocrine and immune participation, are aberrantly in association with purpose and function. Both organs are crucial for maintaining physiological homeostasis. Available data presented closely acquainted, bifacial relationship between the gut and skin. Apart from several research possessing a link for gastrointestinal health to skin homeostasis/allostasis. Gastrointestinal and dermatological disorders are interlocked, oftenly allergy, histamin intolerance and gastrointestinal signs are accompanied by cutaneous manifestations, in relation with the gut microbiome. In this presentation the gut microbiome's contribution to gastrointestinal and skin disorders along with pathogenesis (i.e. gut-brain- skin axis) intestinal barrier functioning, leaky gut, disbiosis and unbalanced microbiota), analytic methodology (16 s rRna analysis, significance of phylum, class, order, family, genus detection to those of gut microbiota), , treatment options will be discussed. Interestingly the participation of fecal microbiota transplantation and altered calendar probiotic treatment will be discussed in detail. The author (from his large archive) will be presenting case series of atopic dermatitis along with pruritic dermatoses, which were succesfully treated.

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Invited presentation

Understanding the fluid therapy essentials

Lora Koenhemsi

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Abstract

Fluid therapy is important in the treatment of many medical conditions in medicine. Normal cellular function can be impaired without water and potentially lead to patient death. Therefore, the veterinarian should have extensive knowledge of fluid therapy. Fluid therapy in clinical medicine is used to fulfill the following objectives: (1) to replace dehydration deficits, (2) to maintain normal hydration, (3) to replace essential electrolytes and nutrients, and (4) to serve as a vehicle for the infusions of certain intravenous medications. A fluid therapy plan should be individualized for each small animal patient and constantly re -evaluated and reformulated according to changes in status. The aims of this speech are to help the small animal clinician determine the therapy goals, selecting appropriate fluids and rates of administration, and assessing patient response to the treatment.

.

Keywords: fluid therapy, dehydration, small animal

International VETEXPO-2019 Veterinary Sciences Congress
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Invited presentation

Anesthesia in emergency cases

Özlem Güzel
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Abstract

It is important that planning the intervention process, provide maintenance and proper use of the resources in emergency approach to a patient. It is also important the emergency team to do proper task sharing, evaluate and treat the patient as fast as possible. When the patient reaches the ER, first thing to do must be evaluate Airway, Breathing, Circulation and Neurologic State. These must be frequently checked while the treatment still continuing. Findings like respiratory rate, hearth rate and cardiac rhythm, blood pressure and quality of pulse, capillary refill time, function of central nervous system and pain gives valuable information about patients status and prognosis. When giving anesthetics to a patient that its general condition is bad, primary goal is while providing analgesia, muscle relaxation and unconsciousness to the patient, also fixing the tissue perfusion and oxygenation of organs, especially the vital ones. The values that are considered normal for healthy patients is creates much higher mortality rate for critical patients. cardiopulmonary collapse and arrest risk is higher in patients that are traumatized and its general condition is bad. If the cardiovascular collapse develops, cardiopulmonary resuscitation is needed. Anesthetics shouldn't be given to the patient unless its vital functions are stable. While anaesthetize a patient, the evaluation needs to be done according to individual needs. Therefore it is not possible to identify a anesthesia protocol that fits all patients.

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Keywords: anesthesia, emergency cases, small animal

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Doctor… Can it see: Cataract and surgery

Murat Şaroğlu
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Abstract

Cataract is the one of the most common causes of the blindness in dogs. In this eye diseases, lens cristalina loss its clarity. Geriatric cataract generally starts after 8 years , and increase slowly. Diabetic cataract has fast maturation and in 6 mounts after diabetic condition, total blindness can be possible. Other causes of the cataract are not rare in dogs (genetic, congenital, seconder cataract). Cataract diseases can be complicate like lens induced uveitis, glaucoma, lens luxation in mature or immature stage. All of this complication, results pain and uncomfortable life. İn some cases, extirpation of the eye unavoidable. Or forexample luxated lenses, intracapsuler extraction of the lens is more complicated, more long and the success rate is low for eyesight. For all of this reason best choice of the cataract management, facoemulcification technique before cataract maturation. Like human ophthalmology after cloudy lens proteins removal, artificial prothesis lens have to put inside of the capsular bag if its technically possible. Preoperative evaluation, patient behaviour, cataract maturation stage, postoperative care are very important for the success rate. Aim of this presentation, understanding of the lens pathologies, importance of the early diagnosis, show effective, fast facoemulcification technique and how can we avoid complications.

Keywords: cataract**,** blindness, eye diseases, small animal

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Invited presentation

Gastroscopy and bronchoscopy in dogs

Kutay Yıldız

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Bogazici University, Center of Life Sciences and Technologies, Vivarium, Executive Veterinarian, Istanbul, Turkey

Abstract

Endoscopic procedures are minimally invasive and very useful diagnostic and therapeutic applications on both human and veterinary medicine practice. Nowadays, especially gastroscopy and bronchoscopy has been used frequently in patients with various conditions. Depending on the tool's size and properties, gastroscopy allows us to observe esophagus, stomach and duodenum in small, medium and large dog breeds. Bronchoscopy is mostly used for diagnostic purposes. Diagnostic indications include the evaluation of structural diseases, inflammatory conditions, intraluminal mass, traumatic injuries and foreign bodies. Visualized examination of both upper and lower respiratory system is very helpful for determination of diseases and also therapeutic approach. These techniques also allows us to collect specimens from respiratory and digestive tract without requiring surgical approach. Collected specimens has a great value for diagnosis and better understanding of the pathophysiology of diseases. It also allows us to remove foreign bodies from digestive and respiratory tract with various type of endoscopic tools. Endoscopic techniques requires anesthesia and the choice of anesthetic method is very important for the procedure. The aim of this presentation is to explain indications, advantages and disadvantages and to inform about the manipulation of gastroscopy and bronchoscopy in dogs.

Keywords: gastroscopy, bronchoscopy, dog, veterinary medicine

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VETEXPO-2019 homepage: http://vetexpo.org/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Patella luxations and cruciate ligament ruptures in dog and cats

Kemal Altunatmaz
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Abstract

Problems involving the patella are frequent causes of hind leg lameness in small animals. Patella luxation is the most common problem and 75% occurring medially. Medial luxation most prevalent in small dogs and cats, lateral luxation occurs most frequently in larger breed dogs. This disorder can be either congenital or traumatic. Most patient with patellar luxation have associated musculoskeletal abnormalities. Most affected animals have an intermittent weight-bearing lameness. Diagnosis is primarily based on palpation. Patient with grade I luxation generally show no lameness. Patient with grade II luxation usually have some form of gait disturbance. Chronic grade II patella luxation cause degenerative changes on the joint. Patient with grade III luxation patella is luxated most of time. Lameness varies from an occasional skip to weight-bearing lameness. Patient with grade IV luxation patella is dislocated and not be reduced without surgical intervention. Many operative techniques are used for treatment of patella luxations, such as; tuberal tuberositiy transpositions, medial restraint release, patellar groove deepening, femoral osteotomy-ostectomy, capsuloraphy. Generally, a combination of these techniques is required to achieve intraoperative stability of patella. Cranial or caudal cruciate ligament insufficiency is a leading cause of lameness in the dog. Cranial cruciate ligament rupture most common seen in the dog and caudal cruciate ligament rupture mostly in cats. In untreated cases, degeneration of stifle joints would start in a few weeks which may turn into serious degeneration cases like fibrosis, meniscal lesions, periarticular osteophytosis and articular lesions in a few months. Caudal cruciate ligament rupture is rarely seen and mostly occurs in cats. There are various surgical approaches for treatment of cranial cruciate ligament ruptures in dogs. Tibial Plateau Leveling Osteotomy (TPLO) and the Tibial Tuberosity Advancement (TTA) most common used techniques for cranial cruciate ligament rupture treatment.

