WSAVA CONGRESS 2024
SUZHOU, CHINA | 3-5 SEPTEMBER

19th BJSAVC
The 19th BJSAVA Annual Congress

The 49th World Small Animal Veterinary Association Congress

Abstract E-Book

The 49th World Small Animal Veterinary Association Congress

and The 19th BJSAVA ANNUAL CONGRESS

SUZHOU,CHINA | 3-5 SEPTEMBER 2024

CONTENTS

ENDOCRINOLOGY 022

EXOTICS 024

FELINE MEDICINE 026

HEREDITARY DISEASES 029

INFECTIOUS AND EMERGING DISEASES 031

INTEGRATIVE MEDICINE 048

INTERNAL MEDICINE (OTHER) 050

NEUROLOGYNEUROSURGERY 054

NUTRITION 057

ONCOLOGY 061

ORTHOPEDICS 075

ONE HEALTH 083

087

OTHER 091

PAIN MANAGEMENT 098

PHARMACOLOGY 100

REPRODUCTION, PEDIATRICS 102

SOFT TISSUE SURGERY AND ONCOSURGERY 106

SPORTS MEDICINE AND REHABILITATION 111

VETERINARY COMMUNICATION 114

Behavior

P 002 >

A VIDEO-BASED COMPILATION OF ACUTE PAIN BEHAVIORS IN CATS

Sabrine Marangoni,Paulo Steagall

Universite de Montreal/City University of Hong Kong

Introduction

Video-based education is paramount for behavioral recognition, as signs can be subtle and often under-recognized.

Objectives

The aim of this work was to create a video-based compilation of acute pain behaviors in cats as an open-access online resource for educational training of veterinary professionals and the general public.

Methods

A database comprising 60 hours of video recordings of cats were used. Videos were previously recorded after ethics approval and written client consent forms, and involved cats with different types (e.g. medical, surgical) and degrees (e.g. from no pain to severe pain) of acute pain, before and after surgery or the administration of analgesia. Database included videos of cats of different coat colors, age, sex and breeds. Video were reviewed to identify acute pain behaviors presented in an ethogram (Marangoni et al. 2023) and selected according to their quality and duration by one observer. Pre-selected videos underwent a second round of screening by two observers before final edition using a standardized template (i.e. watermark and titles).

Results

A total of twenty-four videos (39 ± 20 seconds) with each acute pain-related behavior described in the ethogram (24 behaviors) were uploaded into an open-access online video-sharing platform (http://www.youtube.com/@Steagalllaboratory). An individual hyperlink has been created for each acute pain behavior. Videos are provided with a short description for training purposes.

Conclusions

This video-based compilation of acute pain behaviors may promote better training of veterinary health professionals on feline acute pain assessment, while promoting and improving feline health and welfare and our understanding of cat behaviors.

Marangoni S et al 2023;PLoS ONE 18(9).

Key Words feline; cat; pain behaviors; video-based learning; acute pain

Clinical pathology

P 004 >

CHARACTERIZATION OF BONE MARROW REPORTS, FREQUENCY OF DIAGNOSES AND ASSOCIATED FACTORS OF CANINES AND FELINES TREATED IN VETERINARY CENTERS IN COLOMBIA DURING THE PERIOD 2012-2023.

Ingrid Johana

Universidad de Antioquia

Introduction

Studies support bone marrow aspiration advantages in the diagnosis of diseases in canines and felines. In Colombia, little information has been documented on the diagnoses obtained from its use.

Objective

To describe the zoographic, clinical, and quality characteristics, as well as the frequency of diagnoses and associated factors in bone marrow aspirate reports of canines and felines attended in veterinary centers in Colombia during the period 2012-2023.

Methods

Cross-sectional descriptive study. Zoographic, clinical, and quality variables were extracted from the reports and interconsultations, and the frequency of diagnoses and associated factors were determined. The quality variables of the reports were contrasted with guidelines for the reporting of bone marrow aspirates in canines, felines, and humans.

Results

A total of 135 reports were obtained, 116 canine and 19 felines, with a mean age of 5.22 ± 3 years, 53% were males; the most frequent indication was anemia alone or accompanied by another alteration. The items with less adherence in the reports were puncture site (91.9%), relevant clinical data (85.2%) and morphological evaluation by line (52.6%). The most common diagnosis in canines was hypoplasia (36.1%) and in felines neoplasia (40.0%); erythroid hyperplasia and neoplasms were more common in males, while granulocytic hypoplasia was more frequent in females.

Conclusion

The study of bone marrow in canines and felines treated in Colombia is infrequent and predominantly in the canine species. We found a high percentage of samples that did not meet quality criteria and low adherence to the guidelines for reporting results.

Key Words Bone marrow. Dog diseases. Cat diseases. Neoplasms. Hyperplasia

P 005 >

IMPORTANCE OF IN-HOUSE URINALYSIS IN THE DOG AND CAT CLINIC

Diana P. Martins[1],Flávia P. Martins[1],Felisbina L. Queiroga[2,3],Ana C. Silvestre-Ferreira[2,3]

1. VetCelos - Centro Veterinário

2. Universidade de Trás-osMontes e Alto Douro

3. Associate Laboratory for Animal and Veterinary Science (AL4AnimalS)

Introduction

Urinalysis composed by macroscopic analysis, biochemistry and analysis of urinary sediment is very useful both for diagnose and monitor diseases of the urinary system and complementary diagnosis of other diseases. Several studies refer to the ideal time to carry out this analysis without changes, but unfortunately there is still no agreement between them.

Objectives

To study the changes observed in refrigerated urine samples during the first 48 hours after collection.

Methods

Type 2 urinalysis was performed on cystocentesis collected urine samples of 11 dogs (4 non-neutered males, 1 neutered male, 5 sterilized females and 1 non-sterilized female) with an average age of 7 years, and 3 cats (1 non-neutered male, 1 sterilized female and 1 non-sterilized female) with an average age of 2 years, at 0, 4, 12, 24, and 48h post-collection.

Results

There was stability in 100% of samples for 48h regarding to color, turbidity, and urine dipstick analysis. 28.6% (n=4) of samples presented macroscopic crystal precipitation during storage. In sediment analysis, there were no changes in observed cells, but changes were observed in crystal precipitation in 21.4% (n=3) of samples during 48h storage starting after 4 hours of refrigeration. Both, the dissolution of the crystals presents at 0h, and new crystals formation was observed.

Conclusion

It is important to carry out in-house urine analysis so that it can be performed within the first 4 hours after collection.

Acknowledgments

The CECAV authors are funded by project UIDB/00772/2020 (Doi:10.54499/UIDB/00772/2020) funded by the Portuguese Foundation for Science and Technology (FCT).

Key Words urinalysis; dog; cat; urine dipsick; urine sediment

P 006 >

CORRELATION BETWEEN ERYTHROGRAM AND ERYTHROCYTE MORPHOLOGY IN THE IDENTIFICATION OF REGENERATIVE ANEMIA IN DOGS AND CATS

Ana C.S. Teixeira Fernandes[1], Daniela M.C. Silva[2], Felisbina Luísa Queiroga[3,4,5], Ana C. Silvestre-Ferreira[3,4,5]*

1 School of Life and Environmental Sciences (ECVA), University of Trás-os-Montes and Alto Douro (UTAD), Quinta de Prados, 5000-801 Vila Real, Portugal.

2 Veterinarian, Laboratory of Animal Health and Food Safety (Segalab), Argivai, 4490-295 Póvoa de Varzim, Portugal.

3 Department of Veterinary Sciences, University of Trás-os-Montes and Alto Douro (UTAD), Quinta de Prados, 5000-801 Vila Real, Portugal.

4 Animal and Veterinary Research Centre (CECAV), University of Trás-os-Montes and Alto Douro (UTAD), Vila Real, Portugal.

5 Associate Laboratory for Animal and Veterinary Science (AL4AnimalS), Quinta de Prados, 5000-801 Vila Real, Portugal.

**Correspondência: aferreir@utad.pt*

Introduction

Anemia, a common finding in dogs and cats, may occur due to hemorrhage, hemolysis, or decreased bone marrow red blood cell production (RBC). To classify anemia as regenerative or non-regenerative several aspects must be considered, including erythrocyte indices, the morphological RBC observation on blood smears and the absolute reticulocyte count, the last considered the most accurate indicator of medullary regeneration. Evaluation of mean corpuscular volume (MCV) and mean corpuscular hemoglobin concentration (MCHC) have shown their relationship with the regenerative response, with macrocytosis and hypocromasia being associated with medullary regeneration by several authors.

Objectives

To determine whether, for dogs and cats, MCV and MCHC, and erythrocyte morphology agree to identify anemia as regenerative or non-regenerative

Methods

A total of 150 anemias in dogs and 145 in cats were prospectively classified by two methods, erythrocyte indices and erythrocyte morphology on blood smear.

Results

Overall, 75% (n=112) anemias in dogs and 73% (n=106) in cats were classified in the same way by both methods. The majority were non-regenerative anemias, 106 in dogs and 116 in cats, from those, an agreement between methods, 86% (n=91) in dogs and 84% (n=98) in cats, was observed. Regarding to regenerative anemia, 52% (n=23) in dogs and 72% (n=21) in cats presented discordant results.

Conclusion

In both species, the two methods in study were not concurrent regarding the assessment of medullary regeneration.

Acknowledgments

The CECAV authors are funded by project UIDB/00772/2020 (Doi:10.54499/UIDB/00772/2020) funded by the Portuguese Foundation for Science and Technology (FCT).

Key Words: Anemia; Cat; Dog; RBC morphology; RBC Indices

Dermatology

P 008 >

COMPARATIVE ASSESSMENT OF SMARTPHONE-BASED DIGITAL PLANIMETRY FOR WOUND AREA MEASUREMENT IN VETERINARY MEDICINE

Sharun Khan

ICAR-Indian Veterinary Research Institute

Introduction

Accurate wound area measurement is essential for effective wound care as it helps determine the healing progress and guides the choice of appropriate wound treatment.

Objectives

We evaluated and compared three wound area measurement techniques (wound tracing - manual planimetry, smartphone-based digital planimetry - imitoMeasure, and digital planimetry using ImageJ software) in a rabbit wound healing study.

Methods

The study involved 291 wounds categorized into small, intermediate, and large wounds. The Bland-Altman plot was constructed with mean difference and Mountain plot was constructed using ImageJ as a reference technique. The intraclass correlation coefficient (ICC) was computed to assess the agreement and reliability between different wound measurement techniques We also compared the time taken for data analysis (processing time) using the different methods.

Results

The study found that imitoMeasure consistently demonstrated a higher level of agreement with ImageJ, especially in small and intermediate wounds. Mountain plots revealed that imitoMeasure exhibited better agreement with ImageJ across all wound sizes, with the median of the differences close to zero. Bland-Altman plots further supported the findings, with wound tracing exhibiting wider limits of agreement and higher variability than imitoMeasure. ImitoMeasure consistently proved to be the quickest method across all wound sizes, while wound tracing required the longest processing time.

Conclusion

Our findings indicate that imitoMeasure is a more reliable and consistent method for wound area measurement, making it a preferable choice over wound tracing, especially when considering small and intermediate wounds. These findings have practical implications for researchers and clinicians involved in wound assessment.

Key Words Digital planimetry; Smartphone planimetry; Wound area; Wound healing; Veterinary medicine

P 009 >

EFFICACY OF SOLO EAR FLUSHING IN THE MANAGEMENT OF CANINE AND FELINE WITH OTITIS EXTERNA

Zhongyuan Zhang,Ran Wang,Xiaohu Zhang,Zhaoxia Zhang,Di Zhang

China Agricultural University

Introduction

Otitis externa is a common ear issue in dogs and cats. Some affected animals may require systemic anti-inflammatory and antibacterial therapy. However, topical treatment remains the primary approach for managing otitis externa in most cases. Proper ear canal flushing is a crucial step in the management of otitis externa.

Objectives

To assess the efficacy of ear canal flushing alone on naturally affected dogs and cats with otitis externa without the use of systemic or topical medications.

Methods

This study collected totally 40 affected ears from each 10 dogs and cats. After one week of ear canal cleaning treatment every other day by using ear solution (main active ingredients: salicylic acid, galactose, mannitol, EDTA). Clinical symptoms scores were compared and analyzed by professional clinical veterinarians to evaluate the effectiveness.

Results

The results indicated significant improvement in clinical symptoms of otitis externa in the experimental dogs and cats after one week of ear canal cleaning treatment, with noticeable reductions in indicators such as ear canal odor, ceruminous discharge, and hyperkeratosis (p 0.05). Cytological evaluation of otic contents suggested a significant decrease in bacterium and yeasts(p 0.05).

Conclusion

Results confirmed the effectiveness of ear canal cleaning treatment for otitis externa in dogs and cats. This study provides a scientific basis for ear canal cleaning therapy in managing otitis externa. Future studies may focus on optimizing ear canal cleaning methods, refining the composition of ear cleaning solutions, exploring the combined use with other therapeutic approaches.

Key Words Ear Flushing; Canine; Feline; Otitis Externa

P 010 >

INTERNATIONAL FEASIBILITY OF VETERINARY TOPICAL CORTICOSTEROID PHOBIA (VETCOP) QUESTIONNIARE FOR DOGS DIAGNOSED WITH CANINE ATOPIC DERMATITIS

Hock Siew HAN[1],Xinghui CHEN[2],Qianchun CUI[3],Fang WANG[4],Di ZHANG[10],Jingjing YE[5],Xiang TANG[6],Xinghui CHEN[7],Luke BOYDEN[8],Xiaohui Chloe QUAN[9],Siyang Sam LI[9]

1. CityU Veterinary Medical Centre

2. Ruipeng Pet Hospital, Jiayue Road Branch, Chengdu.

3. Vet Reinforce Animal Hospital, Chengdu

4. Beijing Mei Lian Zhong He Veterinary Referral Center

5. Shanghai Naughty Family Pet Hospital, Shanghai.

6. IVC ShenZhen Animal Hospital, Shenzhen

7. Ruipeng Pet Hospital, Jiayue Road Branch of Chengdu

8. School of Computer Science and Electronic Engineering, Faculty of Engineering and Physical Sciences, University of Surrey, Stag Hill University Campus, Guildford GU2 7XH, United Kingdom

9. Zoetis, Building 2, #88 North Sichuan Road, HongKou District, Shanghai 200085, China.

10. The Clinical Department, College of Veterinary Medicine, China Agricultural University, Beijing

Introduction

Topical glucocorticoids are a possible treatment option for Canine Atopic Dermatitis (cAD), where its duration and frequency of use is tailored for specific patient. Topical corticosteroid (TCS) phobia refers to the negative feelings and beliefs related to TCSs experienced by patients and patients' caregivers, which may result in treatment failure. No scale currently exists to measure pet owners' fear of using topical corticosteroids on their pets.

Objectives

To assess the feasibility of adapting human topical corticosteroid phobia (TOPICOP) scale for veterinary dermatology (VETCOP).

Methods

Clients with dogs diagnosed with cAD were directed to an online platform to access VETCOP, fulfilling all data protection laws in all respective countries. Statistical analyses to test Scale-Construction Process (Construct, Concurrent and Convergent Validity, Reliability) plus Structural Equation Modelling using the Linear Structure– relationship Approach were performed.