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Keywords: Patella luxations, cruciate ligament rupture

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Developmental diseases in dogs

Didar Aydın Kaya
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Abstract

Developmental diseases are one of the main reasons of pain and lameness in young dogs. Diseases that develops spontaneously and their etiology is unlighted are usually include pair of joints and or bones. This diseases cause structural changes in the extremities and uncomfortable experience of living for animals. The treatment to these diseases can be medical or surgical. Most of the affected dogs are fast growing and large breed. The pathologies that likely to be seen are craniomandibular osteopathy, hypertrophic osteodystrophy/ hypertrophic ostheopathy, Legg-Calve Perthés (avascular necrosis of the femoral head/ aseptic necrosis), panosteoitis, ostheochondrosis/ ostheochondrosis dissecans, elbow displasia (medial coronoid disease, ununited anconeal process, joint incompatibility), carpal laxity syndrome, delayed endochondral ossification. Basically; Radiography and CT, MRI or scintigraphy (scanning of the bones) can be used for diagnosis of developmental orthopedic diseases. Etiology, pathophysiology and progressions needs to be well understood for proper medical or surgical treatment of this developmental orthopedic diseases.

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Keywords: lameness, dog, developmental diseases, orthopedic diseases

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Are there any clues for lesion localisation in neurologic disorders?

Ebru Eravcı Yalın
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Abstract

The main component of a neurologic examination are evaluation of mental status and behavioral changes, posture and gait analysis, postural reactions, cranial nerve examination, pelvic and thoracic limbs reflexes and paravertebral palpation, palpating muscle tone and muscle atrophy, cutaneus trunci reflex and nociception testing, urinary bladder palpation and perineal reflex. After this neurologic examination we can localize the neurologic lesion by using our neuroanatomy knowledge. For diagnosing and localisation the neurologic lesion, we do not need a deep neuroanatomic knowledge and to perform every step of the neurological examination. To know clinical signs are observed when spesific regions of the nervous system are affected is sufficient for us. Differentiating the presence of the forebrain lesion in a large circling dog, and the vestibular lesion in a small circling dog, diagnosing a neck or back lesion according to posture of the patient and making a localisation for spinal cord lesion with only patellar reflex and withdrawal reflex, are possible with functional neuroanatomy knowledge.

Keywords: neurologic examination, withdrawal reflex, gait analysis, cat, dog

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September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

First ten diagnoses in neurology clinic

Ebru Eravcı Yalın
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Abstract

There are many conditions that causes neurologic dysfunction in cats and dogs. The 10 most common neurological conditions, are examined at Istanbul University Veterinary Faculty Surgery Department in the last three months, will be shared in general terms. Traumatic medulla spinalis injury, vertebral luxation and fracture, intervertebral disc diseases, hydrocephalus are the most common conditions. Vertebral fracture and luxation may cause spinal cord signs ranging from only pain only to paralysis. Surgical stabilization is recommended for unstable patients. Intervertebral disc disease are the most common in dogs, disc protrusion, extrusion and more conditions is includes. Hydrocephalus is termed accumulation of cerebrospinal fluid (CSF) in ventricular system and subarachnoid space due to a mismatch between production and absorption of CSF. Ventriculoperitoneal shunting is most common surgery technique of treatment of hydrocephalus.

Keywords: neurologic dysfunction, hydrocephalus, cat, dog,

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September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Livestock policies, production and future of red meat

Engin Sakarya, Arzu Gökdai, Tuğba Sarıhan Şahin

University of Ankara, Faculty of Veterinary Medicine, Department of Animal Health Economics and Management, Ankara,Turkey

Abstract

Implementation of policies aimed at agriculture and animal husbandry, agricultural supports are used as an important tool. Since the proclamation of the Republic, livestock sector of Turkey has entered into a number of changes and improvements. The data used in this study were collected from Turkey Statistical Institute (TUIK), reports of drafting convention in sector, the five-year development plans and literature. It has been determined that there is not enough share from the subsidies within the agricultural policies applied in the livestock sector in terms of periods. Support for the sector was also insufficient in terms of credit and financing supply in animal husbandry. It was observed that there was no significant development in animal production in planned development periods. In macroeconomic planning of the sector, input-output relationship could not be considered on a sectoral basis according to the development goals. It has been seen that technical and economic integration such as health, breeding, production, cultivation, fattening and product evaluation is not taken into consideration adequately in planning. Today, the most important problem of the sector is high quality, sufficient roughage and concentrate feed and low yield per unit animal. However, real policy in supporting livestock should ensure that product / feed price ratios to maintain profitability in production. In order to achieve a certain increase in animal production, the support provided by the state and the price policy are important. Price policy has an important share in increasing production both in quantity and quality. The enterprises operating in animal husbandry are under the economic grip of the sellers and buyers, who are limited in number during the production stage. In this respect, the organization of the producer and the development of the marketing infrastructure, support and encouragement by the state may play an important role in solving the problems.

Keywords: Livestock, red meat, production

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Factors that increase the chance of pregnancy in artificial insemination applications in cattle.

Serhat Alkan

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Abstract

Postpartum reproductive problems in dairy cattle are the leading factors causing infertility and serious economic losses. The first aim of the dairy cattle management is to maintain a healthy puerperal period and to have the cow cyclic again at the optimal time and achieve pregnancy. This is the first requisite for a desired reproductive efficiency level. Puerperal endometritis is a serious cause of repeat breeder, acyclic and anoestrous cows, thus, deteriorating reproductive efficiency. Studies have shown that, puerperal endometritis rate in dairy cattle farms is between 10-80 %. Puerperal endometritis causes the postpartum luteal activity to longen , delays cyclic activity, the first oestrus and the first insemination after delivery and pregnancy. The principal of the therapy for the puerperal endometritis is to fasten the involution and clean up the infection. For this: -Antibiotics-Antiseptics-Hormones are used widely. In this study, a more practical administration was tried to be added to the treatment procedures of puerperal uterine infections. These treatment procedures include administration of iodine to the uterus 1 or 2 times depending upon the severity of the case and then synchronization by Doublesynch protocol. According to these treatment protocols every administration is given with 5 days intervals and the Doublesynch is started with a further 5 days interval. In order to minimize the time loss thanks to these intervals between treatments, the Doublesynch protocol is combined with the last iodine solution. This new administration route is then called the Lugovsynch protocol

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Keywords: Cattle, infertility, Doublesynch protocol, Lugovsynch protocol

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Management of the infertility in dairy cattle

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Abstract

Despite the increase in milk yield in dairy cows, pregnancy rates have decreased by approximately 1% per year in the last 25 years. The regular annual downward trend in conception rates has been steady in recent years. Improvements in genetic tendencies for fertility may reverse this situation. For example, the calving interval was shortened and the longevity was increased. Reproductive yield is a key factor in determining profitability in dairy cows. Reproductive management is widely reviewed within the reproductive herd health control program. New methods and technologies are being developed to assist reproductive management. Breeding target for optimum yield in cows; to produce a live calf that gives birth at the right time every year, with the right genetic value and without the problem of dystocia. Infertility is classified as infectious, noninfectious (feeding, stress, genetic factors). Functional and infectious infertility is more common in the cases of infertility. It is important to determine whether infertility is an individual or herd problem. Although the fertility management of dairy cows differs from that of large and small farms, similar procedures are performed as a result. Lack of regular registration system and inaccessibility of data is an obstacle in small farms. Establishing a perfect monitoring system with the registration system in fertility management, realizing a large number of data usage, feeding management, control of infectious diseases, evidence based veterinary medicine, clinical and paraclinical examinations in a reliable and accurate time to quickly determine the reproductive status , herd or individual problems, the use of biotechnological methods such as genomic choice and selection, and fertility improvement programs such as oestrus and ovulation synchronization, pre-synchronization and resynchronization should be implemented. All these initiatives facilitate the implementation of the reproductive herd health management program and produce satisfactory and economic results for veterinarians and farmers. In this presentation titled infertility management in cows, striking sections of the reproductive herd health control program, which has been implemented in dairy cattle enterprises in different regions of our country for approximately 15 years, will be shared.

Keywords: infertility, production, reproductive management, cattle

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Clinical approach to calf diarrhea and treatment principles

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Abstract

The most common causes of death in diarrheic calves are dehydration and acidosis. Treatment of diarrhea in calves is primarily based on correcting the electrolyte, acid-base imbalances, fluid and energy deficits via using of oral and parenteral solutions. Just an oral rehydration therapy is the most effective therapy for mildly or moderately affected diarrheic calves. The best way of treating calves with severe dehydration and acidosis is use of intravenous fluids. Isotonic crystalloids are widely used to treat dehydrated calves with diarrhea. This solutions should be considered to the replacement of interstitial fluid volume. Sodium bicarbonate should be used to in calves with severe metabolic acidosis. Hypertonic crystaloid solutions (e.g., %7.2 hypertonic saline, 4ml/kg, i.v.) are valuable in the initial treatment of endotoxemic calves with diarrhea because of their rapid resuscitative effects. The effects of hypertonic crystaloid solutions can be prolonged by adding colloid solutions (Dextran 70). Administration of colloid solutions causes an increase in plasma volume, which increases the plasma oncotic pressure. Absorption of orally administered fluids can be enhanced by intravenous administration of hypertonic saline-dextran solution. Antibacterials should not be used in calf diarrhea unless indicated. Probiotic and oligosaccharides should be used in calf diarrhea.

Keywords: calf, diarrhea, fluid therapy, metabolic acidosis, antibacterial

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Preventive medicine practices in farm animals

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Abstract

At the top of veterinarians' main tasks comes to treat sick animals. But the main goal is to protect animals from being sick. Preventive medicine practices are much more preliminary in livestock. Vaccination is the first to come to mind in preventive medicine, but preventive medicine practices are not limited to vaccination alone. The main goal in food animals is to keep animals healthy and productive together with the prevention of infectious diseases. If the yield of an animal without any infectious disease is not sufficient, it cannot be mentioned that the animal is healthy. In this sense, subclinical metabolic diseases are more prominent than clinical diseases. One of the most important methods of preventing infectious diseases is vaccination. However, vaccination alone is not the solution and biosecurity measures must be adhered to in farms. In addition to preventing external threats in biosecurity rules, necessary measures should be taken to reduce internal risks. Vaccination should be carried out according to the rules related to the inactive or live vaccine. Despite vaccinations, the greatest losses in farm animals are in newborns. Because ruminants are born hypogamaglobulinemic due to the structure placenta, they are protected by immunoglobulins during the first 1-2 months which they will take with their mother's colostrum. In order to protect neonatal offspring, pregnant cows, sheep and goats are vaccinated, but if the offspring do not get enough colostrum, the vaccine target is not reached and this situation is a big problem in our country. In order for vaccinations to be successful, there must be a separate vaccination program and vaccination schedule for each farm. Another step of preventive medicine practices is quarantine. During epizootics and some zoonotic diseases, quarantine rules must be applied. A more restricted application of preventive medicine practices is metaphylactic practices.

Keywords: farm animals, preventive medicine

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Effect of nutrition on carcass quality and fattening performance

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Abstract

In the beef cattle breeding, carcass quality is a very important place in the terms of consumer. Carcass quality is under the effect of the nutrition. The feeding based on forage can decrease carcass quality. This situation is explained that carcass has high pH value. Carcass darkness appearances sometimes in the herds feeding based on concentrate. This problem could be explained that subclinical rumen acidosis. Applied nutrition programs and feeding methods are another subject affecting the productivity. These programs and methods have advantages or disadvantages according to each other. Nutrition programs are examined as continue intensive nutrition and nutrition with different forage-concentrate ratio. The continued intensive nutrition means that the fattening is conducted thoroughly as based on concentrate. As result of some experiments, it was reported that there was no difference for live weight gain between the programs. The feeding program with different forage-concentrate ratio is preferred due to feedlot economy. Feeding methods go into division as limited feeding and ad libitum feeding. Limited feeding is based on given limited ration to animals. Ad libitum feeding can provide higher live weight gain than the limited feeding.

Keywords: fattening performance, carcass quality, feeding systems

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Intensification in animal production and it's effect on animal welfare

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Abstract

The term "animal welfare" is being used increasingly by politicians, veterinarians, corporations and consumers in last decades. There are three welfare concepts use to define "animal welfare" which are physical (normal health, growth, development, body condition, sustainable productivity), mental (emotions and feelings, especially unpleasant states such as hunger, thirst, discomfort, pain, fear and distress) and natural (to express normal behaviour) aspects. Different specialist define the term "animal welfare" by different view. Scientists working on animal welfare tend to reflect their own views on which aspect is important in their definition of welfare. Basically the mean of animal welfare is the "how an animal copes with the environment that the animals live in". That means condition and quality of animals' life, including husbandry and management, health and disease and behaviour. Different farm animal species are under control of human being for their production traits since domestication. Animal production has raised globally to suffice to increase in the consumption of the animal product. Therefore, in order to obtain a large quantity of animal products such as meat, milk, and eggs, many farm species have been breed in intensive production systems which including large herd size, high stocking density, feeding with high nutrient, limited environmental conditions in shelters and automation control of breeding practice. Modern farming systems or production models focused on high yields and ignore the animals. However, there are plenty of scientific work demonstrated that animals are sentient, capable of suffering and feeling pain. So it is an ethical responsibility to provide their needs to the animals under human care. Animals' hunger, thirst, injury, pain, fear and suffering, which caused by production system, should be minimized to protect animal welfare in the farm. The five freedoms (freedom from hunger and thirst, freedom from discomfort, freedom from pain, injury or disease, freedom to express normal behaviour and freedom from fear and distress) provide a convenient list to protect physiological and behavioural needs of animals. To understand the concerns about the intensification of animal production, firstly we need to understand how intensification affects animals' welfare. Farm animals have been selected by human being ever since their domestication. At first, selection was probably limited to manageability but in the last 200 years breeding programs have focused on the genetic improvement of the production traits. As a result, production traits such as milk yield, growth rate and number of eggs have dramatically increased. On the other hand, the adaptation ability of the animals to the environment decreased, and animals became unable to cope with their environment. These adaptation problems and the intensification in the farming systems have concluded with certain behavioural, immunological and physiological problems in animals and, the level of their welfare has decreased. Nowadays, most problematic farming systems or practices which cause hunger, injury, pain or suffering to farm animals in terms of animal welfare are considered as battery cages for laying hens, broiler rearing, intensive and indoor cattle production, veal crates for calves and, overcrowded environments. The farm animal welfare may be improved by providing good management and stockmanship, food, water, appropriate space allowance and climatic conditions, vaccination and, opportunities to exhibit normal behaviour to animals throughout the whole animal production process. It should not be forgotten that social awareness and consumer demands for welfare-friendly products are the key factors for the improvement of animal welfare in farming systems.

Keywords: animal welfare, behaviour, intensification

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VETEXPO-2019 homepage: http://vetexpo.org/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

The role of domestic animals and shelters in ticks and tick-borne diseases

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Abstract

There are more than 900 globally described tick species and 32 of these have been reported from Turkey, of which are hard ticks of the family Ixodidae with an exception of Argas, Otobius and Ornithodorus species belong to the Argasidae family. Along with the vast density of the tick populations in domestic animals, there is also an intense diversity of the major species towards to the host groups. Majority of the tick species present in the country are found and fed on large animals, mainly ruminants and a few are common on pet animals, mainly dogs. Virtually majority of the ticks found on dogs are Dermacentor marginatus, Ixodes ricinus, Rhipicephalus sanguineus (brown dog ticks) and Haemapysalis spp. with the exception of Dermacentor spp. (in which the immatures infest mainly rodents), all three stages (adult, nymph, larva) of the other common species may infest dogs. All of these tick species have multiple hosts in their life cyle and their biology depends on environmental conditions as well as host suitability. Ticks of economically important animals such as sheep and cattle has a wider variety in terms of genus and species. Boophilus (Rhipicephalus), Dermacentor, Haemapysalis, Hyalomma and Rhipicephalus species are prevalent on farm animals in Turkey. Tick species found in poultry are in soft-ticks group and have a host/pen dependent biology. Among all these species, single, two or three host ticks are present. Related to tick borne infectious diseases, Anaplasma spp., Babesia spp., Borrelia burgdorferi sl. (Lyme), Crimean Congo Hemoragic fever Virus, Ehrlichia phagocytophyla (HGE), Louping ill virus, Rickettsia spp., Theileria spp., Tick Borne Encephalitis Virus have been identified from tick samples in various regions of the country. Although most concern relates to infectious agents, it should be noted that the vast majority of host seeking ticks are not infected. Other than presence of the agents in tick species, their relation with the host and vector, and natural foci of the vector and agents play a crucial role for the emergence of the tick-borne infections. Barns of domestic animals and animal shelters for pets, especially dogs, can be infested by some tick species. Acaricides may reduce the risks of infestation and impair the persistence of tick population, which is important in formation of natural foci of infections. Identification of the tick species is important for the type and timing of the acaricide applications. Regular and systematic control of the animals and housing is essential for detection of timely and actual risks for animal health and tick-borne diseases as well.