Results

245 dog owners were enrolled to take the survey (female: 191 and male: 54). 87 from Singapore and 158 from China (Beijing: 80, Chengdu: 55, Shenzhen: 15 and Shanghai: 8). Mode age bracket was 31-40 years old. The model used for the VETCOP scale was identical to that of the original 2013 TOPICOP scale with a very similarly good fit. VETCOP can identify clients with corticosteroid phobia with sensitivity of 78% when score is more than 17/36. (Figure 1).

Conclusions

The adapted scale performed very similarly well to the original 2013 TOPICOP. This newly adapted TOPICOP scale, coined 'VETCOP' is a meaningful measure of phobia of pet owners using corticosteroids on pets.

Key Words Topical Corticosteroid Phobia; Canine Atopic Dermatitis; Feasibility

P 011 >

THE COMPARISON OF PREVALENCE OF SERUM ALLERGEN-SPECIFIC IGE DETECTED WITH WESTERN BLOTTING METHOD FOR ATOPIC DERMATITIS DOGS AND CATS IN SOUTHEAST CHINA WITH MIDWEST

Yuan Chang[1],*YaJu Liu*[2],*ChaoLi Chen*[1]

1. PetsHome Veterinary Medical Center

2. College of Veterinary Medicine, South China Agricultural University, GuangZhou, GuangDong, China

Introduction

According to previous studies, we understand allergens will be different geographically.. With this study will help to survey the prevalence of allergens and be the reference in preparing allergen specific immunotherapy in China.

Objectives

To identify the prevalence of animal allergens and compare southeast China with Mideast

Methods

We used western blotting to test the serum of dogs and cats who were diagnosed with atopic dermatitis. Totally 236 serum samples at least one positive result were collected from multi-center animal hospitals. 192 from southeast China and 44 from Midwest were collected from December 2021 to April 2024.

Results

In both areas, the first three most common positive result as orders were mold mixture (Penicillium notatum, Aspergillus fumigatus, Cladosporium spp., and Streptomyces Alternaria), house dust and then mite mixture (Dermatophagoides farinae, dust mite feces). We found there is 27.5% (53/192) positive to flea and flea salivary in southeast China compare to 61.4%(27/44) in Midwest. There were only 3% (6/192) with IgE positive to birch (Betula Pendula) in southeast area compared to 29.5% (13/44) in Midwest. We also found there were 1.6% (3/192) animals that tested positive to Oak (Quercus Linn) compared to 31.8% (14/44) in Midwest.

Conclusions

From this study, the mold combination, house dust and dust mite combination were the first 3 most popular allergens in both areas. Flea and flea salivary was much less in southeast China compare to Mideast. And for these two areas, there was significant variation in tree species which will induce IgE positive reaction.

Key Words Western Blotting; Serum Allergen-Specific IgE Test; Prevalence in China

Dentistry

P 013 >

EVALUATION OF MAXILLARY FOURTH PREMOLAR TEETH WITH ENDODONTIC TREATMENT IN 39 DOGS

Gyumin Kim,Jumjae Lee,Daeyoung Choi,Chul Park,Hyungsub Kang,Donghee Kim,Changhyeok Im,Inseong Jeong,Suyoung Heo,Namsoo Kim

Jeonbuk National University

Introduction

In dogs, fractures more commonly occur in the maxillary fourth premolar teeth than in other teeth. If the pulp is damaged, the treatment options are tooth extraction or root canal therapy.

Objectives

The purpose of this study was to evaluate fractured maxillary fourth premolar teeth prognosis in dogs after endodontic treatment.

Methods

Thirty-nine maxillary fourth premolars were treated in 39 dogs over a 2-year period. All treatments were performed by the same operator with standard root canal therapy, the prognosis was evaluated using dental radiographs and visual inspection for an average of 6 months, and the success rate of root canal treatment was evaluated.

Results

The 39 dogs were evaluated for breed, size, age, sex, weight, and cause, degree, and location of fracture. After root canal treatment, 30 out of 39 dogs showed improved symptoms, while 9 dogs developed facial edema, periapical abscess, and periodontal inflammation that necessitated extraction. Additionally, the success rate of endodontic treatment was found to be reduced in dogs with periapical osteolysis on preoperative dental radiographs.

Conclusions

Endodontic treatment is considered a valuable treatment option in the case of a fractured maxillary fourth premolar because of its ability to maintain the structure and masticatory movement.

Key Words dog; veterinary medicine; maxillary fourth premolar teeth; complicated crown fracture; complicated crown root fracture; endodontic treatment

P 014 >

A CASE OF AMELOBLASTOMA IN DOMESTIC SHORTHAIR CAT

WEI SIYUAN[1],LONG ZHAO[1],YUMENG GUO[1],DONGCAI YU[1],CHUNGHSUAN LIN[2]

1. Loving Care International Pet Medical Center, Beijing. China.

2. Healing Veterinary Hospital

Introduction

Ameloblastoma is a benign odontogenic epithelial tumor, rare in cats and dogs.

Objective:

Describe the clinical and histopathologic appearance of ameloblastoma in a cat.

Method:

A five-year-old, 7kg, domestic castrated male cat presented with swelling at the right mandible area. Initial radiographs showed no osteolytic lesions. Cat's mouth is sensitive to touch from one month ago, and pain when eating. Upon physical examination we found 4 round masses at right mandible, extending from incisor to first molar area. Fine needle aspirated the mass with a clear, light yellow fluid.

Result:

CT scan disclosed a space-occupying cystic lesion within the right mandible, with osteolytic lesion invading the mandibular canal and alveolar bone.

Right mandibulectomy was performed. Histopathology result came back with ameloblastoma with bone lysis and remodeling. The Histopathology slide showed the submucosa and underlying bone are infiltrated by a poorly demarcated, highly cellular, irregular neoplasm of epithelial cells supported by abundant stroma. The epithelial cells form nests, islands, and trabeculae characterized by cuboidal to columnar to polygonal epithelial cells. In few areas, the epithelial cells form nests with palisading columnar cells characterized by their basilar pole with rare vacuolation and anti-basilar nuclei.

Due to the left mandible drift, crown reduction and vital pulp therapy was done at left mandibular caine after a month.

No local reoccurrence of the tumor was observed at two month reviewing.

Conclusion

Definite diagnosis by pathology is imperative to provide accurate treatment for oral mass. Patients could've avoided total mandibulectomy with early diagnosis.

Key Words cat; ameloblastoma; oral tumor; dentistry

Figure 1 Four masses at the right mandible, extending from incisor to first molar area.

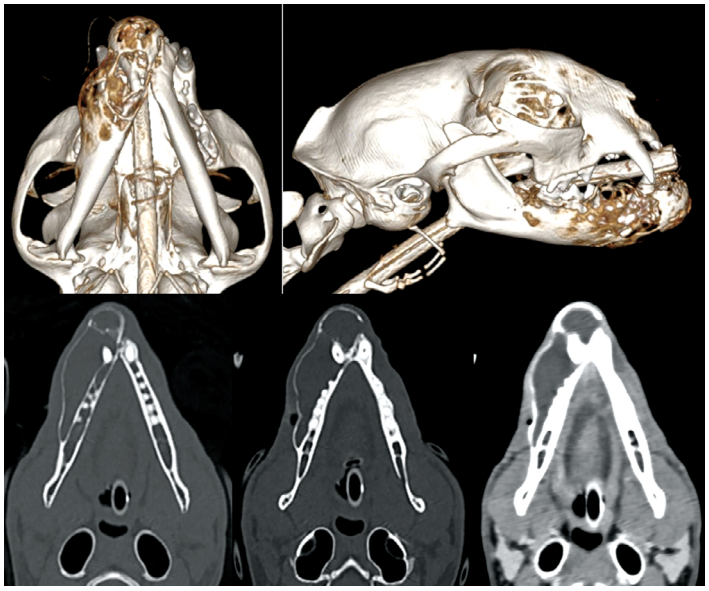


Figure 2 CT imagine of the skull. Noted the osteolytic change at the right mandible.

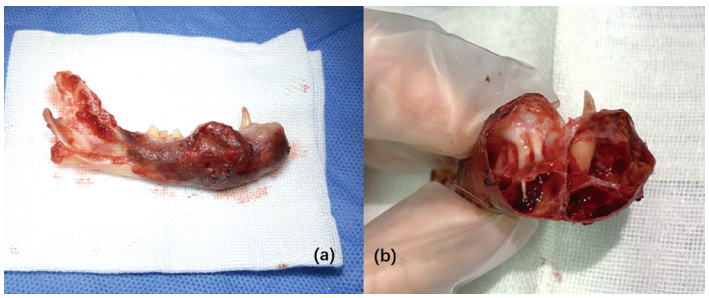


Figure 3 (a)Resected mandible and (b)cross sectional plane of the premolar area, noted the exposed nerve in the cystic lesion

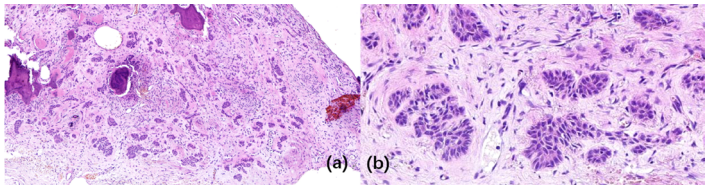


Figure 4 Photomicrograph of the mandibular ameloblastoma, H&E, (a)10x and (b)40x respectively. Noted the epithelial cells form nests with palisading columnar cells, a classical microscopic change of follicular pattern of ameloblastoma.

P 015 >

VBX1000, A NEW CATHEPSIN K INHIBITOR FOR TREATING PERIODONTITIS IN DOG: A PROOF-OF-CONCEPT STUDY.

Jerzy Gawor[1], Daria Ziemann-Gawor[1], Isabelle Druet[2] Alicja Gajosz[3], Julien Salindre[4], Paweł Kowalczyk[5],, Noémie Dam[6], Guillaume Campard[7], Dominique Tierny[7], Matthieu Dubruque[6], Rémy Hanf[6].

Affiliations and Addresses

1 Klinika Weterynaryjna Arka, Ul. Chlopska 2A, 30-806 Krakow , Poland

2 Alliance, 8 Boulevard Godard, Bordeaux, France

3 Veterinary Clinic Koniczyna VET, ul.Białej Koniczyny 15/L1, 02-757, Warsaw, Poland

4 Clinique Vétérinaire VPLUS, 103 T, Avenue de la République, Mirambeau, France

5 Braci Mniejszych Veterinary Clinic, ul.Jana Pawła II 37, 95-050, Konstantynow Lodzki, Poland

6 Vetbiolix, 70 Rue du Docteur Yersin, 59120, Loos, France

7 OCRvet, 2 Place de Verdun, Bât IRCL, 59041 Lille, France

Introduction

This Proof-of-Concept multi-centre study assessed safety and efficacy of a novel Cathepsin-K inhibitor, VBX-1000, in canine patients with periodontitis.

Method

Twenty dogs with periodontal disease were orally treated with 25 mg/kg and 50 mg/kg once-a-day for 60 days. If treatment was well tolerated, dogs were then treated with 50 mg/kg up to Day-90. The primary objective was to assess the effects of VBX-1000 on plasma CTX1 (pCTX1 = marker of bone resorption). Other objectives included evolution of Clinical Attachment Loss (CAL), Periodontal Probing Depth (PPD), and alveolar bone defect measured by X-ray radiography (n=20 dogs) and CBCT scan (n=10 dogs).

Results

VBX-1000 was well tolerated. At Day-60, pCTX1 in both groups was similarly reduced compared to baseline ($p<0.05$). At Day-90, in the entire population (n=20), pCTX1 plasma was 0.10±0.04 vs 0.27±0.23 ng/mL at baseline ($p<0.001$). Radiographs before and after treatment showed a significant decrease in width (n=60 teeth; 3 teeth/dog; $p<0.0001$) and depth ($p<0.05$) of the bone defect between the root of the tooth and the maxillary bone. Such effects on bone defect was confirmed in a subpopulation of dogs (N=10) analyzed by CBCT scan. On Day-90, CAL was reduced by 0.99mm compared to D0 (95% CI from -1.27 to -0.70 mm; n=60; $p<0.0001$). Likewise, the PPD was reduced by 0.98 mm (95% CI from -1.24 to -0.72 mm, n=60, $p<0.0001$).

Conclusion

This study supports VBX-1000 as a drug candidate to treat periodontal disease in dog. A randomized, placebo-controlled trial in dogs should confirm VBX-1000 potential in this indication.

Diagnostic imaging

P 017 >

ULTRASONOGRAPHIC RENAL STUDY OF TRYPANOSOMA BRUCEI INFECTED DOGS PRESENTED TO UNIVERSITY OF NIGERIA VETERINARY TEACHING HOSPITAL, NSUKKA

Obiora polycarp

University of Nigeria Nsukka

ABSTRACT

Renal status of Trypanosoma brucei infected dogs was assessed using ultrasonography.

A total of eighteen (18) Nigerian local breeds of dogs of both sexes,

weighing between 6-10 kg were used for the study. Group I comprised of nine clinically Trypanosoma brucei

infected dogs selected at the outpatient Department of the University of Nigeria Veterinary Teaching Hospital

(UNVTH) and group II was nine the apparently healthy dogs. The uninfected group showed a thin echogenic line

representing the capsule. The renal cortex was hypo echoic and finely granular structure. The renal medulla was

anechoic and the renal pelvis was seen as an irregular echogenic mass at the hilus of the kidney. The infected group

showed more echogenic mass in the renal pelvis and cortical region as well as thickening of capsule and reduction

of size. The left and right kidney of the trypanosome infected group showed significant reduction ($p<0.05$) in

volume compared to the uninfected group. The mean kidney volume of left and right of the uninfected group were

44.54 ± 3.48 cm3

and 47.39 ± 47.39 cm3

respectively, whereas for the trypanosome infected dogs, the mean kidney

volume of the left and right kidney was 26.08 ± 17cm3

and 27.97 ± 3.66cm3

. From this study ultrasonography showed the renal morphology, which

ultimately represents a better prognosis for sick dogs, particularly on the guidance of therapeutic procedures to be

employed and ultrasonograhic images can be correlated with kidney function test as they all point towards the

functionality of the kidneys.

Key Words Keywords; Ultrasonography; kidneys; Trypanosoma brucei; dogs.

P 018 >

PREVALENCE OF HIP AND ELBOW DYSPLASIA IN BOERBOEL DOGS IN NIGERIA: A RETROSPECTIVE STUDY OF RADIOGRAPHIC SCREENING BETWEEN 2016 AND 2020

Iskiil Oladehinde Oyenekan,Ruqayat Temitope Shoyombo-Amusa,Moses Olusola Ilugbo,Rasheed Adetola Ajadi

College of Veterinary Medicine, Federal University of Agriculture Abeokuta, Ogun State, Nigeria

Introduction

Hip dysplasia (HD) and Elbow dysplasia (ED) are developmental, multifactorial diseases of large breed dogs. Despite availability of prevalence data in other breeds, data on Boerboels is scanty.