Keywords: tick, shelters, tick-borne diseases, domestic animals

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VETEXPO-2019 homepage: http://vetexpo.org/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Etiology of bovine lameness (stall design management and subacut ruminal acidosis)

Serhat Özsoy

Abstract

Dairy producers are faced with a bewildering range of recommendation concerning suitable dimensions and surfaces for free stalls. Some authors recommend sand bedding, while many farmers still use sawdust or straw. Bedding choices may affect not only cow comfort but also udder health . Cow preferred to lie down in the stalls bedded with mattresses and sawdust and were least likely to use the concrete stalls with paper. Cows were more likely to lie down in stalls when these had more bedding , regardless of whether the stall base was concrete, mat or carpet. Lameness is probably the most important animal welfare issue today in dairy herds and a good partion of the lameness observed in dairy cows may be attributed to laminitis secondary to high grain feeding. Ruminal acidosis can be direct human health concern as well. Low ruminal and intestinal pH due to high grain feeding increases the risk shedding enterohemoragic E. coli. Compromises in dairy cow health due to subacute ruminal acidosis (SARA) are a concern not only for economic reasons but also for animal welfare reasons. Rumenitis is the fundamental lesion of SARA and it leads to delayed , chronic health problems. Once the ruminal epithelium is inflamed bacteria may colonize the papillae and leak into portal circulation . These bacteria may cause liver abscesses, which sometimes cause peritonitis around site of the absce**ss.** If the ruminal bacteria clear the liver, they may colonize the lungs, heart valves, kidneys or joints. SARA may also be associated with laminitis and subsequent hoof overgrowth, sole abscesses and sole ulcers .These foot problems generally do not appear until weeks or months after the bout of ruminal acidosis that caused them.

Keywords: lameness, cattle, subacute ruminal acidosis

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Sustainable rumen health in dairy cattle

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Abstract

A primary condition for successful production, optimal ruminal health requires an optimum pH and high bacterial count in the rumen. Indicators of optimal rumen health are a physiological ruminal pH (pH 5.8-6.8) and high commensal bacteria count that result in high microbial protein production. Securing optimal rumen health leads to higher digestibility and feed intake. Improved ruminal health and fermentations will be reflected not just in improved milk yield, but also in better general health and reproduction, with a positive impact on the cow's lifespan and productivity. This review provides insights into the role of and gives practical hints regarding diet balancing efforts and feeding management strategies targeting rumen health and cow health.

Keywords: rumen health, dairy cattle, feeding management strategies, ration

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Timed artificial insemination in dairy cattle

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Abstract

Intensive genetic selection for milk production without attention to reproductive performance has contributed to an inverse relationship between milk production and reproduction. Therefore, estrus detection and animal identification have become increasingly difficult in dairy herds because of rising herd size and milk production. Poor estrus detection and low fertility to insemination at a detected estrus are severe problems for dairy farms. The increasing size of herds necessitated the development of more systematic programs for the management of reproduction. Because of the impact of high milk production on reduced expression of estrus, timed artificial insemination (TAI) has become an important component of management of reproduction in high-producing herds. With the use of TAI, the average calving interval in USA has been reduced by 21 days over the last decade without any decrease in pregnancy rate per AI. Over the past 20 years, numerous fixed-time AI programs have been developed. However, a TAI protocol has not yet been developed that can be successfully implemented in all dairy farms. Many physiologic, nutritional, cow comfort, and health issues can affect the success of these programs. Matching the use of TAI programs with the farm conditions, goals and staff structure is probably most critical for success of these protocols on specific dairy farms. It is much more useful for Veterinarians to learn the conditions for the success of these synchronization programs, that is to learn the logic of TAI, instead of memorizing and practicing of developed synchronization programs. Therefore, the factors affecting pregnancy rates of TAI programs will be summarized in this presentation.

Keywords: dairy cattle, ovulation synchronization, timed insemination

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Udder health in dairy cows and milking parlour management

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Abstract

The milking parlour is the round about of the dairy farm: it is a very important traffic junction and an obligatory passage. Moving smoothly if well managed every day. The cows enter the milking parlour two or three times to be milked. The milking parlour is the place where the farmer obtains the milk, the end-product of the dairy farm. Adapted to the cows, the milking parlour is a tool to optimise milk production. Adapted to people, the milking parlour is an easy place to manage, and a pleasant working environment for milkers. Profitability is directly related to this cornerstone of each dairy farm. Efficacy and quality of production depends on good milking practice: Milking efficiency is influenced by time management. Milk quality is influenced by hygiene during milking and by the hygiene of the milking units and pipelines. First, this presentation will look at the risks associated with poor parlour hygiene and management, then the need to satisfy will be detailed and, finally, how to organize and optimize the milking routine to increase profitability of the dairy farm will be considered. Also, in this presentation; milking operations, milking management, milking protocols in dairy cows, milkers and their continuing educations, milking responsibilities, technical team, management of milking machines, energy costs are given in detail. Almost every topic related to milking parlor and milking is mentioned and detailed figures are given for use when necessary.

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Keywords: cataract**,** blindness, eye diseases, small animal

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Clostridial infections and malign edema in farm animals

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Abstract

Clostridial infections usually occur in herbivores, especially in ruminants, as well as in carnivores and humans. There are many subtypes of the bacteria. Although they usually cause enteritis in ruminants, they give rise to fatal infections in the brain, kidneys and muscle tissue. Among Clostridium species, *Clostridium* (Cl.) *perfringens* are classified according to four major antigenic lethal exotoxins. The major toxin of *Cl. perfringens type A* is the alpha toxin. *Cl. perfingens A* causes gas gangrene with other clostridial agents. In type A infections, acute intravascular hemolysis is rarely seen in calves and lambs. Animals are often found dead or in coma. Jaundice and hemoglobinuria are seen in clinical findings. *Cl.* perfringens type B is the causative agent of lamb dysentery. Mesenteric torsion and hemorrhagic enteritis are the most typical findings found in necropsy. *Cl. perfringens* type C leads to enterotoxaemia known as "struck" in adult sheep. In necropsy, a large amount of clear, pale, yellow, coagulated fluid and subperitoneal bleeding are found in the abdominal cavity. *Cl. perfringens* with type D toxin (epsilon) causes enterotoxaemia in sheep and goats. Epsilon toxin is secreted from the intestines, but it acts on the brain and kidneys. It causes pulpy kidney and focal symmetric encephalomalacia in the brain. *Cl. difficile* A toxin causes acute hemorrhagic and necrotic enteritis in horses and humans. Enterotoxemia is usually seen in lambs that are in good body condition and grazing on pasture in spring. The disease occurs as a result of reduced intestinal peristalsis and the release of excessively fed animals with grains or concentrated forage into the pasture. Reduced intestinal peristalsis leads to hypo-mobility, which prevents the transportation of the bacteria to the colon and results in the multiplication of the bacteria in the intestine. Excessive grain or concentrated forage intake leads to high accumulation of the starch in the intestine. High levels of starch provide a favorable environment for the multiplication of saccharolytic bacteria and toxin production. Clostridial infection in muscles take the most important second place, following the clostridial infections in gastrointestinal system. Here, the most important agent is *Clostridium chauvoei*, which is the agent of the disease "blackleg". *Cl. septicum*, *Cl. perfringes, Cl. novyi*, *Cl. sordelli* and *Cl. chauvoei* cause emphysematous gangrene and malign edema alone or with clostridial bacteria. Malign edema includes some cases of the clostridial myositis, in which emphysematous gangrene does not occur. In animals, gangrenous myositis is more common than non-gangrenous myositis. Malign edema is actually typical cellulitis rather than myositis and has a high mortality rate (death in 48 h), but even in toxigenic infection, muscle damage may not be significant. The reasons of the occurrence of infection are traumas, intra-muscular injections (vaccines), injuries to female genitalia during parturition, castration, shearing and the sectioning of tail. In rams, the wounds occur on the top of the head during fighting (big head- swelled head). Among these infections, malign edema causes difficulties being recognized by the veterinarians working in the field because of the special findings of the disease. Therefore, it is aimed to present and compare the general features of the cases with clostridial infections and malign edema.

Keywords: clostridia, farm animals, edema

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Immobilisation and transport of exotic and wild animals

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Abstract

The safety of the patient animal and the person holding it is very important. Safety must be at the forefront for both the animal and the person holding it. During the intervention, the patient bird should be treated very gently to avoid trauma to the bones or soft tissues of it. The most important point to keep in mind that when handling a wild animal stress must be avoided as much as possible. While the claws of birds of prey are more dangerous than their beaks; beaks of herons, and the teeth and horns of mammals may pose a risk to the person holding . Towels and similar materials are very useful for keeping and controlling animals. Catching many animals, especially birds, with the help of towels will both limit the movement of the animal and reduce stress. To capture much more effort and equipment is required. Capturing species such as wolves, foxes, badgers, roe deer, deer and wild goats is very risky and requires advanced attention and technical knowledge. Although the fox is quite prone to bite, it doesn't express that it is going to bite like a dog before it bites. The equipment used to hold a fox safely is the same as that used for dogs. For this purpose the a proper net can be used, but the lock mechanism easy-opening dog catch clamp is also a secure holding tool. It is useful to use a sturdy glove when doing all these. Anesthetic or sedation can be applied to the fox placed in the cage. In wolves, as for foxes, the dog catcher can be used. The behavior of individuals in the family of felines also varies considerably from each other. Generally the most irritable and aggressive felines are some of the small ones. The most appropriate catch method for a cat of the size of a wildcat is to lay a net or use a fishing bucket. Holding, restraining and transplanting of ungulates such as roe deer, deer, wild goat and wild sheep are much more complicated than other species. In order to catch ungulates, injectors (darts) containing anesthetic substances and projectors or blowing pipes which deliver injectors to the animals are used. There are some considerations in the use of these materials. Many anesthetics act in a matter of minutes, during this time the injured but moving deer may continue to escape and may not be found again. It may be fatal for the animal if it goes under the influence of anesthesia in a place out of sight. Antlers provide easy control of the head when capturing the deer. It is necessary to tie the eyes of the animal with a clean cloth before performing all these interventions.

Keywords: wild animal, transportation, exotic animal

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VETEXPO-2019 homepage: http://vetexpo.org/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Doctor, what is it? Internal Diseases of Green iguanas

Lora Koenhemsi

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Abstract

In recent years, we have encountered more exotic animals in our clinics. The one of the most common of these animals are reptiles. They are herbivorous reptile that native to Central and South America. The most important predisposing factor is the husbandry and the management of these animals. If a green iguana stays in poor care conditions, the immune system will deteriorate and diseases will occur. Therefore, in order to diagnose the diseases more easily, it is very important to learn about the animal's conditions of care at first. Diagnostic methods include physical examination, routine blood tests (hemogram and biochemical parameters), imaging diagnostic methods (radiology, ultrasonography, endoscopy, tomography, MR). Parasitological and microbiological investigations may also be included in cases where necessary. In this speech, diagnosis and treatment of common diseases in this animals that brought to our faculty clinic will be discussed.

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Clinical approach to hedgehogs

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Abstract

At spring and summer time, while it's getting dark, the wild hedgehogs come out of their nests. They eat a wide range of insects. Clever hedgehogs may visit free cat food areas. They come back home in the early hours of the morning. If any hedgehog is seen at day time, walking slowly or lying at the garden, it may be assumed that this one is ill and should be brought to the veterinarian immediately. For a long time, African Pygmy Hedgehogs have become exotic pets at Turkey. In recent years, hoglets, sick and old hedgehogs in the streets, gardens and forests along the roadside have been brought to the clinics as well as domestic animals. This forces our colleagues to know more about hedgehogs. At our presentation, we are going to focus on most seen species at clinics, 2 wild species Eastern European Hedgehog (*Erinaceus concolor*), Long Eared Hedgehog (*Hemiechinus auritus*) and African Pygmy Hedgehog (*Atelerix albiventris*) and colleagues will be informed shortly about their examinations, treatments, how to feed, care and release .

Keywords: hedgehogs, *Hemiechinus auratus, Erinaceus concolor, Atelerix albiventris*

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Infectıous diseases and nutritional deficiency in birds

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Abstract

Mycoplasma infections in poultry are generally more severe then those reported for house finches. The prominent field signs are puffy or swollen eyes and crusty appearing eyelids. Initial field signs observed during a natural outbreak of mycoplasma infection in a back yard gamebird operation included foamy eyes, excessive tearing and severely swollen sinuses. Routine cleaning and disinfection of bird feeders with household bleach is recommended to prevent mycoplasmosis and other diseases that can be transmitted at bird feeders. A 10 percent solution of household bleach applied weekly for feeders with high bird use will reduce the potential for contaminated surfaces to transmit disease. Invarıably birds that have signs of a single nutritional deficiency problem. Calcium and phosphorus should be present in the diet in a 1.5-2: 1 ratio. Seed diets have low calcium and phosphorus levels. Vitamin D precursors are present in vegeterian diets but require metabolism by ultraviolet light to be converted to the usable form vitamin D3 Calcium and vitamin D3 deficiences will lead to egg-binding and osteodystophy in growing and breeding birds unobstructed egg-binding may be relieved by injecting calcium solution or administering it orally. Oxytocin may or may not be useful in these cases, as the bird is more likely to be calcium deficient than oxytocin deficient. Vitamin A is essential for growth, optimum vision and maintaining the integritiy of the mucous membranes. Vitamin A deficiency predisposes to upper respiratory and alimentary tract disease by causing the mucous membrane's simple epithelium to become stratified squamous keratinized epithelium. The keratin plugs the ducts of the mucus secreting and salivary glands, causing pustule formation and even salivary gland abscesses. In breeding birds there is decreased egg hatchability and ın (poultry) chicks it prevents the kidney from excreting uric acid which remains visible in the kidney and ureters (this is commonly seen in post-mortem examination of grey parrots, the most vitamin A deficient birds)

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

The effect of taurine on animal behavior

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Abstract

Taurine (TAU) is an essential or semi-essential amino acid according to the animal species. It has many basic physiological functions such as membrane stabilization, cell signaling, osmoregulation and bile acid conjugation. This review focuses on the behavioral and cognitive effects of taurine in different animal species. Taurine, found in various body tissues, is the most common amino acid after glutamate in the mammalian nervous system. It is especially common in developing brain. It is distributed in the cerebellum, cortex and hippocampus. Studies in rats and zebra fish have shown that taurine is effective in stress-related mechanisms. These effects are induced by inhibiting the hypothalamic-pituitary-adrenal axis (HPA) and activating the glycine receptor. Taurine prevents the reduction of serotonin, dopamine, noradrenaline levels in rats under chronic stress, and prevents excessive release of glutamate and corticosterone. Thus, it has anti-depressive and anxiolytic effects. A study on blue tits revealed that the amount of taurine taken during the growth period shaped long-term adulthood behaviors. It has been observed that offspring develop their spatial / spatial learning abilities and increase their risk-taking potential, especially when researching new objects. A study of zebra fish indicated that taurine use reduces the risk assessment behavior, which is a defense approach. Spatial learning ability and risk-taking tendency are influential on an individual's competitiveness and prey success. As a result, taurine affects the development of brain regions that control the HPA axis. Taurine supplementation enhances hippocampal development and function, which affects stress response and spatial learning. Interacting with learning mechanisms, taurine plays an important role in the formation of behavioral phenotypes of offspring. In the light of all this information, there is almost no scientific study on how taurine, which is widely used as a nutritional supplement in cat and dog nutrition, affects the behavior in these animals. Because of the cognitive and behavioral effects mentioned above, taurine is thought to play an active role in cat and dog breeding and training. Further research is needed to prevent depression and anxiety in pet animals.

Keywords: HPA axis, stress, early nutrition, risk-taking behavior, spatial learning

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Introduction

Taurine, 2-aminoethylsulfonic acid, is produced mainly in the kidneys and liver (Karan, 1991). It is found in many other cells and tissues, including the brain, retina, heart, placenta, leukocytes and muscle (Jakaria et al., 2019). Taurine is a very important factor in various physiological processes such as brain development, neuroprotection, optic and immune systems, osmotic regulation, reproduction, stabilization of membranes and heart muscle regulation (Yeon and Kim, 2010; Park et al., 2014).

Taurine is the second most abundant amino acid in the brain after glutamate (Huxtable, 1989). TAU is common especially in developing brain (Magnusson, 1996). High taurine levels are found in the cerebral cortical regions, the hippocampus, and the cerebellum. (Jacobsen and Smith, 1968). TAU easily crosses the blood brain barrier via the taurine transporter (TAUT), commonly expressed in the central nervous system (Benrabh et al., 1995).