Objective

To determine the prevalence of HD and ED in Boerboels in Nigeria

Methodology

A retrospective study of the ventrodorsal and flexed lateral hip radiographs as well as extended and flexed latero-medial and cranio-lateral-caudo-medial oblique elbow radiographs from 64 Boerboels breed of dogs between 2016 and 2022 were reviewed. Hip and elbow radiographs were graded using Federation Cynologique International and International Elbow Working Group grading systems respectively. Age and sex differences were compared using chi-square test, with $P \leq 0.05$ considered significant.

Result

Median and mean ages of the dogs were 2 and 2.3 ± 0.6 years respectively. 27 (42.2%) have normal hip, while 37(57.8%) were graded HD positive. Also, 36 (56.3%) Boerboels have normal elbows, while 28(43.7%) were graded ED positive. Grade C (29.7%) and grade 3 (20.3%) accounted for most HD and ED cases respectively. HD Prevalence was significantly ($p < 0.05$) higher in female than male, but no significant ($p > 0.05$) difference in age prevalence.

Conclusion

Prevalence of HD and ED in Boerboels in Nigeria is high due to lack of phenotypic screening and strict breeding restrictions.

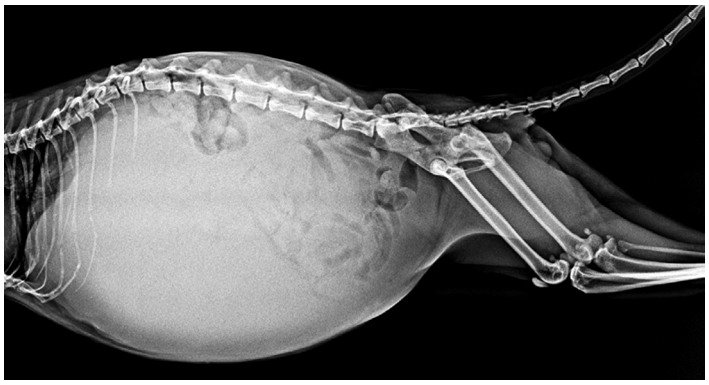
Key Words Boerboel; Hip dysplasia; Elbow dysplasia; prevalence; Nigeria; Dogs

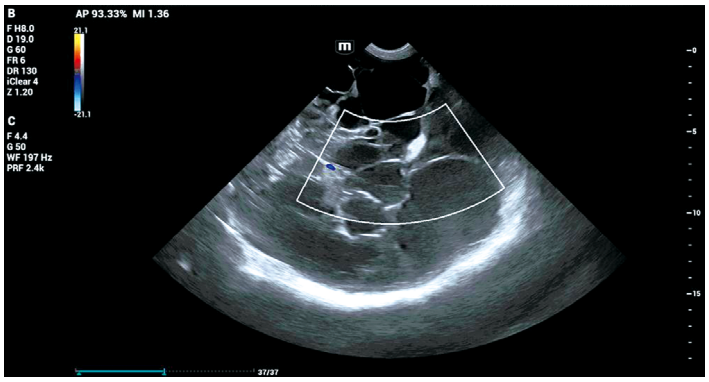
P 019 >

CASE REPORT OF VON MEYENBURG COMPLEX IN A PERSIAN CAT

Parisa Haghi,Athena Salimi

Tehran University, Faculty of veterinary medicine





Introduction

Congenital cystic changes such as hepatobiliary cysts (Von Meyenburg) can affect the biliary system. In these benign cysts, such as hepatobiliary cysts or Von Meyenburg, the adjacent parenchyma is usually normal. This is in contrast to malignant tumors such as biliary cystadenomas and cystadenocarcinomas. In ultrasonography, cysts are regular or irregular anechoic with thin echogenic walls with distal solid enhancement.

Materials and methods

Maury is a 10-year-old male neutered Persian cat brought to the Tehran-Azma diagnostic center with clinical signs of inappetence, retching, and abdominal distention. Multiple large cystic lesions of possibly liver origin were noted in the abdomen with mass effect and displacement of other abdominal organs; no vascularization was noted in CFD. Unexpectedly, other abdominal organs were impossible to assess due to severe mass effect. No sign of pulmonary metastasis in the radiography. FNA, biopsy, or Surgery is recommended with histopathologic examination and hepatorenal evaluation since changes in the PKD1 gene probably cause the lesions.

Discussion

Exploratory laparotomy was performed, and the specimen showed Hepatobiliary cysts, a condition also known as Von Meyenburg Complex, which can significantly impact the cat's liver and biliary system. Von Meyenburg is pathologically classified as a kind of Ductal plate malformation.

Conclusion

This complication is more common in cats. In many cases, finding these cysts is accidental and asymptomatic. Surgery can be an acceptable treatment. Maury did not survive because the cysts entirely occupied the liver parenchyma.

Key Words Cat; Persian cat; Von Meyenburg Complex; Hepatobiliary cysts; Ultrasonography

P 020 >

THE STUDY OF CT THORACIC LYMPHOGRAPHY VIA INTRA METATARSAL PAD INJECTION WITH IOHEXOL IN CATS

Bo Kang

China Agricultural University

Introduction

Chylothorax can cause dyspnea even death in cats. Ligation thoracic duct is an effective treatment, but the anatomy of thoracic duct varies greatly in cats. Therefore, preoperative thoracic duct lymphography is a significant reference for the development of the surgical plan.

Aims

The aims of this study were to establish a specific method for CT thoracic lymphography via intra-metatarsal pad injection of iohexol in cats.

methods

7 healthy experimental cats were selected. they were divided into group 2 mL (G2), group 4 mL (G4) and group 6 mL (G6) according to the dose of contrast agent, experiment was repeated for each cat. CT scan were taken at 3,6,9,12,15 min after injection. Observed the trend of enhanced effect of main branch of thoracic duct over time and describe the anatomy of thoracic duct in normal cats.

Results

contrast media didn't reach L3 in some cats of G2 and reached T1 in all cats of G4 and G6. G2 had a significant difference with G4 and G6 at 3 min, 9 min, 12 min. The number of thoracic duct branches was shown best at 3 min or 6 min. Number of thoracic duct branches ranges from 1 to 4 in experimental cats and mainly in T12-T7.

Conclusion

CT thoracic lymphography via intra-metatarsal pads injection with iohexol is feasible in cats, 4mL or 6mL of iohexol is the appropriate dose for normal cats and 6mL is feasible in cats with chylothorax, 3-6 min after injection is appropriate period for CT scan.

Key Words Cat, CT, Lymphography of thoracic duct, Iohexol, Chylothorax

P 021 >

THE RELIABILITY OF TESTICULAR STIFFNESS BY ELASTOGRAPHY; A COMPARATIVE STUDY OF FERTILITY WITH CHANGES IN ELASTICITY AND STIFFNESS OF TESTICULAR PARENCHYMA IN MALE DOGS

Angkhana Dermlim[1],Jirayu Nitipawachon[1],Natchar Sripiriyawong[1],Nichakan Pengpol[1],Pokchon Khirilak[1],Mitsuyoshi Takiguchi[2],Narong Tiptanavattana[1]

1. Prince of Songkla University, Hatyai campus

2. Graduate School of Veterinary Medicine, Hokkaido University

Introduction

The testes have been formed by fibrous tissues with increasing ages and gradually changed their stiffness and subsequently decreased reproductive capacity. Currently, elastography has been widely used to demonstrate tissue stiffness which refers to tissue elasticity and fibrosis.

Aims

To compare the elastography values on varied ages of normal testes in medium-sized dogs and parameters indicated male fertility and to investigate the normal elastography values.

Methods

Nineteen healthy dogs were divided into three groups: Group 1 was young (0-23 months old), Group 2 was adult (>24-83 months old), and Group 3 was old (>84 months old). Testicular consistency, B-mode ultrasonography, elastography including strain and shear wave velocity (Vs), semen analysis, and histological evaluation were performed. To test for the overall difference among the groups of parameters (strain rate and Vs) and percentage of Sertoli cells per spermatogenic cells of the testes, Kruskal-Wallis was used. The reliability of measurements was estimated by the intraclass correlation coefficient (ICC).

Results

The mean Vs in dogs was 2.47±0.07 m/s (left: 2.49±0.09 m/s, right: 2.46±0.10 m/s). The ICC for elastography values showed excellent reliability (ICC>0.9). There were no significant differences among the group of elastography values and parameters indicated male fertility (P<0.05).

Conclusion

The consistency of the testes and shear wave elastography are not different in males ages ranging from 6 to 84 months.The Vs in m/s units are suggestive to evaluate the normal canine testicular stiffness due to its reliability and ease of use. The information on stiffness in dogs with testicular disorders requires further study.

Key Words Dog; Elastography; Testis

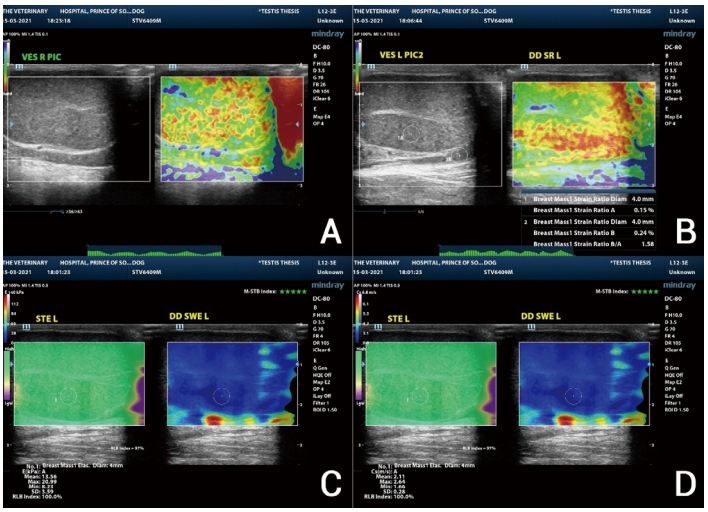


FIG. Representative images of the (A) Visual elasticity score (VES) compared with B-Mode ultrasonography, (B) Strain ratio (SR), (C) Shear wave velocity (Vs) in kPa units and (D) Shear wave velocity (Vs) in m/s units.

Endocrinology

P 023 >

IS SERUM PROTEOMIC ANALYSIS ALTERED AFTER A WEIGHT LOSS PROGRAM IN OBESE DOGS?

Natalia Ribeiro dos Santos,Alessandra Melchert,Thais Moreira Gentini,Marcos Gomides Carvalho,Fabiana Ferreira de Souza,Priscylla Tatiana Guimarães-Okamoto,dos Santos Natalia Ribeiro

São Paulo State University - UNESP

Introduction

Obesity in dogs promotes several consequences for the animal's health. Proteome analysis has emerged as a novel technology successfully applied to several fields of medicine. It can help clarify the physiopathology of obesity and its associated diseases.

Objectives

The aim was to compare serum proteomics analysis before and after weight loss in obese dogs to identify possible biomarkers or metabolic alterations related to obesity.

Methods

Thirteen obese dogs with body condition scores (BCS) between 8 and 9 were included. A weight loss program was applied until the dogs reached BCS 5 (ideal). Blood samples were taken before and after weight loss. The serum was submitted to mass spectrometry proteomics (ESI Q-TOF MS/MS). The results were assessed using univariate analysis (fold change, t-test, and volcano plot) and multivariate analysis (principal component analysis—PCA).

Results

A total of 151 proteins were found; 56 were observed in obese animals, 53 only after weight loss, and 46 in both moments. In PCA analysis, groups were separated. Proteins found in lower abundance after weight loss were fetuin B, which participates in insulin resistance, glucose metabolism, and steatosis; it also has a strong correlation with body fat, indicating a possible role in obesity comorbidities. Another protein found was transthyretin, which can cause insulin resistance when elevated. The last protein reduced after weight loss was kininogen I, which correlated to other inflammatory diseases.

Conclusions

Serum proteomics changed after weight loss in obese dogs. The proteins fetuin B, transthyretin, and kininogen I may represent obesity biomarkers; further studies are necessary to confirm this.

Acknowledgment

CNPq PQ 312168/2023-3

Key Words obesity; dogs; proteomic analysis

Exotics

P 025 >

BODY CONDITION SCORE AND BODY COMPOSITION ASSESSMENT USING COMPUTED TOMOGRAPHY IN BLUE-FRONTED AMAZON PARROTS (AMAZONA AESTIVA)

Alessandra Melchert,Alícia Hippólito,Carolyne Testa,Barbara Ferro,Ana Camila Urrego,Heloísa de Lima,Jéssica Fogaça,Vania Maria Machado,Sheila Rahal,Priscylla Tatiana Guimarães-Okamoto,Jenifer Nascimento,Natalia Santos

São Paulo State University - UNESP

Introduction

Parrots in captivity are susceptible to nutritional disorders such as obesity. However, current nutritional assessment tools, like the Body Condition Score (BCS), are limited and rely on subjective observations. Computed Tomography (CT) is a highly effective method for assessing body composition.

Objectives

CT scans to establish correlations between body composition (fat and muscle) and BCS while identifying the primary areas of fat accumulation.

Methods

Forty-two parrots were allocated in groups based on BCS: BCS 1 (n =9), BCS 2 (n =8), BCS 3 (n =9), BCS 4 (n =8), and BCS 5 (n =8) determined through pectoral muscle inspection and palpation. The muscle and fat composition were taken using CT.

Results

The correlation between BCS and CT scans demonstrated that birds with lower BCS scores (1 and 2) exhibited lower muscle and fat areas. In contrast, those with higher BCS scores (5) displayed higher amounts of these tissues. The pectoral muscle was identified as a suitable location for comparing BCS scores, with the transverse plane proving the most reliable. The humerus muscle region was valuable in BCS comparisons, as obese parrots exhibited higher values in this area. Furthermore, fat deposit sites demonstrated a concurrent increase with the elevation of BCS, primarily in the caudal coelom, pelvic, and axillary regions.

Conclusions

CT was able to detect the main fat deposits in parrots. The BCS and CT parameters showed a correlation in pectoral muscle, with the CT image in the transverse plane being the most reliable.

Acknowledgment

CNPq PQ 312168/2023-3

Key Words parrots; corporal composition; nutritional status; computed tomography

Feline medicine

P 027 >

HEPATOBILIARY BIOMARKER CHANGES IN FELINE PATIENTS WITH DIFFERENT HEPATOBILIARY DISEASES

Athena Kam

Royal Veterinary College

Introduction

Serum biochemistry is a common diagnostic test performed in cats with suspected hepatobiliary diseases and abnormalities in hepatobiliary biomarkers are commonly found. As their activities can be altered by non-hepatobiliary causes, they are not used clinically to make definitive diagnosis.

Objectives:

This retrospective study aimed to investigate the biochemical changes in a range of feline hepatobiliary diseases, and determine if any serum biochemistry pattern is helpful in differentiating the type of disease.

Methods:

The case group consisted of 93 cats with hepatobiliary disease, of which 22 had cholangitis, 14 had feline hepatic lipidosis (FHL), 18 had neoplasia and 39 had congenital portosystemic shunt (CPSS). The control group consisted of 80 cats without hepatobiliary disease. Their ALT, ALP, GGT, total bilirubin (TBIL) and albumin levels were reviewed. Kruskal Wallis test and post-hoc Dunn's test were performed to determine differences between case and control group, and differences between different diseases.