Milk contains taurine, and milk taurine is known to be necessary for the normal development of offspring. Taurine is considered essential in the early stages of growth; taurine deficiency in cats (Sturman, 1991), rodents (Sharma et al.,1995) and humans (Jung and Choi, 2019) were associated with lower body weights. Taurine deficiency is also associated with many neuropathological conditions such as developmental abnormalities for eyes and brain (Aerts and Assche, 2005). It is also essential to maintain normal retina (Knopf et al.,1978) and ERG function, especially in cats (Wang et al., 2017).

Taurine has been associated with growth factors such as brain-derived nerve growth factors that are related to neural plasticity (Trenkner et al., 1996). The maintenance of the proliferation and differentiation of neural stem cells are some of the crucial functions of taurine, effecting the neural physiology (Li et al., 2016). Taurine plays an essential role in modulating neurotransmission of glutamate and GABA and prevent in vitro excitotoxicity through regulation of intracellular calcium homeostasis (Louzada et al., 2004; Jakaria et al., 2019).

Taurine supplementation prevents the age-related decline of cognitive functions (Idrissi, 2019). It has been reported that taurine increased cognitive deficits in experimental demented mice to the level of normal age-matched mice but did not alter the behavior of cognitively normal mice (Kim et al., 2014).

Taurine increases the learning ability and memory; it can improve the performance of animals in memory tasks, increase exploration efficiency, and interfere with the apoptosis and neurodegeneration process (Rahmeier et al., 2016). In addition, taurine was found to have antidepressant activity and it has been speculated that this activity may be associated with the regulation of the hypothalamic-pituitary-adrenal axis and supporting the formation, survival, and growth of neurons in hippocampus (Wu et al.,2017). TAU also regulates complex behaviors such as aggression fear and anxiety, and it permanently changes hippocampal functions (Fontana et al., 2018).

Taurine is an amino acid that has recently attracted attention due to such a wide variety of neurophysiological functions. This review focuses on the behavioral and cognitive effects of taurine in different animal species. Despite taurine has a wide use as a nutritional supplement in the feeding of pet animals, there is limited scientific study focusing on its behavioral effects in these animals. The findings about the effects of taurine on depression and anxiety, make it a prominent research topic regarding the use of taurine in pet animals, especially in the frame of animal welfare.

Taurine and chronic stress-induced depression

Depression caused by chronic stress weakens the neuronal structure and function in the hippocampus. It reduces energy metabolism and brakes the negative feedback system that modulates the accumulation of corticosterone (CORT) in the hippocampus. (Erickson et al., 2003; Anacker, C. et al. 2013). Hippocampus

is the main region in the brain involved in learning, memory and emotion and it is vulnerable to stress. Chronic stress and corticosterone release may develop the accumulation of glutamic acid (Glu) and disrupts the homeostasis of calcium and causes cytotoxic damage in brain tissues (Herbert, J. et al. 2006). Meanwhile, Glu accumulation may activate the HPA axis to secrete more glucocorticoids, and it exacerbates the toxic effects of Glu in the hippocampus (Compere et al., 2005;). Mutations or reductions in monoamine neurotransmitters such as 5-hydroxytryptamine (5-HT), dopamine (DA) and noradrenaline (NE) are associated with depression pathogenesis (Lopez-Munoz et al., 2009). In addition, under stress and depression, the levels of neurotrophic factors that regulate neural proliferation in the hippocampus (such as BDNF, FGF-2 and VEGF) have been found to be decreased (Bland et al., 2007; Elfving et al., 2010).

Gao-Feng Wu et al. (2017) showed that taurine had an effect on the abovementioned depression-related functions in rats exposed to chronic unpredictable mild stress (CUMS). In their research pre-administration of taurine restrained the decrease of the aforementioned neurotransmitters and neurotrophic factor levels, and the increase of glutamate and corticosterone levels. They found that both the serum and hippocampal CORT levels were low in taurine-pretreated rats; this indicates that taurine reduces the rate of corticosterone secretion by regulating HPA under prolonged stress. Their results are consistent with previous studies, which are reporting that taurine improves and regulates adult neurotrophic protein expression and neurogenesis in the hippocampus (Chen et al., 2004; Toyoda et al.,2015).

Taurine and anxiety

The GABAergic system has a vital role in regulating the anxiety behavior of animals (Idrissi and Trenkner, 2004). Taurine is capable of interacting with the GABA-Benzodiazepine system receptors, which are considered to be involved in the etiology of anxiety; taurine has been found to mimicking GABA (Kontro and Oja, 1990). Therefore taurine could be a promising agent for the treatment of anxiety-related diseases (Idrissi et al., 2013).

Exposure to various agents such as cyfluthrin (Rajawat et al., 2015), ethanol (Aragon et al.,1992) or cyhalothrin (LCT) (Prakash et al., 2015) results in reduced mobility in the open field test which indicates anxiety. Dose-based pretreatment of taurine may restore these behavioral changes. In another study on taurine and anxiety, it was observed that acute taurine treatment significantly increased the percentage of time spent on open arms in elevated plus maze test which indicates an anxiolytic effect (Chen et al., 2004). Additionally, it has been reported that, taurine resolves neuro-behavioral deficiencies caused by cisplatin which is used as a chemotherapeutic agent in cancer treatments (Owoeye et al., 2018).

Another task evaluated in these studies is muricide activity. Muricide activity or mouse killing behavior in rats is one of the most typical predatory aggressive behaviors observed in the laboratory (O'Boyle, 1974). It is thought that central serotonergic system is involved in inhibition of mouse killing behavior in rats (DiChiara et al., 1971; Gibbons et al., 1978). In a study on rats exposed to LCT (a synthetic pesticide) showed that pre-taurine administration inhibited LCT-induced muricide behavior. These results suggest that taurine's anxiolytic effects are also associated with serotonergic system (Chakroborty et al., 2019).

Zebrafish, which has been widely used in scientific research, is a suitable model organism for studying anxiety-like behaviors. Zebrafish anxiety can be measured in different tasks, such as the response to new environments and to brightly lit environments (Stewart et.al, 2012). Anxiety-like behavior is a complex behavior in zebrafish caused by danger stimuli. It reduces their exploration behavior and typically displays as geotaxis (diving), tigmotaxis, scototaxis, increased freezing and irregular movements (Mezzomo et al., 2016). Zebrafish shoaling behavior is associated with cognitive performance and decision-making strategies (Sporns, 2010) and modulated by TAU (Jia et al., 2016). Therefore, taurine may affect the group behavior of zebrafish.

Risk assessment is a defensive behavior that involves careful investigation of new and / or potentially hazardous environments (Maximino et al., 2011; Kalueff et al., 2013). Mezzomo, et al. (2016), showed a significant decrease in the number of risk assessment behaviors in the group receiving high taurine. It has also shown that the application of taurine significantly increases the time spent in the brightly lit tank. These results suggest that TAU has an anxiolytic-like effect in zebrafish.

In another study on zebra fish, fish exposed to both TAU and ethanol showed a reduced discovery in the predatory region and decreased risk assessment sections. Also TAU-treated fish showed a significant reduction in the number of risk assessment episodes. TAU has a concentration-dependent effect on anxiety -like behavior, mobility, discovery, and aggression (Fontana et al., 2016; Rosemberg et al., 2012).

Taurine and learning

Studies show that learning and taurine are closely related: Taurine treatments (0.4 g / day) in pre-adult stages showed that mice can learn faster after weaning than the control group (Chen et al., 2019).

In a 2007 study at the University of Glaskow, the relationship between parental choice of prey and risk behaviors and spatial learning was investigated (Arnold et al., 2007): In some of the songbirds, there is an excessive increase in spider consumption during chick development. The researchers found that the amount of spider in the feeding of blue tits (Cyanistes caeruleus) significantly changed with the age of the chick. However, this change is not related to the season, environment or population frequency of spiders. Spiders are a food source similar to caterpillars except that they contain 40-100 times more taurine (Ramsay and Houston 2003). The period in which the amount of spider supply peaks is the period when the chicks are about 5 days old and their eyes are newly opened. At the end of the behavioral tests, it was found that providing taurine rich spiders to offspring improves their spatial / spatial learning abilities and increases their risk-taking potential while searching for new objects. These results are based on the fact that taurine influences the development of brain regions that control the HPA axis, and that taurine supplementation affects stress response and spatial learning that enhances hippocampal development and function (Koolhaas et al., 1999). In adult birds, spatial learning ability and risk-taking tendency have an impact on the individual's competitiveness and prey success. As a result of all these reasons, early feeding of the parents managed by prey selection is a mechanism that can manipulate behavioral phenotype (Metcalfe and Monaghan, 2003)

A study by McCabe, et al. (2001), provide evidence for the effect of taurine on learning mechanisms of imprinting behavior in chicks. An imprinting score was determined by a preference test applied to chicks divided into two groups; held in the dark after hatching or exposed to imprinting stimulants. Significant correlation was found between GABA and taurine levels and imprinting scores. And it has been shown that learning increased both GABA and taurine secretion. These results demonstrated that plasticity in GABAergic neurons is involved in the mechanisms of learning and memory and taurine contributes to these mechanisms.

Conclusion

In conclusion, all the neurophysiological properties described above shows that taurine effects anxiety, depression, learning ability, memory, risk assessment and risk taking behavior mechanisms. However, studies have reported that these effects of taurine are dose-dependent. Taurine exerts different effects under different types of stresses, as well as shows behavioral differences between acute administration and chronic treatment. The effect of taurine is varied in different developmental stages of the animals. In the light of current studies, it has a promising effect on behaviors.

Taurine is widely used as a nutritional supplement in cat and dog feeding. Because it is essential in cats and its deficiency is associated with heart disease in dogs. However, there is limited literature on the behavioral effects of taurine in these animals. Because of the cognitive and behavioral effects mentioned above, taurine can be used in behavioral disorders as it is involved with aggression mechanisms. In addition, it is thought that taurine can be used to increase animal welfare due to its anxiolytic and anti-depressive effects. Taurine is also thought to be effective in breeding programs of working dogs such as search and rescue or livestock guarding dogs. Further research is needed on the behavioral effects of taurine in pet animals.

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

A Comparative-multidisciplinary approach to the concepts of "consciousness" and "behaviour" in terms of human-animal resemblance and dissimilitude

Burçak Özkan

Abstract

The concept of "consciousness" is placed at the center of various researches from early historical periods despite being named after alternative terms. After numerous attempts to clarify the concept by adopting different viewpoints by different disciplines, the term is lately being addressed by a multidisciplinary partnership formed by a number of areas such as evolutionary biology, evolutionary psychology, neuroscience, comparative cognition apart from other ones. Since consciousness is originated from nervous system- especially from the brain and body-mind wholism- it comes to existence as a result of neuroanatomic and neurophysiologic constructions and functions/processes. Moreover, both mind/nervous system/mind-body wholism and consciousness are being shaped by an integrated genetic-environmental determinism. It is known that structure and function are always connected and function together harmoniously. One another important point is the connecting link between "consciousness" and "behaviour" which can be defined as "reactions exhibited by living organisms to the surrounding environment and/or changes of the environmental conditions". All living beings act pursuant to biologic adaptation to their own surrounding environment in order to provide the continuation of life and behave according to this purpose. All behaviours emerge as a result of electrochemical processes of nervous system - especially the brain. Brain and consciousness are the products of evolution. Modern science reveals that living creatures exhibit an evolutionary relationship of structure and function, have evolutionary, epigenetic, bodily/cerebral/mental grounds, mental properties/functions such as thoughts, emotions etc. result from the integrity of primitive-developed constructions/functions and conscious-unconscious processes and animal cognition studies indicate that animals exhibit low-grade mental/ cognitive abilities that were previously attributed to only human beings. In this study, it is aimed to evaluate the concepts of "consciousness" and "behaviour", the relationship between these two terms as well as the conclusions of these determinations from a comparative-multidisciplinary perspective by taking human-animal similarity and dissimilarity into consideration.

Keywords: Consciousness, behaviour, animal, evolution, comparative, neuroscience

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Probiotics and oxidant-antioxidant relationship

Ege Çatalkaya

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Abstract

There is a balance between oxidants and antioxidants in the organism. Oxidative stress and tissue damage develop when total oxidant level exceeds total antioxidant capacity. The microbiota in the intestines is part of an extremely complex ecological system. These microorganisms interact not only with each other but also with their hosts in a symbiotic relationship. Autoimmune Dermatitis, Gastrointestinal System Pathologies , Endocrinological Pathologies , Cancer and recently various diseases including neuropathology, associated with dysbiosis. Oxidative stress is a critical event in the pathogenesis of many diseases, and oxidative stress increases in pathologies seen in dysbiosis. In the case of probiotics, oxidative stress and dysbiosis, it should be aimed to increase awareness of the use of concomitant and / or prophylactic in addition to specific treatment in the field of Veterinary Medicine. The academic studies on Probioclubs in Veterinary Medicine and Human Medicine have been compiled. Probiotics are known to have many beneficial health effects and consumption, shows that strain-specific probiotics may exhibit antioxidant activity and reduce the damage caused by oxidation. Metabolic antioxidant activity of LAB; it may be caused by the production of its own antioxidant enzymes (superoxide dismutase and catalase) and its antioxidant metabolites (folate and glutathione). Proper use of probiotics reduces oxidative stress in dysbiosis-causing diseases, increased oxidant levels in metabolic diseases such as obesity and diabetes but decreased with the use of probiotics, besides the local effects of probiotics in microbiota, symbiotic effects are thought to play a role in the systemic antioxidant-oxidant mechanism. Thus, it has been concluded that by increasing and investigating the use of probiotics in the field of veterinary medicine it will contribute to the positive results for the control of the factors affecting animal and human health.

Keywords: antioxidant, oxidant, probiotic

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Current diagnostic methods in canine mammary tumor: Biomarkers

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Abstract

Mammary tumors are the most common type of tumors in sexually intact bitches. Several techniques such as fine neddle biopsy, excisional biopsy, radiography, computed tomography have been used for diagnosis of mammary tumors. Age, tumor size and stage, tumor histopathological type, clinical behaviour of the tumor, tumor grade, estrogen receptor status, microvessel density, and molecular genetic alterations are identified as prognostic factors in canine mammary tumors (CMT). Canine mammary tumors are highly similar with human breast cancer (HBC). Because of that reason, human biomarkers of HBC are also used for diagnosis and investigating the pathophysiology of CMT. Nowadays, these biomarkers can be determined by molecular techniquies and they can be measured in the blood, body fluids and tumor tissue. Tumor biomarkers can be detected by several techniques such as immunohistochemistry, polymerase chain reaction, flow cytometry, immunofluorescence. These techniques should be sensitive and capable enough for seperating the malignant cells from non-tumoral hematopoietic cells. In addition, these biomarkers are useful in the detection of cancer recurrence, selection and arrangement of cancer treatment, determining the response to cancer treatment, providing information about the diagnosis and prognosis of cancer and contributing to the understanding of cancer biology. Biomarkers used for this purpose and their effects are stated respectively as; determination of proliferation and apoptosis of cancer cells (Ki-67, PCNA, protein p53), determination of metastatic potential of tumor (E-cadherin, CEA, CA 15-3), determination of angiogenesis (VEGF, EGFR, HER-2), determination of inflammation (COX-2), determination of hormone receptors (estrogen, progesterone), determination of BRCA1 and BRCA2 gene mutations. The detection of biomarkers is a current approach in order to examine the pathophysiology of CMTs. These biomarkers are important structures that provides early diagnosis on the clinical course and prognosis of CMTs.

Keywords: Biomarker, canine, mammary tumor.

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

Anti-Müllerian hormone as a diagnostic tool in veterinary gynaecology

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Abstract

Anti-Müllerian Hormone (AMH) is a homodimeric glycoprotein which plays a role in fetal sex discrimination by regression of Müllerian ducts. AMH is secreted by Sertoli cells in males, and by granulosa cells of preantral and antral small follicles in females. AMH, which is a member of Transforming Growth Factor-β superfamily, has an important task in follicle development in females by limiting the number of growing follicles via reducing the sensitivity of these follicles to Follicle Stimulating Hormone. Evaluation of AMH concentrations is routinely done in diagnosis and follow-up of many reproductive cases in human medicine, especially in ovarian reserve determination. In recent years, AMH has also become popular in veterinary medicine. The diversity of reproductive cycles and hormonal mechanisms between animal species has revealed numerous research areas in evaluation of AMH levels, analysis of gene expressions, immunohistopathological examinations, or investigation of receptor mutations in both physiological and pathological cases. Several studies as evaluation of blood and follicular fluid AMH concentrations in mares; assessment of immunohistopathological positivity of AMH in the ovary of a granulosa-theca cell tumor affected mare and healthy ovaries; revealing the diagnostic importance of AMH in bitches with ovarian remnant syndrome; determination of AMH concentrations in cows with different age groups; and the association of these levels with pregnancy were conducted in our department. This review refers to the diagnostic importance of AMH in veterinary reproduction.