Results:

Cats with diseases had a significantly higher hepatobiliary enzyme activity, TBIL and significantly lower albumin than control group ($P<0.0001$). ALT, GGT and TBIL were significantly different between cats with different diseases ($P<0.0001$). There was no difference between cholangitis and neoplastic cats. There was no difference in GGT between FHL and control cats. ALP was the only parameter significantly different between CPSS and control cats ($P<0.0001$). However, when corrected for age, no difference in ALP activity was found

Conclusions:

Hepatobiliary biomarkers differed between different diseases and may provide some guidance for diagnosis. However, these differences are not distinctive enough, therefore definitive diagnosis cannot be made solely from biochemistry.

Key Words cat; hepatobiliary disease; serum biochemistry; liver enzymes;

P 028 >

PREVALENCE OF BARTONELLA SPP. AND TOXOPLASMA GONDII ANTIBODIES IN CATS FROM GUANGZHOU CITY, CHINA

Qianyi Luo,Jennifer R. Hawley,Arianna Miller,Melissa Brewer,Michael R. Lappin

Catmew-Blessing Feline Only Hospital

Introduction

Bartonella henselae, B. clarridgeiae, B. koehlerae are flea transmitted zoonotic agents that use cats as the reservoir. Many clinical syndromes including cat scratch disease and bacillary angiomatosis in immune suppressed people are caused by these agents. Cats are the only known definitive host for Toxoplasma gondii.

Objective

The objective of this abstract is to estimate the prevalence of Bartonella spp. and T. gondii IgG in samples from cats in one region of China.

Methods

Serum or plasma was collected from 284 healthy and clinically ill cats presenting to a feline clinic in Guangzhou City and stored frozen at approximately -20C until shipped to Colorado State University. The samples were thawed and assayed in previously published ELISA to detect IgG antibodies against B. henselae and T. gondii antigens.

Results

The estimated prevalence rate for Bartonella spp. IgG was 29.2% and for T. gondii IgG was 6.0%. Only 6 of 284 cats (2.1%) had antibodies against both agents.

Conclusions

The Bartonella prevalence rates suggest that fleas were common in the cats studied and support the One Health recommendation that flea control should be maintained at all times when possible. The T. gondii seroprevalence rate suggests that some cats are likely to be infected by hunting or ingestion of uncooked meat, but is lower than in many studies of cats around the world.

Key Words Toxoplasma; Bartonella; antibody; flea; cat

Hereditary diseases

P 030 >

META-ANALYSIS OF CANINE OBESITY GWAS: IDENTIFIES NOVEL OBESITY GENES IN MULTIPLE DOG BREEDS

Liang Ming[1],Natalie Wallis[1,2],Enoch Alex[1],David Sargan[3],Tanguy Mareau[1],Eleanor Raffan[1,2]

1. University of Cambridge

2. Wellcome-MRC Institute of Metabolic Science, Cambridge, UK

3. University of Cambridge Department of Veterinary Medicine, Cambridge, UK

Obesity in dogs significantly impacts quality of life, with different breeds showing varying susceptibility. Previous research has identified certain genetic mutations as associated with obesity. However, the majority of the genetic landscape responsible for canine obesity remains to be characterized.

This study aims to explore the genetic factors contributing to canine obesity through conducting meta-analysis of GWAS for body condition score performed in different dog breeds.

A total of 1685 dogs of four breeds (Labrador retrievers, golden retrievers from the The Golden Retriever Lifetime Study, pugs, and French bulldogs) were included, selected for their varied susceptibility to obesity. GWAS for body condition score were performed using GEMMA and GCTA and summary statistics were meta-analysed using METAL. Systematic comparisons were performed to understand the genetic architecture of this complex trait. Candidate obesity genes and variants were explored.

Successful meta-analysis identified novel obesity-associated loci and candidate genes. As anticipated, some associations were private to one breed and others common to multiple breeds. The data illustrates that multibreed studies performed using relatively sparse genomic array data are likely to increase the power to identify true associations relevant to multiple breeds but will be unlikely to detect true positive associations that are related to variants private to only a subset of or one breed in a meta-analysis.

The data illustrates both the value and pitfalls of using meta-analysis in stratified populations and provides insight into the complex genetic architecture of obesity in future work.

Key Words obesity, dogs, GWAS, genetic diversity, SNPs, canine models

Infectious and emerging diseases

P 032 >

DETECTION OF LYSSAVIRUS ANTIGEN AND ANTIBODY LEVELS AMONG APPARENTLY HEALTHY AND SUSPECTED RABID DOGS IN SOUTH-EASTERN NIGERIA

Boniface Anene

University of Nigeria, Nsukka

Objectives

Domestic dogs are the main reservoir of rabies virus (RABV) infection in Nigeria, thus surveillance of rabies in dog populations is crucial in order to understand the patterns of spread of infection and ultimately devise an appropriate rabies control strategy. This study determined the presence of lyssavirus antigen in brain tissues and anti-rabies antibodies in sera of apparently healthy and suspected-rabid dogs slaughtered for human consumption at local markets in South-Eastern Nigeria.

Results

Our findings demonstrated that 8.3% (n = 23) of brain tissues were lyssavirus positive and 2.5% (n = 25) of sera had rabies antibody levels as percentage blocking of 70% and above correlating with a cut-off value ≥ 0.5 IU/ mL in the fluorescent antibody neutralization test. There was an inverse correlation between lyssavirus positivity and rabies antibody levels confirming that infected individuals most often do not develop virus neutralizing antibodies to the disease. The low percentage of rabies antibodies in this dog population suggests a susceptible population at high risk to RABV infection. These findings highlight a huge challenge to national rabies programs and subsequent elimination of the disease from Nigeria, considering that majority of dogs are confined to rural communal areas, where parenteral dog vaccination is not routinely undertaken.

Key Words Lyssavirus antigen; DFA; dogs; ELISA; rabies antibodies

P 033 >

CLINICOPATHOLOGICAL FEATURES OF DOGS INFECTED WITH BABESIA GIBSONI

Angel Almendros,Karen Chan

City University of Hong Kong

Introduction

Babesia gibsoni infection in dogs has a wide spectrum of clinical manifestations and clinicopathological findings which can sometimes lead to diagnostic challenges for the clinician. Whereas these have been described for other species such as B. rossi it has not thoroughly been done for B. gibsoni.

Objectives

This project aims to describe and analyze clinicopathological features of dogs infected with B. gibsoni in Hong Kong.

Methods

This is a retrospective study where medical records of 108 dogs presented to an emergency and specialty care hospital in Hong Kong from 2013 to 2023 that tested positive for B. gibsoni by PCR were reviewed. Clinical signs, hematology, serum biochemistry, urinalysis and urine protein, pancreatic lipase immunoreactivity and clotting times results were analyzed.

Results

The most consistent clinicopathological findings included thrombocytopenia (90.7%), anemia (82.4%), reticulocytosis (52.8%), monocytosis (64.8%), eosinopenia (40.7%), prolonged APTT (58.8%), ALKP (30.6%) and GGT elevation (21.2%).

Conclusions

This study provides a detailed description of clinical signs and analyzes hematological, serum biochemical, and urinalysis data from dogs infected with B. gibsoni in Hong Kong. Through these descriptions we provide insights for veterinarians to better understand and prompt specific investigation for B. gibsoni, thus achieving timely and appropriate management of the disease.

Key Words anaemia, Babesia gibsoni; clinicopathological features; haematology; serum chemistry; thrombocytopenia

P 034 >

A MOLECULAR SURVEY OF CANINE TICK-BORNE PATHOGENS AND ASSOCIATED HEMATOLOGICAL ALTERATIONS IN NEPAL

Somnath Aryal,Rebanta Kumar Bhattarai,Kamana Thapa

Agriculture and Forestry University

Introduction

Babesiosis, hepatozoonosis, ehrlichiosis, anaplasmosis, and borreliosis in dogs are major tick-borne emerging public health issues in South Asia. However, in Nepal, their epidemiological data are scarce because canine tick-borne diseases are generally neglected or less explored.

Objectives

To determine the prevalence of major tick-borne pathogens in the dog population of Nepal and associated hematological alterations.

Methods

Blood samples were collected from stray and pet dogs from three major cities of Nepal and subjected to hematological analysis and PCR amplification to target and identify the selected species. Ticks infesting sampled dogs were collected and identified by morphometry.

Result

Overall prevalence of canine tick-borne pathogens was 31.09%. Among the 341 blood samples analyzed, 26.09% were positive for Babesia spp., 5.87% for Ehrlichia spp., 3.52% for Hepatozoon spp. and 2.93% for Anaplasma spp. DNA from Borrelia spp. was not amplified. The prevalence of tick infestation was 27.86%, with Rhipicephalus sanguineus being the most prevalent (71.23%), followed by Hemophysalis spp. (7.31%) and Dermacentor spp. (1.37%) The multiple logistic regression analysis showed geographic location, type of dog (stray or pet), and body condition score are potential risk factors (OR= 0.40, 2.16, 0.73; $p<0.01$, $p<0.05$, $p<0.05$ respectively) for the presence of canine tick-borne pathogens. Hematological analysis showed a significant association of anemia and thrombocytopenia with the presence of Babesia spp. ($p<0.01$, $p<0.05$ respectively), lymphocytosis with Hepatozoon spp. ($p<0.001$) and thrombocytopenia with Ehrlichia spp. ($p<0.05$).

Conclusion

This study found at least four species of canine tick-borne pathogens and three genera of tick, affecting dogs in Nepal.

Key Words Tick-borne diseases; Hematology; Risk factors; Dogs; PCR

P 035 >

MOLECULAR EPIDEMIOLOGY AND PHYLOGENETIC ANALYSIS OF FELINE CALICIVIRUS IN BEIJING, CHINA

Daoqi Wang[1], *Yanli Lyu*[1,2]

1. China Agricultural University

2. China Agricultural University Veterinary Teaching Hospital

Introduction

Feline calicivirus (FCV) is an infectious pathogen in cats. The genetic variability and antigenic diversity of FCV pose challenges to effective control and prevention through vaccination. Enhancing our understanding of the epidemiological characteristics of FCV can contribute to better strategies against FCV infection.

Objectives

To investigate the prevalence of FCV in Beijing, explore the risk factors associated with FCV infection and elucidate its genetic evolutionary characteristics.

Methods

Cats (n=402) from China Agricultural University Veterinary Teaching Hospital (CAUVTH) were investigated from June to December in 2023. The association between risk factors and FCV infection was assessed. Completed genomes phylogenetic analyses were conducted to determine the phylogenetic relationships between strains. The amino acid sequences of the major capsid protein were analyzed to identify variability at different sites. Recombination analyses were performed on the isolates.

Results

The FCV-positive rate of the examined cats was 31.3%. Risk factors significantly associated with FCV infection were age, vaccination status and residential density. Phylogenetic analysis of completed genomes revealed a radial phylogeny, with a considerable genetic distance from the domestically widely used vaccine strain (FCV-255). Amino acid analysis of the major capsid protein revealed variable neutralizing antibody epitopes, while feline junctional adhesion molecule-A (fJAM-A) binding sites remained conserved. The first FCV recombinant isolate was detected in Beijing, originating from two 2019 isolates collected in the city.

Conclusions

This study elucidates the molecular epidemiology and genetic diversity of FCV in Beijing, which provides valuable insights for the development of effective measures for FCV prevention and control.

Key Words Cats; Feline calicivirus; Epidemiology; Genetic diversity; Phylogenetic analysis

Table 1. Univariate analysis of factors associated with feline calicivirus infection

Variable	Category	Proportion	Frequency (%)	$\chi 2$	*p* value
Overall		126/402	31.3		
Age	0-3 months	32/109	29.4	3.3932	0.1833
	4-12 months	49/131	37.4		
	>1 years	45/162	27.8		
Gender	Male	83/247	33.6	1.2602	0.2616
	Female	43/155	27.7		
Vaccination	Unvaccinated	55/148	37.3	11.581	0.003056
	Not proper	47/131	35.9		
	Proper	24/123	18.2		
Residential density	>=3 cats	30/58	51.7	16.395	0.0002754
	2 cats	38/110	34.5		
	1 cat	58/234	24.8		
Breed	Chinese domestic cats	53/136	39.0	12.18	0.0324
	British shorthair	23/94	24.5		
	Ragdoll	15/40	37.5		
	American shorthair	4/33	12.1		
	Doven	7/24	29.2		
	Others	24/75	32.0		

p < 0.30 was considered significant.

Table 2. Multivariate logistic regression analysis of factors associated with feline calicivirus infection

Variable	OR	95%CI	*p* value
Age			
0-3 months	0.99	0.51-1.94	0.985
4-12 months	2.20	1.25-3.94	0.007
>1 years	1.0*		
Gender			
Male	1.41	0.88-2.28	0.160
Female	1.0*		
Vaccination			
Unvaccinated	2.97	1.49-6.03	0.002
Not proper	2.79	1.52-5.29	0.001
Proper	1.0*		
Residential density			
>=3 cats	3.47	1.80-6.76	<0.001
2 cats	1.85	1.09-3.13	0.021
1 cat	1.0*		
Breed			
Chinese domestic cats	1.16	0.60-2.28	0.664
British shorthair	0.85	0.41-1.75	0.662
Ragdoll	1.52	0.64-3.60	0.339
American shorthair	0.33	0.08-1.03	0.074
Doven Rex	0.98	0.33-2.75	0.972
Others	1.0*		

p < 0.05 was considered significant.

OR, odds ratio; CI, confidence interval.

*Reference category.

Table 3. Information on recombination events of FCV-26 detected by RPD4 software

Recombinant	Major (Similarity)	Minor (Similarity)	*p*-value of 7 detection methods						
			RDP	GENECONV	BootScan	MaxChi	Chimaera	SiScan	Phylpro
FCV-26	MW088950.1	MW088952.1	1.661×10^{-54}	1.152×10^{-23}	2.789×10^{-48}	3.192×10^{-25}	4.049×10^{-29}	8.496×10^{-33}	1.248×10^{-10}

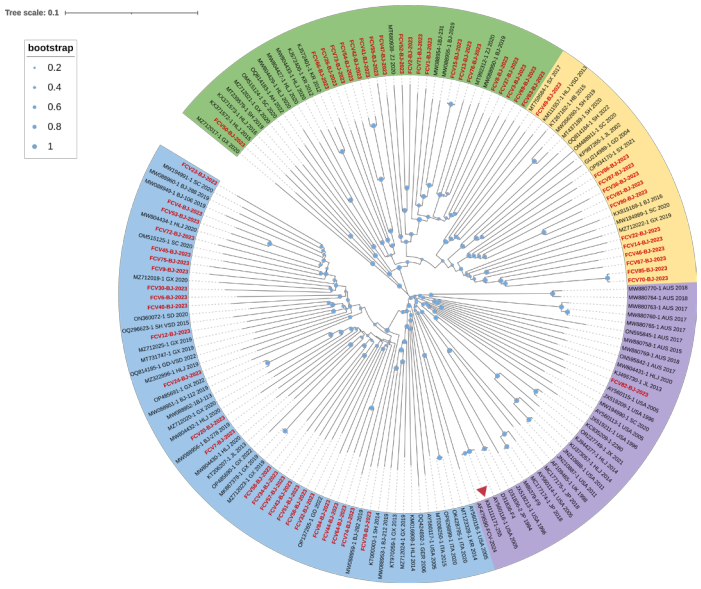


Fig.1 Phylogenetic tree based on full-length genomic sequence of 60 isolates and 100 FCV reference strains available in GenBank via the NJ method using the Kimura two-parameter model in the MEGA 11 software (11.0.13, Pennsylvania State University, State College, PA, USA) package with 1000 bootstrap. The isolates in this study are shown in "red" and the vaccine strains fcv255 is labeled with "red triangle". The scale bar indicates the number of nucleotide substitutions per site. Bootstrap values are represented by blue circles of different diameters at each clade node.