Keywords: Anti-Müllerian hormone, ovary, reproduction

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

The banned dog breeds issue in the world and Turkey

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Abstract

Dog bites are considered as one of the most important public health issue around the world. People got bitten by either abandoned or owned dog may have zoonotic, traumatic and psychological affects which threaten the public peace and health. Negative news about dog-animal interaction has been reported in a sensational way through media. As a result of this type of news, a public reaction was raised which compel policy makers to make legal precautions. Various dog breeds are described as "dangerous dog breeds" and are placed in banned-dog breed list. The breed-specific legislations limits the ownership and breeding practices of dogs which are described as dangerous dog-breed. The breed-specific legislations varies in terms of either approach, banned breeds or application of the legislation in local scale. However, the effectiveness of the breed-specific legislations are discussed by various platforms due to the fact that number of dog bites cannot be limited by this legislations. The concept of dangerous dogs, dog-breeds that are considered as dangerous and legal precautions that can be applied are varied among countries. American Pitbull Terrier, American Staffordshire Terrier, Staffordshire Bull Terrier, Bull Terrier, Dogo Argentino, Fila Brasileiro, Presa Canario, Rottweiler, Doberman Pinscher, American Bulldog, Bull Mastiff, Czechoslovakian wolfdog, Ovcharka, Napolitan Mastiff and Akita are the most dog-breeds that are listed in breed specific legislations, and their possession and breeding practices are limited and/or restricted. In Turkey Pitbull Terrier, Japanese Tosa are banned by the Animal protection law no: 5199, Article 14. Through the following years Dogo Argentino and Fila Brasileiro are included in banned dog-breeds with the statement of "breeds similar to those" and banned-dog lists were extended. Currently, animal advocates, dog owners and academics declare that banning of dog-breeds by legislations in general cannot limit the dog bites and due to the breed-specific legislations various dogs with a good temperament are euthanized. Therefore it is recommended to determine the temperament of dogs individually and increase the legal responsibilities and penal sanctions of the owners in order to prevent public health.

Keywords: Dog, banned dog breeds, Pitbull, breed-specific legislation

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VETEXPO-2019 homepage: http://vetexpo.org/
Journal homepage: http://dergipark.gov.tr/

International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Oral presentation

What is Pitbull and what it is not?

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Abstract

Generally nowadays "Pitbull" is known as an athletic dog with a well-structured body type, round head-shaped, dominant, hard to control, tend to attack and causes irreversible damages to its environment. Some of the cynologos accept the term "Pitbull" as an upper identity or class and include "Staffordshire Bull Terrier", "American Staffordshire Terrier", "American Pitbull Terrier", "American Bully", "American Bull Dog" and "Bull Terrier" in this class. Federation Cynologique Internationale (FCI) is accepted this mentioned breeds individually in "Bull Type Terriers" upper topic and did not include Pitbull Terrier in any of the classifications. Due to having morphological similarities between "American Staffordshire Terrier" and "American Pit Bull Terriers" both breeds are mostly evaluated in the same breeds. In this study, we aimed to compare both breeds by using an official breed description of the breeds. The history of Bull Type breeds can be traced back to the early 1800s in the United Kingdom. Old English Bulldogs and English Terriers formed the ancestors of these breeds. The American Pit Bull Terriers are described in a different name (American Staffordshire Terrier) due to owners' request of being evaluated under companion dog. During the time, American Staffordshire Terriers have been differentiated by genetically and behaviorally by selection studies and described as a separated breed in 1996 by FCI. When considering the United Kennel Club's (UKC) breed standards of American Pitbull Terrier and Federation Cynologique International (FCI) breed standards for American Staffordshire Terrier, even though the similarities between the breeds, there are differences in terms of body-color, eye color, pigmentation around the nose/lip/eyelid, behavior and purpose of the breed, keeping aggressive dogs off the breeding can be determined.

Keywords: Dog, Pitbull, American Staffordshire Terrier, American Pitbull Terrier

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

Pathology of respiratory system in cattle

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Abstract

The most important pathology of respiratory system in domestic animals is pneumonia, which is common in cattle because of their special anatomical properties. Lung lobules in cattle are completely separated from each other, because of that reason collateral ventilation cannot be possible. Pneumonia occurs more severe due to the difficulty in resolving the exudate caused by the absence of collateral ventilation. Pneumonia is the most important cause of death in cattle, especially in weaning calves. The mortality rate is more higher in calves that don't take colostrum. The proportion of respiratory diseases in the cattle population in our country varies between 22-59.7%, deaths due to the same cause in feeder cattle ranges between 50-70%. Predisposing and constructive factors play a role in the occurrence of pneumonia. The stress conditions that occur especially during transportation, crowded herds, weaning, castration and horn cutting are the predisposing factors. Bacterial, viral, parasitic and mycotic agents play role in constructive factors. Serotypes A1 and A6 of *Mannheimia haemolytica* are the most lethal pathogens of lobar pneumonia (fibrinous pneumonia) in cattle. In addition to *Pasteurella multocidia* type B and E and *Histophilus somni*, *Mycoplasma bovis* and *Mycoplasma dispar* are the other important pathogens of the pneumonia. Although pathogens of pasteurella and mycoplasma species can cause fibrinous pneumonia, they may also lead to enzootic pneumonia as secondary infection following viral infections that are in fact important. Enzootic pneumonia of calves; is a highly lethal disease complex seen in the animals exposed to indoor housing with high stocking density and it is caused by synergistic effects of two or more viruses, mycoplasma, and bacteria. Viral agents in bovine pneumonia include bovine respiratory syncytial virus (BRSV), bovine parainfluenza-3 viruses, infectious bovine rhinotracheitis (IBR), bovine viral diary (BVD) and adenoviruses. Severe fibrinonecrotic pneumonia, adhesive pleuritis, and neutrophil leukocytes appearing as "oat cells" are in the foreground in lethal lobar pneumonia caused by *Mannheimia haemolytica serotype A1*, however, fibrinonecrotic pneumonia is seen less severe in *Pasteuralla multocida*. Fibrinonecrotic pneumonia and vasculitis are in the foreground in *Haemophilus somnus*. In addition to the occurrence of fibrin, peribronchial lymph node hyperplasia (cuffing pneumonia) and atelectasis are important in mycoplasma pneumonia. In this presentation, it is aimed to represent macroscopic and microscopic findings and differential diagnosis of important bacterial and viral pneumonia in cattle .

Keywords: respiratory, pneumonia, cattle

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International VETEXPO-2019 Veterinary Sciences Congress
September 20-22 2019. Double Tree by Hilton Hotel, Avcilar /Istanbul, Turkey

Invited presentation

How to approach behavioural problems in dogs

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Abstract

Veterinary clinical behavioural medicine deals with normal and abnormal behaviours of animals, which are highly influenced by genetic and social backgrounds as well as by environmental factors. Although most of the behavioural problems seen at the veterinary clinics can be classified under "normal species specific behavior" rather than "behavioural disorders", correct approach to any type of behavioural problem has a critical importance. It is well known that primary reason for pet relinquishment is abnormal behaviours as it has a strong potential to weaken the bond between the companion animal and its owner. Thus, every veterinarian should have an understanding of the behaviour to screen behavioural changes in their patients. While approaching behavioural problems in dogs, the first step is to eliminate any medical problems which may affect the behaviour. If there is no medical history, a detailed behavioural history should be taken to determine the behavioural diagnosis. Main aim of the diagnostic approach is to find out the emotional motivations underlying the behaviour. Thus, one should always focus on emotions rather than try to fix the behavior(s). Behavioural disorders are abnormal behaviors considering the age, breed and species specific characteristics. They are generally driven by emotional and pathological disorders. Although treatment varies depending on the behavioural history and environmental factors, the most important step is the prevention of problems. The common methods used in the treatment are habituation, desensitization, counter conditioning and shaping to change the negative emotional state of the animal. Medicine and natural products can be used to stabilize the emotional state and also to improve learning .

Keywords: behaviour, habituation, desensitization, dog

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