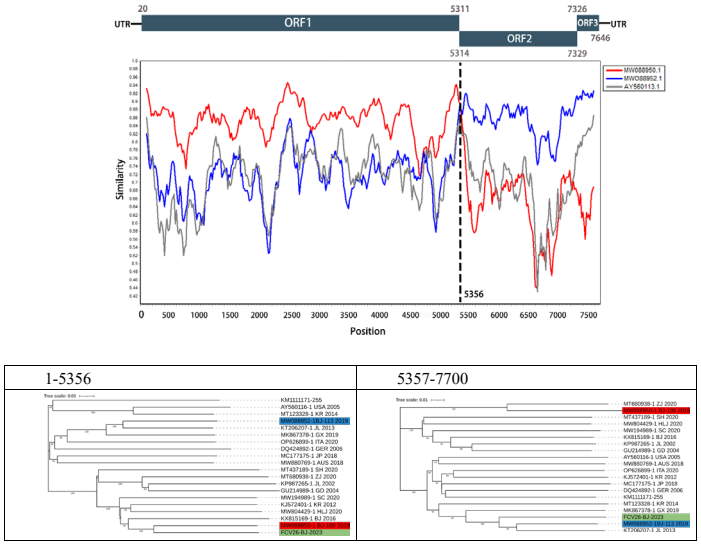


Fig.2 Recombination analysis of FCV-26 identified in this study. (A) Genome scale similarity comparisons of FCV-26 with FCV-BJ-108 isolate (red) and FCV-BJ-113 isolate (blue) using a sliding window. AY560113.1 as a reference strain shown in gray line. (window size: 200 bp, step size: 20 bp). Potential recombination breakpoints were marked by a black vertical dotted line with nucleotide sites at the bottom. (B) ML phylogenetic trees based on every recombinant fragment within FCV-26 and 17 reference FCV isolates are shown below the similarity plot. The isolate FCV-26 is labeled with a green background, and the putative recombinant major parent isolate FCV-BJ-108 is marked with a red background. The putative recombinant minor parent isolate FCV-BJ-113 is marked with a blue background.

P 037 >

PREVALENCE AND ANTIMICROBIAL RESISTANCE PROFILING OF STAPHYLOCOCCUS PSEUDINTERMEDIUS ISOLATED FROM DISEASED DOGS AND CATS, 2018-2022

Qian Wang[1],Haiqin Ding[2],Shizhen Ma[3,4],Siyu Chen[1,5],Yang Wang[3,4],Zhaofei Xia[1,5],Yanli Lyu[1,5]

1. Department of Clinical Veterinary Medicine, College of Veterinary Medicine, China Agricultural University, Beijing, 100193, China

2. College of Veterinary Medicine, China Agricultural University

3. Key Laboratory of Animal Antimicrobial Resistance Surveillance, Ministry of Agriculture and Rural Affairs, College of Veterinary Medicine, China Agricultural University, Beijing, 100193, China

4. Beijing Key Laboratory of Detection Technology for Animal-Derived Food Safety, College of Veterinary Medicine, China Agricultural University, Beijing, 100193, China

5. Clinical Laboratory Diagnostic Center, China Agricultural University Veterinary Teaching Hospital, Beijing, 100193, China

Introduction

Staphylococcus pseudintermedius is an opportunistic pathogen in dogs and cats, frequently associated with pyoderma and urinary tract infections. Methicillin-resistant S. pseudintermedius (MRSP) serves as a significant reservoir of antimicrobial-resistant genes in staphylococci, emphasizing the importance of monitoring antimicrobial resistance patterns and identifying risk factors for MRSP infection.

Objectives

This study aimed to assess antimicrobial resistance trends in S. pseudintermediu from 2018 to 2022, and identify MRSP infection risk factors in clinical pets in China.

Methods

S. pseudintermediu isolates were gathered from China Agricultural University Veterinary Teaching Hospital. Antimicrobial susceptibility testing followed CLSI guidelines, and was analyzed using WHONET. Statistical analysis included chi-square and cochran-armitage tests were used to determine the significance and trends of resistance rate from 2018 to 2022. Risk factors associated with MRSP infection was analysed using logistic regression.

Results

A total of 1003 S. pseudintermediu isolates were collected, accounting for 17.80% of all the clinical isolates from various infections. These S. pseudintermediu were predominantly from the skin and urinary tract of dogs and cats, and showed highest resistance to azithromycin (89.0%). Feline S. pseudintermediu displayed higher resistance rates to amoxicillin-clavulanate, enrofloxacin, oxacillin, and cefadroxil compared to canine isolates. Resistance rates to tested agents were relatively stable from 2018 to 2022, with a significant increase in florfenicol. Risk analysis highlighted skin infections and antimicrobial use within a year as MRSP infection factors.

Conlusions

The study emphasizes the urgency of continuous monitoring of antimicrobial resistance in S. pseudintermedius among pets in China and advocates for prudent antimicrobial administration to combat MRSP infections in veterinary practice.

Key Words Staphylococcus pseudintermedius,dogs and cats,antimicrobial resistance,risk factors

P 038 >

MOLECULAR EPIDEMIOLOGICAL INVESTIGATION OF SIX FELINE ENTERIC VIRUSES IN BEIJING

Hanyu Yang[1],Yanli Lyu[1,2]

1. China Agricultural University

2. China Agricultural University Veterinary Teaching Hospital

Introduction

Infection with feline enteric viruses may cause viral enteritis and diarrhea in cats. These viruses include common Feline coronavirus (FCoV) and Feline panleukopenia virus (FPV), as well as newly identified Feline astrovirus (FeAstV), Feline bocavirus (FBoV), Feline kobuvirus (FKoV), and Feline norovirus (FNoV).

Objectives

To investigate the prevalence of FCoV, FPV, FeAstV, FBoV, FKoV, and FNoV in Beijing, and evaluate their status and role in feline viral enteritis.

Material and methods

A total of 607 fecal samples were collected from both diarrheic and non-diarrheic felines at the China Agricultural University Veterinary Teaching Hospital. The infection status of FCoV, FPV, FeAstV, FBoV, FKoV, and FNoV was investigated using PCR and RT-PCR methods. The correlation between positive rates and diarrhea, age, season, and the number of cats in the household was analyzed using chi square test or Fisher's exact test.

Results

The positive rates of FCoV, FPV, FeAstV, FBoV, FKoV, and FNoV were 46.29% (281/607), 8.07% (49/607), 8.07% (49/607), 6.10% (37/607), 3.46% (21/607), and 0.99% (6/607), respectively. The correlation analysis results for the first five viruses showed a significant correlation (P 0.05) among FPV, FeAstV, FBoV, FKoV infection and diarrhea; All 5 viral infections are correlated with cat age (P 0.05), and the cats aged 0-4 months having the highest infection rate. Susceptible to FeAstV in winter and spring seasons. Multiple cat households are susceptible to FCoV.

Conclusion

FCoV and FPV infections still dominate in feline enteric virus infections in Beijing. Among the four new viruses, the positivity rates of FeAstV and FBoV were higher, followed by FKoV and FNoV.

Key Words feline; feces; enteric viruses; prevalence

P 039 >

APPLICATION OF IMPROVED TARGETING RNA WITH NEXT-GENERATION SEQUENCING IN PET CLINICAL PATHOGEN DETECTION

Yifei Li[1],Dongyan Shao[2],Shizhen Ma[2],Yang Liu[3],Wei Huang[3],Siyu Chen[1,3],Yanli Lyu[1,3],Yang Wang[2],Zhaofei Xia[1,3]

1. Department of Clinical Veterinary Medicine, College of Veterinary Medicine, China Agricultural University, Beijing, 100193, China

2. National Key Laboratory of Veterinary Public Health and Safety, College of Veterinary Medicine, China Agricultural University, Beijing 100193, China

3. Clinical Laboratory Diagnostic Center, China Agricultural University Veterinary Teaching Hospital, Beijing, China

Introduction

Microbiological cultivation techniques are essential in veterinary clinical pathogen detection. However, they present limitations when detecting pathogens with difficult-to-culture or low microbial loads pathogens. We developed a pathogen detection technology based on metagenomic next-generation sequencing (mtNGS) which provides a comprehensive observation of pathogens in clinical samples and enhances the accuracy and efficiency of veterinary pathogen detection.

Objectives

This study aims to improve mtNGS and apply it in veterinary clinical pathogen detection.

Material and methods

A comprehensive pathogen detection workflow was established based on different types of samples. Specific pre-processing steps were tailored for each sample category. RNA extraction was conducted and sequenced using Illumina or Oxford Nanopore Technologies (ONT). Subsequently, Bowtie2 was used to eliminate the host genome, and megahit was used to assemble the microbiome genome.

Results

Our new technology successfully detected thirteen cases, encompassing various types samples, such as aseptic body fluids samples (n=5), fecal samples (n=1), swab samples (n=6) and tissue samples (n=1). These samples were collected from dogs (n=5), cats (n=4), and parrots (n=4). All sample outcomes aligned with the validation results by traditional microbiological cultivation techniques such as culture or PCR.

Conclusion

Our mtNGS-based method proves highly beneficial in situations where there is a strong suspicion of infectious diseases, particularly when traditional diagnostics yield insufficient results or when there is suspected involvement of multiple pathogens in concurrent infections. This method shows particular promise in diagnosing complex clinical diseases that have been difficult to identify using traditional techniques.

Key Words pathogen detection; pathogen; infection

P 040 >

ANTIMICROBIAL RESISTANCE PROFILING AND RISK FACTOR OF PROTEUS SPP. INFECTIONS IN DOGS AND CATS IN CHINA

Qi An[1],Shizhen Ma[2,3],Liuqing Du[1],Yanli Lyu[1,4],Yang Wang[2,3],Zhaofei Xia[1,4],Siyu Chen[1,4]

1. China Agricultural University

2. Key Laboratory of Animal Antimicrobial Resistance Surveillance, Ministry of Agriculture and Rural Affairs, College of Veterinary Medicine, China Agricultural University, Beijing, 100193, China.

3. Beijing Key Laboratory of Detection Technology for Animal-Derived Food Safety, College of Veterinary Medicine, China Agricultural University, Beijing, 100193, China

4. Clinical Laboratory Diagnostic Center, China Agricultural University Veterinary Teaching Hospital, Beijing, 100193, China

Introduction

Proteus is an important opportunistic pathogen in veterinary clinical settings. The increased usage of antimicrobial agents in recent years has led to a rise in antimicrobial-resistant Proteus in veterinary clinics, posing challenges to infectious disease treatment.

Objectives

This study aims to assess the prevalence and distribution of Proteus from dogs and cats, focusing on their resistance patterns against commonly used antimicrobial agents. Moreover, the research seeks to analyze the risk factors for infections caused by multidrug-resistant (MDR) Proteus.

Methods

Proteus isolates were collected from China Agricultural University Veternary Teaching Hospital from 2018 to 2022. Susceptibility tests for 11 antimicrobial agents were conducted using the micro-broth dilution method. Results were interpreted based on the CLSI VET01S and CLSI M100 guidelines, with data analysis performed using WHONET. A logistic regression model was constructed to assess risk factors for MDR Proteus infections using SPSS.

Results

A total of 268 Proteus isolates were identified from diseased dogs and cats, predominantly from urinary tract (70.90%) and skin (20.52%). The highest resistance rate was observed against trimethoprim-sulfamethoxazole (56.40%). Most resistance rates exhibited a relatively stable trend between 2018 and 2022. The incidence of MDR Proteus was 51.60%. Animals with a history of antimicrobial agents usage were found to be 2.313 times more prone to MDR Proteus infection compared to those without such a history.

Conclusions

Proteus isolates from dogs and cats exhibited high resistance rates and MDR rates to several commonly used antimicrobial agents in veterinary clinical practice. A history of antimicrobial agents usage emerged as a risk factor for MDR Proteus infections.

Key Words Antimicrobial resistance, Proteus spp., risk factor, dog, cat

Table 1 Sample type and species distribution

Sort	Number（n=268）	Percent（%）
Species		
dog	241	89.93
cat	27	10.07
Sample type		
urinary tract	190	70.90
skin	55	20.52
respiratory tract	9	3.36
reproductive system	6	2.24
peritoneal effusion	3	1.12
digestive tract	3	1.12
pleural effusion	2	0.75

Table 2 Antimicrobial resistance rate of *Proteus* to different antibacterial agents

Antibiotic	Number（%）		
	all（n=250）	dog（n=224）	cat（n=26）
trimethoprim-sulfamethoxazole	141（56.40）	121（54.02）	20（76.92）
ampicillin*	92（51.70）	82（50.62）	9（64.29）
enrofloxacin	118（47.20）	100（44.64）	18（69.23）
levofloxacin	114（45.60）	96（42.86）	18（69.23）
florfenicol	104（41.60）	86（38.39）	18（69.23）
ceftriaxone	92（36.80）	80（35.71）	12（46.15）
gentamicin	84（33.60）	71（31.70）	7（50.00）
cefquinome	57（22.80）	46（20.54）	11（42.31）
amoxicillin-clavulanate*	24（13.56）	21（12.88）	3（21.43）
amikacin	18（10.00）	23（10.27）	2（7.69）
meropenem	3（1.20）	2（0.89）	1（3.85）

*Referring to the criteria in the American Clinical and Laboratory Standards Institute (CLSI) M07, *Proteus* only calculates Antimicrobial resistance rates in urinary tract samples.There were 177 strains of *Proteus*, 163 from dogs and 14 from cats.

Table 3 Antimicrobial resistance rate of *Proteus* in different years from 2018 to 2022

Antibiotic	2018（n=26）	2019（n=59）	2020（n=45）	2021（n=55）	2022（n=65）
amikacin	4（15.38）	1（1.60）	2（4.44）	8（14.54）	10（15.38）
ampicillin*	12（75.00）	16(42.11）	15（44.12）	21（49.90）	27（58.70）
cefquinome	3（11.54）	11(18.64）	9（20.00）	11（20.00）	23（35.38）
ceftriaxone	9（34.62）	21(35.59）	16（35.56）	21（38.18）	25（38.46）
levofloxacin	13（50.00）	23(38.98）	22（48.89）	29（52.73）	30（46.15）
meropenem	0（0.00）	0（0.00）	0（0.00）	2（3.63）	1（1.54）
amoxicillin-clavulanate*	2（12.50）	6（15.79）	1（2.86）	5（11.80）	10（21.74）
enrofloxacin	13（50.00）	25(42.37）	22（48.89）	26（47.27）	31（47.69）
florfenicol	15（57.69）	20(33.90）	15（33.33）	23（41.82）	31（47.69）
gentamicin	10（38.46）	18(30.51）	14（31.11）	17（30.91）	25（38.46）
trimethoprim-sulfamethoxazole	17（65.38）	30(50.85）	24（53.33）	27（49.09）	43（66.15）
multiple drug resistance	14（53.85）	28(47.46）	22（48.89）	28（50.91）	37（56.92）

*Referring to the criteria in the American Clinical and Laboratory Standards Institute (CLSI) M07, *Proteus* only calculates Antimicrobial resistance rates in urinary tract samples.There were 177 strains of *Proteus*, 163 from dogs and 14 from cats.

Table 4 Multivariate analysis of factors influencing infection with Multidrug-Resistant *Proteus*

Factors	B	S.E	Wald	*P*	OR（95%CI）	Up	Down
history of antibiotic use	0.839	0.409	4.197	0.040	2.313	1.037	5.161
history of infection	0.140	0.425	0.108	0.742	1.150	0.500	2.643
history of invasive procedures	-0.857	0.630	1.850	0.174	0.425	0.124	1.459
mixed infection	0.569	0.373	2.330	0.127	1.766	0.851	3.667

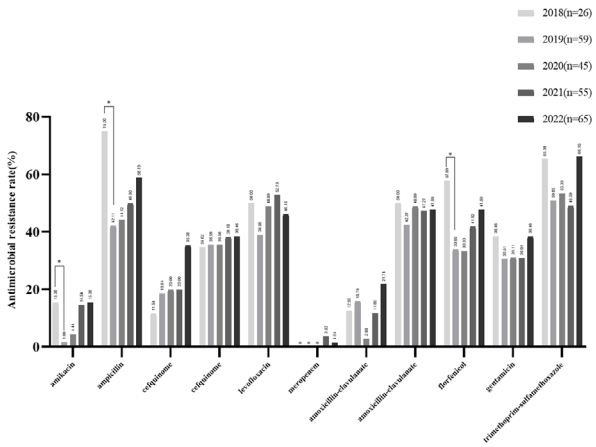


Figure The annual resistance rate of *Proteus* to different antibacterial drugs from 2018 to 2022

P 042 >

PREVAILING PRACTICES OF FILIPINO VETERINARIANS IN DIAGNOSING AND CONTROLLING CANINE HEARTWORM DISEASE IN THE PHILIPPINES

Remil Galay[1],Kim Ashley De La Cruz[1],Sixto Miguel Enrique Alimudin Carlos[2],Ivy Alvarez-Zialcita[3],Sherlyn Subiaga-De Lima[4],Yonzon Rouena Vivien[5]

1. University of the Philippines Los Baños

2. Makati Dog and Cat Hospital

3. Animal Wellness Veterinary Hospital and Clinics

4. Doc Alyn's Veterinary Clinic and Grooming Center

5. Zoetis Philippines

Key Words canine heartworm disease; diagnosis; treatment; prevention

Introduction

Canine heartworm disease (CHD) is a fatal vector-borne disease of dogs. Although epidemiological data is limited, CHD may be considered endemic in the Philippines due to the abundance of mosquitoes. Proper diagnosis, treatment, and prevention protocols are crucial in managing CHD. While there are international guidelines, there is no standard local protocol for CHD management in the Philippines.

Objective

The study was conducted to determine the current practices of licensed veterinarians in the Philippines related to CHD diagnosis, treatment, and prevention.

Methods

A questionnaire was developed to obtain information including veterinarians' profiles, diagnostic techniques, treatment, and prevention methods for CHD. After pre-testing, the survey was carried out during a national conference attended mostly by companion animal veterinarians last September 2023 in Metro Manila, Philippines.

Results

More than 700 veterinarians answered the survey. Most respondents employ an antigen test to diagnose CHD and do not perform tests for microfilaria differentiation. While most respondents said they follow an international guideline, most prefer the "slow-kill" method using macrocyclic lactone and deviate from the recommended adulticide treatment protocol. The client's budget influences the decision of most veterinarians regarding treatment protocol.

Conclusion

Most Filipino veterinarians do not follow the international standard on CHD management. The data gathered in this study emphasize aspects of CHD management that need to be improved. It can aid in developing a local standard protocol for CHD management in the Philippines

P 043 >

MOLECULAR PREVALENCE OF SELECT VECTOR-BORNE PATHOGENS IN THAI CLIENT-OWNED ANEMIC DOGS IN BANGKOK AND NAKHON SI THAMMARAT

Nida Chornarm[1],Sukullaya Ritthikulprasert[2],Mathurot Suwanruengsri[3],Melissa Brewer[4],Michael Lappin[1]

1. Colorado State University

2. Faculty of Veterinary Science, Chulalongkorn University

3. Faculty of Veterinary Science, Rajamangala University of Technology Srivijaya

4. Center for Companion Animal Studies, Colorado State University

Introduction

Vector-borne pathogens are common causes of anemia in dogs and can be fatal. Molecular diagnostic methods are not widely used in Thailand compared to thin blood smear examinations and commercial serological test kits.

Objectives

The objective of this cross-sectional study is to estimate the prevalence of select vector-borne pathogens in anemic client-owned dogs presented to 2 veterinary teaching hospitals in Thailand.

Material and methods

Whole blood samples from 217 anemic dogs (199 dogs in Bangkok and 18 dogs in Nakhon Si Thammarat) were evaluated using PCR assays to amplify the DNA of Babesia spp., Hemoplasmas, Bartonella spp., Ehrlichia spp., Anaplasma spp., Neorickettsia spp., Wolbachia spp., and Rickettsia spp.. The results of thin blood smear examination and a commercial kit (SNAP4DxPlus; IDEXX) were available from 98 and 109 dogs, respectively.

Results

DNA of at least one organism was amplified from 29 of the 217 dogs (13.4%) which included Ehrlichia canis (19 dogs; 8.8%), Rickettsia felis (5 dogs; 2.3%), Mycoplasma spp. (4 dogs; 1.8%), and Wolbachia spp. (2 dogs; 0.92%). The results of a thin blood smear were positive in 3 dogs (Ehrlichia canis, Hepatozoon canis, and Dirofilaria immitis microfilaria). Antibodies against Anaplasma spp. (12 dogs; 11%), Ehrlichia spp. (48 dogs; 44%), or Dirofilaria immitis antigen (4 dogs; 3.7%) were detected in 53 of 109 dogs (48.6%). Discordant results were detected amongst different tests for some dogs.

Conclusions

The results support that canine vector-borne diseases are common in these two areas of study and that molecular techniques should be combined with other diagnostic methods.

Key Words Vector-borne pathogens; Molecular prevalence; PCR; Thailand; anemic dogs

P 044 >

IMPROVED SEROLOGICAL ASSAYS FOR THE DIAGNOSIS OF CANINE LEISHMANIOSIS

Rouzbeh Mahdavi[1],Cristina Aira[2],Helena Redondo[2],Lissette López[2],Ramón Rovira[2],Paloma Rueda[2],Alba Fresco-Taboada[2],Ulrich Steinhoff[1]

1. Institute of Medical Microbiology and Hospital Hygiene, Phillips University of Marburg, 35043 Marburg, Germany.

2. Gold Standard Diagnostics Madrid S.A.

Introduction

Leishmaniasis is a zoonotic disease caused by Leishmania-genus parasites. It is a disease of slow and progressive evolution which can be treated if detected on time. Among affected species, dogs are of great importance since they act as parasite reservoir. To properly control transmission, rapid and reliable diagnostic tests are needed. Serology is the preferred method for diagnosis because it better correlates with disease. Most commercial serology tests are based on whole parasite or rK39, which have several limitations.

In this work, we developed two novel multi-species tests for improving serological detection of leishmaniasis.

For this purpose, a new recombinant kinesin antigen from Leishmania was bioinformatically developed based on the most conserved regions among different Leishmania species. These highly conserved regions were selected and, among the different designed proteins, the rKLi8.3 was chosen as the most immunogenic form. This rKLi8.3 antigen was used to develop an enzyme-linked immunosorbent assay (ELISA) and a lateral flow test (LFT).

These tests were evaluated with samples collected from symptomatic and asymptomatic dogs, from animals infected with other parasites, or from healthy dogs. The ELISA and LFT exhibited a sensitivity of 94% and 93%, and a specificity of 99% and 98% respectively; what improved parameters obtained with a commercial ELISA based on the whole parasite (Sn 84% and 88%). Biggest improvement was observed for asymptomatic dogs and with samples from other parasite infections (no cross-reactions with rKLi8.3).

In conclusion, the new tests based on the rKLi8.3 antigens had superior diagnostic performance than whole parasite assays.

Key Words Leishmania; multispecies; Improved serodiagnosis

P 045 >

NEW INSIGHTS INTO MATERNAL ANTIBODY TRANSFER IN DOGS

Lotta Henni Truyen[1],Sarah Woodyear[2],Ana Pimenta[2],Thomas Lonergan[2],Sarah Caddy[2]

1. University of Veterinary Medicine Hannover

2. Baker Institute, Cornell University

Introduction

Maternal antibodies (MatAbs) are transmitted from mother to puppy via colostrum or the placenta. Transferred antibodies can protect puppies against often lethal viruses such as Canine Distemper Virus (CDV) and Canine Parvovirus (CPV), before vaccines are first administered at six-eight weeks of age. Recent work has shown specific MatAbs subtypes are selectively transferred to human infants but it is unknown if this occurs in dogs.

Objectives

To determine how MatAbs delivered to pups in milk or via umbilical cord differ from antibodies in the maternal circulation.

Methods

We collected dam serum, colostrum and cord blood from 23 dogs undergoing caesarean section at a University Hospital. We developed direct ELISAs to determine the endpoint titer of maternal CPV and CDV-specific IgG (total) and IgG2 (stronger FcyR-binding subtype) antibodies found in all samples.

Results

We showed that virus-specific MatAbs are detectable in cord blood of most pups. For these cord samples, total virus-specific IgG was ~10 fold lower than dam serum. For colostrum samples we found that virus-specific IgG was ~10 fold higher than in maternal serum. In colostrum we also showed that virus-specific IgG2 MatAbs are preferably transferred compared to total IgG, and that virus-specific IgG2 transfer is higher for first litters.

Conclusions

We have demonstrated that cord blood can be successfully collected to show MatAbs delivered transplacentally likely provide immediate protection at birth. We have also calculated the first MatAb transfer ratios for CPV and CDV-specific MatAbs. Ongoing work aims to understand the mechanisms of canine MatAb transfer.

Key Words Maternal Antibody transfer; Canine Distemper Virus; Canine Parvovirus; colostrum; cord blood; IgG; IgG2

P 046 >

2022 ANTIMICROBIAL SUSCEPTIBILITY SURVEILLANCE REPORTS FROM CHINA ANTIMICROBIAL RESISTANCE SURVEILLANCE NETWORK FOR PETS (CARPET)

*Gege Zhang[1], Dongyuan Lin[2,3], Siyu Chen[1,4], Shizhen Ma[2,3], Yang Wang[2,3], Yanli Lyu[1,4], Zhihui Hao[1], Zhaofei Xia[1,5]**

(1.Department of Clinical Veterinary Medicine, College of Veterinary Medicine, China Agricultural University, Beijing, 100193, China; 2.Key Laboratory of Animal Antimicrobial Resistance Surveillance, Ministry of Agriculture and Rural Affairs, College of Veterinary Medicine, China Agricultural University, Beijing, 100193, China; 3.Beijing Key Laboratory of Detection Technology for Animal-Derived Food Safety, College of Veterinary Medicine, China Agricultural University, Beijing, 100193, China; 4.Clinical Laboratory Diagnostic Center, China Agricultural University Veterinary Teaching Hospital, Beijing, China)

**Correspondences to Zhaofei Xia drxia@126.com*

Introduction

As a result of the growth of the pet medical industry, antimicrobial agents are increasingly being used in pet, AMR is becoming prevalent among bacteria of pet origin. Close interaction between humans and pets heightens the risk of transmitting antimicrobial-resistant bacteria. Carpet is committed to AMR monitoring the resistance profiles of clinical bacterial pathogens from companion animals.

Objectives

To monitor the drug resistance of clinical isolates from pet medical institutions across major China regions, providing a basis for the rational application of antimicrobial drugs in the clinic.

Methods

Samples from provincial companion animal hospitals across China were analyzed at CARPet's central lab at China Agricultural University Veterinary Teaching Hospital. Procedures included isolation, purification, identification, and antimicrobial susceptibility testing following CLSI and EUCAST guidelines. Data analysis was performed using WHONET software version 2022, with resistance rates assessed by chi-square tests and resistance trends from 2018 to 2022 analyzed using Cochran-Armitage trend tests.

Results

We tested 1100 isolates from dogs and cats in 25 Chinese provinces, categorizing them by species and source. The most common were Escherichia coli (21.2%) and Staphylococcus pseudintermedius (17.8 %). Enterococcus faecalis showing generally higher resistance than Enterococcus faecium, notably to amoxicillin clavulanic acid, enrofloxacin, and florfenicol. Acinetobacter spp. had the highest resistance to florfenicol (58.8%) but lower to other antibiotics (0-35.3%). Pseudomonas spp. had low resistance (0-20%) to all tested antibiotics, and coagulase-positive Staphylococcus spp. were more resistant than coagulase-negative strains to most antimicrobials.

Conclusions

There are significant resistance levels to common antimicrobials in pets, emphasizing the need for enhanced monitoring of pet bacterial resistance.

Key Words Antimicrobial resistance;Surveillance network;Pets;China;2022

Table 1 Distribution of canine and feline clinical isolates by sample type in 2022

Sample Types	Canine	Feline	Total
Urinary system	320	189	509
Skin	178	104	282
Respiratory system	30	101	131
Reproductive system	30	2	32
Digestive system	22	26	48
Ascites	22	11	33
Pleural effusion	6	24	30
Others	19	16	35
Total	627	473	1100

Note: "Others" includes abdominal lymph nodes, abdominal cysts, bone tissue and orthopaedic implants, etc. The "digestive system" includes the gastrointestinal tract and the liver and gallbladder. "Respiratory system" includes tracheal lavage, nasal secretions, pharyngeal swabs, and frontal sinus secretions.

Table 2 Detection of clinical isolates from canine and feline by genus in 2022

Genus	Total	Canine	Feline
Staphylococcus spp.	25.2%	30.8%	17.8%
Escherichia spp.	21.3%	22.2%	20.1%
Enterococcus spp.	12.6%	8.8%	17.8%
Pseudomonas spp.	6.9%	6.5%	7.4%
Proteus spp.	5.9%	8.1%	3.0%
Klebsiella spp.	3.8%	4.0%	3.6%
Streptococcus spp.	3.5%	3.5%	3.6%
Burkholderia spp.	3.3%	4.1%	2.1%
Achromobacter spp.	3.0%	4.1%	1.5%
Pasteurella spp.	2.7%	0.5%	5.7%
Corynebacterium spp.	2.3%	1.3%	3.6%
Acinetobacter spp.	1.5%	1.4%	1.7%
Neisseria spp.	1.5%	0.8%	2.5%
Enterobacter spp.	1.5%	1.0%	2.1%
Stenotrophomonas spp.	1.0%	0.3%	1.9%
Others	3.9%	2.6%	5.7%

Table 3 Top three systemic strain isolations of canine and feline strains, 2018-2022

	Origins (Total Number)	Species	Percentage (number)
Canine	Urinary system	*Escherichia coli*	24.3%（432）
		Staphylococcus pseudintermedius	20.7%（367）
		Proteus mirabilis	9.8%（174）
	Skin	*Staphylococcus pseudintermedius*	37.5%（421）
		Pseudomonas aeruginosa	9.6%（108）
		Escherichia coli	6.5%（73）
	Respiratory system	*Staphylococcus pseudintermedius*	12.5%（40）
		Escherichia coli	10.3%（33）
		Bordetella bronchiseptica	5.0%（16）
Feline	Urinary system	*Escherichia coli*	25.2%（207）
		Enterococcus faecium	17.7%（145）
		Enterococcus faecalis	9.5%（78）
	Respiratory system	*Pseudomonas aeruginosa*	12.5%（49）
		Pasteurella multocida	11.7%（46）
		Escherichia coli	6.9%（27）
	Skin	*Staphylococcus felis*	10.3%（37）
		Staphylococcus pseudintermedius	8.9%（32）
		Pseudomonas aeruginosa	7.0%（25）

Table4 Antimicrobial resistance and sensitivity rates of strains in the top 3 systems of isolation rate in feline isolates, 2018-2022

System	Urinary system						Respiratory system				Skin					
Medicines	*Escherichia coli*		*Enterococcus faecium*		*Enterococcus faecalis*		*Pseudomonas aeruginosa*		*Escherichia coli*		*Staphylococcus felis*		*Staphylococcus pseudintermedius*		*Pseudomonas aeruginosa*	
	(n1=207) (n2=203)		(n1=145) (n2=128)		(n1=78) (n2=75)		(n1=49) (n2=46)		(n1=27) (n2=27)		(n1=37) (n2=33)		(n1=32) (n2=27)		(n1=25) (n2=24)	
	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate
Ampicillin	61.6	36.0	/	/	/	/	/	/	88.9	11.1	/	/	/	/	/	/
Florfenicol	30.0	10.3	37.5	6.3	18.7	12.0	/	/	37.0	0.0	21.2	54.5	18.5	22.2	/	/
Ceftriaxone	34.5	65.0	/	/	/	/	/	/	74.1	25.9	/	/	/	/	/	/
Levofloxacin	28.6	64.5	/	/	/	/	13.0	71.7	33.3	63.0	/	/	/	/	12.5	66.7
Cefquinome	25.6	69.0	/	/	/	/	10.9	69.6	48.1	25.9	/	/	/	/	4.2	79.2
Enrofloxacin	28.6	63.5	97.7	0.0	30.7	8.0	23.9	23.9	29.6	59.3	15.2	72.7	66.7	25.9	25.0	33.3
Trimethoprim-sulfamethoxazole	28.6	71.4	/	/	/	/	/	/	44.4	55.6	3.0	97.0	55.6	44.4	/	/
Doxycycline	31.5	58.1	83.6	16.4	68.0	17.3	/	/	44.4	40.7	9.1	87.9	74.1	25.9	/	/
Gentamicin	21.7	77.3	/	/	/	/	21.7	67.4	44.4	55.6	12.1	84.8	37.0	33.3	8.3	79.2
Amoxicillin-clavulanate	11.3	68.5	93.8	6.2	0.0	100.0	/	/	11.1	66.7	3.0	97.0	55.6	37.0	/	/
Amikacin	8.4	86.2	/	/	/	/	10.9	80.4	18.5	77.8	/	/	/	/	8.3	87.5
Meropenem	3.9	96.1	/	/	/	/	10.9	87.0	7.4	92.6	/	/	/	/	4.2	95.8
Colistin	1.5	98.5	/	/	/	/	/	/	0.0	100.0	/	/	/	/	/	/
Tigecycline	0.0	100.0	/	/	/	/	/	/	0.0	100.0	/	/	/	/	/	/
Azithromycin	/	/	97.7	0.8	80.0	6.7	/	/	/	/	33.3	66.7	85.2	14.8	/	/
Rifampin	/	/	85.2	11.7	53.3	18.7	/	/	/	/	6.1	90.0	0.0	92.6	/	/
Cefalexin	/	/	/	/	/	/	/	/	/	/	6.1	93.9	59.3	40.7	/	/
Ceftiofur	/	/	/	/	/	/	/	/	/	/	3.0	97.0	48.1	48.1	/	/
Oxacillin	/	/	/	/	/	/	/	/	/	/	3.0	97.0	63.0	37.0	/	/
Fusidic Acid	/	/	/	/	/	/	/	/	/	/	3.0	97.0	3.7	96.3	/	/
Vancomycin	/	/	0.0	100.0	0.0	100.0	/	/	/	/	0.0	100.0	0.0	100.0	/	/
Linezolid	/	/	3.1	82.8	6.7	84.0	/	/	/	/	0.0	100.0	0.0	100.0	/	/
Daptomycin	/	/	7.0	93.0	1.3	90.7	/	/	/	/	0.0	100.0	0.0	100.0	/	/

n1: Number of strains isolated

n2:Number of strains for antimicrobial susceptibility test

Table5 Antimicrobial resistance and sensitivity rates of strains in the top 3 systems of isolation rate in canine isolates, 2018-2022

System	Urinary system						Skin						Respiratory system			
Medicines	*Escherichia coli*		*Staphylococcus pseudintermedius*		*Proteus mirabilis*		*Staphylococcus pseudintermedius*		*Pseudomonas aeruginosa*		*Escherichia coli*		*Staphylococcus pseudintermedius*		*Escherichia coli*	
	(n1=432) (n2=403)		(n1=367) (n2=346)		(n1=174) (n2=162)		(n1=421) (n2=391)		(n1=108) (n2=96)		(n1=73) (n2=66)		(n1=40) (n2=35)		(n1=33) (n2=25)	
	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate	resistance rate	sensitivity rate
Ampicillin	55.8	43.2	/	/	50.6	48.8	/	/	/	/	66.7	33.3	/	/	76	24
Florfenicol	39.5	6.5	11	46.8	43.2	35.2	13.6	31.5	/	/	45.5	3	14.3	28.6	64	0
Ceftriaxone	38.5	61.3	/	/	40.7	57.4	/	/	/	/	53	47	/	/	68	32
Levofloxacin	31	56.1	/	/	45.7	50	/	/	15.6	74	42.4	42.4	/	/	56	40
Cefquinome	30.8	63	/	/	23.5	58	/	/	9.4	68.8	45.5	47	/	/	64	32
Enrofloxacin	28.8	54.1	54.9	21.4	48.1	40.7	62.7	16.4	18.8	32.3	40.9	37.9	68.6	8.6	56	40
Trimethoprim-sulfamethoxazole	26.8	73.2	58.7	41.3	58	42	64.7	35.3	/	/	36.4	63.6	62.9	37.1	64	36
Doxycycline	26.6	67.5	85.3	13.9	/	/	85.2	14.3	/	/	39.4	51.5	91.4	8.6	60	32
Gentamicin	20.6	78.2	22	47.4	35.2	59.3	33	31.2	17.7	62.5	30.3	69.7	25.7	40	56	44
Amoxicillin-clavulanate	11.7	69.2	33.5	58.7	13	74.1	46.5	49.1	/	/	9.1	71.2	57.1	40	28	52
Amikacin	4	93.1	/	/	13	57.4	/	/	11.5	65.6	7.6	90.9	/	/	36	60
Meropenem	3	97	/	/	1.2	98.8	/	/	3.1	93.8	6.1	93.9	/	/	8	92
Colistin	2.2	97.8	/	/	/	/	/	/	/	/	1.5	98.5	/	/	4	96
Tigecycline	0	99.8	/	/	16	24.7	/	/	/	/	0	100	/	/	0	100
Azithromycin	/	/	87	12.7	/	/	89.5	10.5	/	/	/	/	94.3	5.7	/	/
Cefalexin	/	/	38.2	61.8	/	/	50.6	49.4	/	/	/	/	54.3	45.7	/	/
Ceftiofur	/	/	27.2	70.2	/	/	40.9	54.2	/	/	/	/	51.4	45.7	/	/
Oxacillin	/	/	35.3	64.7	/	/	48.6	51.4	/	/	/	/	57.1	42.9	/	/
Fusidic Acid	/	/	2	98	/	/	1.8	98.2	/	/	/	/	2.9	97.1	/	/
Rifampin	/	/	1.2	96.5	/	/	0.8	98.2	/	/	/	/	0	100	/	/
Vancomycin	/	/	0	99.7	/	/	0	100	/	/	/	/	0	100	/	/
Linezolid	/	/	0	100	/	/	0.3	99.7	/	/	/	/	0	100	/	/
Daptomycin	/	/	0	100	/	/	0.3	99.7	/	/	/	/	0	100	/	/

n1: Number of strains isolated

n2:Number of strains for antimicrobial susceptibility test

Integrative medicine

P 049 >

A CLINICAL EFFECT STUDY OF ACUPUNCTURE ON ADJUNCT POSTOPERATIVE ANALGESIA OF THE STIFLE JOINT IN DOGS

Han Zhang[1],Zhankui Yuan[1,2],Shuaiyu Wang[1,2]

1. China agricultural university veterinary teaching hospital

2. College of Veterinary Medicine, China Agricultural University

Introduction

Postoperative pain from stifle joint surgery significantly impacts quality of life and recovery in dogs. Analgesics, commonly used for pain management, partly have adverse effects. Now, acupuncture is a safe and effective non-pharmaceutical method, and to become a part of the multi-mode approach. It works through local, segmental, and suprasegmental mechanisms.

Objective

To investigate the clinical efficacy of acupuncture on adjunct post-operative analgesia of stifle joint in dogs through a prospective parallel controlled trial.

Methods

20 dogs underwent unilateral stifle joint surgery. The control group (n=10) only received analgesia. The acupuncture group (n=10) received acupuncture in nine acupoints in addition. Electroacupuncture was used at GV-20 and ST-36, and dry needles at the other acupoints. Each acupuncture treatment lasted 20 min, which was performed immediately after recovery and then q 24 hrs for 72 hrs. CMPS-SF, CSU-CAPS, joint operation score, lamenss score, stifle axis diameter and ROM were recorded. Wilcoxon's test and Mann-Whitney U test were used for statistical analysis.

Results

A total of 16 dogs completed the study. It found that the acupuncture group had lower scores in CMPS-SF, CSU-CAPS, and joint operation compared to the control group. Significant differences were observed in CMPS-SF, CSU-CAPS, joint operation, the changes of stifle axis diameter and ROM ($P < 0.05$). No significant differences were found in lameness score, stifle axis diameter, ROM, and additional analgesics used postoperatively ($P > 0.05$).

Conclusions

Acupuncture on specific points as adjunct analgesia can enhance analgesic effect, improve lameness, swelling, and motion range of the affected limb after stifle joint surgery in dogs.

Key Words dogs, post-operative pain, stifle joint surgery, acupuncture, adjunct analgesia

Internal medicine (other)

P 051 >

ENDOSCOPIC GUIDED OESOPHAGEAL TUBE PLACEMENT IS ASSOCIATED WITH FEWER COMPLICATIONS AND MORE ACCURATE PLACEMENT, REGARDLESS OF CLINICIAN EXPERIENCE LEVEL IN A CADAVER STUDY.

Samantha Reeves,Tiffany Markham,Burchell Richard

North Coast Veterinary Specialist

Introduction

Oesophagostomy tube (OT) placement is important in small animal practice to feed anorexic patients. Recent studies show a high complication rate for OT's, with tube dislodgement being common.

Objectives

Comparison of an endoscopically guided technique (EGT) to the traditional approach (TA) in a cadaver study to determine if the procedure was simpler to teach to inexperienced clinicians.

Methods

Oesophagostomy tubes were placed into cadavers in a randomised order, and the operators were blinded to the accuracy of placement until study completion. An experienced internal medicine diplomate (EX), registrar (RG) and GP veterinarian (GP) with no prior endoscopic experience performed three each of the EGT and the TA. The procedures were timed, complications were recorded, and the difficulty was ranked.

Results

The EX mean placement time (MPT) for EGT and TA was 180sec and 80 sec, respectively. All EGTs were accurately placed with no complications, whilst 1/3 TA tubes were inaccurately placed. The RG MPT for EGT and TA was 365sec and 98 sec, respectively with only 1/3 EGTs being inaccurately placed, and 0/3 TA being accurately placed. The GP MPT for EGT and TA was 340sec and 394sec, respectively with 2/3 EGT being accurately placed, and 0/3 TA being accurately placed. For all three operators, confidence of placement was highest for the EGT.

Conclusions

In a cadaver study, EGT provided greater accuracy of placement and higher confidence and further studies are needed to ascertain if this would result in lower complication rates in a hospital setting.

Key Words dog; endoscopy, oesophageal tube; traditional

P 052 >

COMPARATIVE ANALYSIS OF RENAL BIOMARKER AND ELECTROLYTE PROFILES AND THEIR CORRELATION WITH CARDIAC FUNCTION IN DOGS WITH MYXOMATOUS MITRAL VALVE DISEASE

Zi Ping Leong

Leong VetCardio Services

Introduction

Cardiorenal syndrome is a comorbidity in dogs with myxomatous mitral valve disease (MMVD) and monitoring renal function and electrolytes is crucial for effective treatment. However, the optimal biomarkers for assessing renal function and understanding their correlation with cardiac parameters remains unclear.

Objectives

The study compared renal and electrolyte profiles in dogs at stages C and B of MMVD and elucidated correlations between renal biomarkers and cardiac function to identify potential biomarkers for the cardiorenal syndrome.

Methods

Thirty dogs were divided into stages B (B1 and B2) and C in accordance with the ACVIM staging. Blood pressure measurement, plasma biochemistry, and echocardiography were performed. Data between groups were compared for statistical differences using ANOVA. Correlations between each parameter were determined using the Pearson correlation test.

Results

The stage C group had significantly lower plasma sodium (150.3±3.3 mmol/L) and chloride (109.3±3.0 mmol/L) levels. SDMA and cystatin-C demonstrated a high correlation (=0.92). The SDMA level was negatively correlated with sodium (=−0.65) and systolic blood pressure (=−0.60) but positively correlated with plasma magnesium (=0.54), fractional shortening (FS) (=0.65), and ejection fraction (EF) (=0.64). By contrast, cystatin-C was positively correlated with creatinine (=0.53), FS (=0.58), and EF (=0.55), whereas the creatinine level was positively correlated with magnesium (=0.61), FS (=0.54), and EF (=0.54) but negatively correlated with left ventricular internal dimension in systole (=−0.52).

Conclusion

MMVD progression may be associated with decline in plasma sodium and chloride levels. Compared to cystatin-C and creatinine, SDMA appears to be the most useful renal marker for evaluating cardiorenal syndrome.

Key Words MMVD, cardiorenal syndrome, SDMA, cystatin C

P 053 >

COMPARATIVE ANALYSIS OF PEPTIDE MASS FINGERPRINT PATTERNS IN MMVD STAGE C DOGS WITH AND WITHOUT AZOTEMIA USING MALDI-TOF MS

Poonavit Pichayapaiboon[1],Sekkarin Ploypetch[3],Janthima Jaresitthikunchai[2],Sittiruk Roytrakul[2],Walasinee Sakcamduang[3],Rungrote Osathanon[3],Wachira Trakulchaisri[4],Ruangrat Buddhirongawatr[3]

1. Mahidol University

2. Functional Ingredients and Food Innovation Research Group, National Center for Genetic Engineering and Biotechnology, National Science and Technology Development Agency, Pathum Thani, Thailand

3. Department of Clinical Sciences and Public Health, Faculty of Veterinary Science, Mahidol University, Nakhon Pathom, Thailand

4. Prasu-Arthorn Animal Hospital, Faculty of Veterinary Science, Mahidol University, Nakhon Pathom, Thailand

Introduction

Cardiorenal syndrome involves the interplay between heart and kidney dysfunctions. Myxomatous mitral valve disease (MMVD) can lead to renal complications due to compensatory mechanisms and heart failure. Treatments for MMVD, such as diuretics and angiotensin-converting enzyme inhibitors, may exacerbate kidney disease. Traditional serum creatinine monitoring lacks sensitivity. Therefore, techniques like Matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS), with high sensitivity and specificity, enhance early detection and monitoring of renal disease progression in MMVD dogs.

Objectives

To identify the serum peptide mass fingerprint (PMF) of MMVD stage C dogs with and without azotemia.

Methods

The study analyzed 24 serum samples: six each from dogs with CKD (CKD), MMVD stage C without azotemia (MMVD), MMVD stage C with azotemia (MMVDAZ), and healthy controls (CTRL). Clinical staging was determined by ultrasonography and clinicopathologic results. PMFs were classified using an Ultraflex III TOF/TOF mass spectrometer (1,000-20,000 Da). Principal component analysis (PCA) was used to analyze variance in the MS spectra.

Results

All 8 replicates of mass spectrum in each sample demonstrated the homogeneity within the sample. PMFs revealed the different peptidomic profiles from healthy controls, MMVD, MMVDAZ, and CKD. A PCA plot showed distinct clustered among these groups. Therefore, there are differentially expressed protein and peptide profiles in each group.

Conclusions

MALDI-TOF MS has potential to be used for rapid screening in serum of CKD, MMVD, MMVDAZ, and CTRL. Further studies using MALDI-TOF MS/MS for serum peptide peak selection to identify protein biomarkers with a larger population should be investigated.

Key Words Azotemia; Cardiorenal; Dog; MALDI-TOF MS; Proteomics

NeurologyNeurosurgery

P 055 >

DOGS WEIGHING LESS THAN 15 KG WITH CERVICAL DISC EXTRUSION TREATED WITH VENTRAL SLOT DECOMPRESSION

Emerson G.M. Siqueira,Sheila C. Rahal,Alessandra Melchert,Fátima M.C. Caldeira

School of Veterinary Medicine and Animal Science, São Paulo State University (UNESP)

Introduction

Despite treatment options, intervertebral disc herniation remains challenging. The treatment choice and time point can influence the prognosis.

Objectives

Retrospectively evaluate dogs with cervical intervertebral disc extrusion treated with ventral slot decompression performed by a single surgeon.

Methods

The medical records of 45 dogs weighing less than 15 kg (10.35 ± 3.88) were evaluated over 6.8 years.

Results

The mean duration of clinical signs before surgery was 34.16 days (± 26.86). At preoperative assessment, all dogs had neck pain, with only this sign in three dogs (Grade 1). Nine had ambulatory tetraparesis and 33 were non-ambulatory (Grade 4). A moderate positive correlation occurred between initial neurologic status and preoperative ambulation. The site of disc herniation was located at the C2-C3 (n=15), C3-C4 (n=10), C4-C5 (n=7), C5-C6 (n=9), C6-C7 (n=2), and C7-T1 (n=2). The intraoperative complications were venous sinus injury (n=4), disc material adhered to the dura mater (n=4), agonal breathing (n=2), and vertebral artery injury resulting in death (n=1). The postoperative complications included respiratory support (n=1), worsening of ataxia (n=2), aggravation of neck pain (n=2), and surgical wound infection (n=4), with one euthanasia due to venous sinus injury. Three other animals died or were euthanized due to alterations unrelated to the surgical technique. At 90 days postoperative, 36 animals had Grade 0 (normal) and three had Grade 2.

Conclusions

Dogs weighing less than 15 kg treated with ventral slot decompression had a success rate of 95.2%, considering only the complications associated with the surgical procedure.

Key Words surgery; disc; extrusion; dog

P 056 >

CHARACTERISATION AND PROGNOSTIC VALUE OF CEREBROSPINAL FLUID SAMPLES AND MATRIX METALLOPROTEINASE-9 PROTEIN IN CANINE PATIENTS

Jeanine Sandy,Pak Chun Hui,Omid Nekouei Jahromi,Rodolfo Cappello

City University of Hong Kong

Introduction

Cerebrospinal fluid (CSF) analysis is a primary diagnostic for investigating neurological diseases and inconclusive data currently exists regarding its prognostic usefulness in dogs.

Objectives

To identify common neurological conditions in dogs in Hong Kong and assess if routine CSF analysis and Matrix metalloproteinase-9 (MMP-9) can predict patient survival.

Methods

Medical records of 316 dogs attended to a large veterinary hospital in Hong Kong between Dec 2019 and Jan 2023 with neurological signs and CSF analysis results were reviewed. CSF analysis results were categorized into normal, pleocytosis, and protein-elevated subgroups. Potential associations between CSF-category and short- and long-term patient survival were evaluated using Chi-square or Fisher's exact tests. MMP-9 (ng/ml) was measured in 32 prospectively collected CSF samples from 2023 to 2024 and compared between the normal, mild, and moderate/severe pleocytosis CSF using a simple linear regression. Potential association between MMP-9 and patient survival was further evaluated using Mann-Whitney Test.

Results

Most common breeds presented for neurological complaints were Poodle (98/316), Chihuahua (33) and mongrel (28). The case mean age was 8 years. Meningoencephalitis of unknown etiology (MUE) and idiopathic epilepsy (IE) were most common. Pleocytosis, protein elevation, and protein-cytological dissociation were negatively associated with short-term survival ($P<0.05$), but not with long-term survival. MMP-9 was significantly higher in moderate/severe pleocytosis than mild pleocytosis group ($P<0.05$), but MMP-9 level was not associated with patient survival ($P>0.05$).

Conclusions

MUE and IE were diagnosed mostly in mature/senior dogs. Pleocytosis and protein-elevation (regardless of concurrent pleocytosis) were negative short-term survival prognosticators.

Key Words MMP-9; CSF; canine; pleocytosis

Nutrition

P 058 >

PERCEPTIONS OF FOUNDATION PHASE STUDENT VETERINARY PROFESSIONALS REGARDING NUTRITION INFORMATION SOURCES AND UNCONVENTIONAL DIET CHOICE.

Rachel Lumbis[1],*Samantha Fontaine*[1],*John Reilly*[2],*Philippa Yam*[1]

1. University of Glasgow

2. University of Strathclyde

Introduction

The global rise of diet-related non-communicable diseases, combined with increased popularity of alternative diets and greater access to unsubstantiated information means it is imperative that veterinary professionals provide fundamental, evidence-based nutrition advice.

Objectives

To establish the sources of nutrition information used by foundation phase student veterinary professionals. It further sought to ascertain their knowledge and perceptions of non-traditional diet choices.

Methods

An online survey was completed by first-year veterinary and veterinary nursing students in the UK and Republic of Ireland between October 2023 and January 2024. Recruitment involved non-probability, convenience purposive sampling, by email invitation. Questions pertained to self-perceived relevance of nutrition-related information sources, patient care and owner advice.

Results

Qualified veterinarians were perceived to be more knowledgeable about pet nutrition (73%, n=270) than veterinary nurses (53%, n=132). Veterinary healthcare professionals and journal articles ranked most valued sources of information, with media, social media, and friends/family least valuable. Evidence-based information for dietary decisions by owners (93%, n=213) and nutritional education (98%, n=226) was important. Yet only 53% (n=138) felt sufficiently knowledgeable to access evidence-based nutritional information. Few students believed cooked diets to be healthier than raw (37%, n=84), and risks of raw outweigh benefits (38%, n=88). Half of respondents were unsure about diet choices. Most veterinary (77%, n=67) and veterinary nursing students (87%, n=125) considered vegetarian diets unsuitable for dogs and cats.

Conclusion

Students enter their studies with preconceived ideas and potential misinformation about nutrition. Nutrition education must be adequately represented within curricula to protect animal and human health.

Key Words Nutrition information; unconventional diet; nutrition education; veterinary curriculum, veterinary school education

P 059 >

EFFECTS OF RAW MEAT-BASED DIET AND EXTRUDED FOOD ON BODY WEIGHT, BLOOD METABOLIC CHARACTERISTICS, NUTRIENT DIGESTIBILITY, AND GUT MICROBIOME IN KITTENS

Tengkun Yang[1],Jianmei Wang[1],Wenjing Geng[2],Ying Xu[3],Ben Lyttle[3],Shuyi Han[4],Siyu Chen[1],Zhaofei Xia[1]

1. College of Veterinary Medicine, China Agricultural University

2. Meilianzhonghe Veterinary Referral Center, Beijing , China

3. Real Petfood Pty Ltd, NSW, Australia

4. Shanchongshuifu Technology Development Co. Ltd, Beijing, China

Introduction

Raw meat-based diets (RMBD) is considered to be closer to the natural dietary composition of cats and the trend of feeding RMBD is gradually increasing.

Objectives

This study aims to investigate the effects of RMBD and extruded foods (EF) on the body weight, blood metabolic characteristics, nutrient digestibility, and gut microbiome of kittens.

Methods

Our study involved 23 2-month-old kittens, 12 in the RMBD group and 11 in the EF group. It lasted 54 days, including a 5-day pre-feeding and a 49-day formal trial period. On day 54, a blood sample was taken to test for complete blood count, serum biochemistry, inflammatory factors, immune factors and antioxidant indicators. All feces were collected last week for nutrient digestibility calculation, with fresh feces collected on day 54 for gut microbiome analysis.

Results

The results showed a significant increase in body weight in all kittens (P 0.001), but no significant difference between the two groups (P=0.173). Blood urea nitrogen (BUN) (P 0.001) and interleukin-6 (IL-6) (P=0.028) level in the RMBD group was significantly higher than that in the EF. There was no significant difference found in the digestibility of crude fat and crude protein. In terms of microbiome diversity, the α-diversity did not differ significantly between the two groups, but there was a significant difference in their microbial composition. In the RMBD group, Blautia, Clostridium sensu stricto 1, Peptostreptococcus, and Odoribacter were significantly enriched.

Conclusions

The results indicate that both RMBD and EF have similar effects on kittens and are well tolerated by them.

Key Words Raw meat-based diet, kitten microbiome, kitten nutrition

P 060 >

THE NUTRITION-RELATED EXPERIENCE OF FOUNDATION PHASE STUDENT VETERINARY PROFESSIONALS

Rachel Lumbis[1],*Samantha Fontaine*[1],*John Reilly*[2],*Philippa Yam*[1]

1. University of Glasgow

2. University of Strathclyde

Introduction

Nutrition is a critical aspect of veterinary care. Veterinarians must be skilled to recognise patients' nutritional needs and direct appropriate intervention. This may be managed by veterinary nurses/technicians therefore it is helpful that students can apply, at minimum, a foundation level of nutrition knowledge.

Objectives

To explore the nutrition-related experience that foundation phase student veterinary professionals have gained through pet ownership and work experience in small animal practice.

Methods

An online survey was completed by student veterinarians and veterinary nurses in the UK and Ireland from October 2023 – January 2024. Recruitment involved non-probability, convenience purposive sampling. Questions pertained to nutrition-related experience and education.

Results

Students were most nutritionally knowledgeable about dogs, cats, and rabbits and least about fish and birds. The most observed and completed clinical tasks by students were the administration of food via a bowl (83%, n=384) and assessment of body condition score (64%, n=296). Least experience was gained in muscle condition scoring (17%, n=77), placement and use of feeding tubes (respectively, 21%, n=98 and 24%, n=110), and calculation of energy requirement (26%, n=120). Students were more likely to have observed a client discussing their pet's diet choice, feeding management, body weight and condition with a veterinarian than a veterinary nurse or receptionist.

Conclusion

Fundamental components of nutritional assessment are not being overtly practised or observed by students. There is scope for improved teamwork in the provision of nutrition-related care. Further research will be conducted during students' professional stage study to identify advancements in nutrition experience.

Key Words Nutrition knowledge; nutrition education; veterinary school education; interprofessional practice; nutritional assessment

Oncology

P 062 >

A PILOT STUDY IN 19 DOGS WITH MALIGNANT MELANOMA TREATED WITH AN ANTI-PD-1 MONOCLONAL ANTIBODY (MP-001)

Yi Hu[1],Junli Feng[1],Shuaiyu Wang[1],Jingshu Xie[2],Youhong Su[2],Gebin Li[1]

1. China Agricultural University

2. Biocytogen Pharmaceuticals (Beijing) Co., Ltd.

Introduction

Canine malignant melanoma (CMM) are usually associated with a high degree of local invasiveness and metastatic propensity. Recent studies show that immunotherapy targeting PD-1 and PD-L1 are promising treatments for it.

Objectives

To assess the safety and efficacy of MP-001, a new canine anti-PD-1 monoclonal antibody, in the treatment of CMM.

Methods

This study was a single-center, open-label prospective pilot study. All cases were pathologically confirmed as CMM with measurable lesions at enrollment. MP-001 was administered every 2 weeks in a dose of 3 mg/kg, IV. Adverse events (AEs) and efficacy were graded according to the VCOG criteria. Retrospective data from 10 dogs were collected as a historical control. The Kaplan-Meier method was used to analyze the survival curve. Subgroup analyses of the predictive factors were performed.

Results

19 dogs with a medium age of 13 years were presented. AEs occurred in 8/19 (42.1%) dogs, with only 1 case of thrombocytopenia in grade . The median overall survival (OS) is 341 (63~923) days, which was significantly longer than the historical group (OS=56; P 0.0001). Among the 18 evaluable cases, responses to MP-001 included CR (n=6), PR (n=2), SD (n=4), and PD (n=6). The ORR and DCR are 44.4% and 66.7%. OS in dogs that without distant metastasis (P = 0.002), responded to the MP-001 (P=0.032) or with lower CRP at baseline (cutoff 7.95, P=0.004) was significantly prolonged.

Conclusion

MP-001 shows a good effect on CMM with limited AEs, and could be a promising agent with the support of more data.

Key Words canine; malignant melanoma; anti-PD-1 treatment

P 063 >

THE EVALUATION OF CARDIOTOXICITY AND CLINICAL OUTCOME BETWEEN TWO INJECTION TIMES OF DOXORUBICIN IN CANINE MULTICENTRIC LYMPHOMA

Shang-Lin Wang[1,2,*]

1 Institute of Veterinary Clinical Sciences, School of Veterinary Medicine, National Taiwan University, Taipei

2 National Taiwan University Veterinary Hospital, National Taiwan University, Taipei

Introduction

Doxorubicin is an anthracycline antitumor antibiotic with a cumulative cardiotoxicity. Human research shows that oxidative cardiotoxicity is correlated with the instantaneous concentration of doxorubicin in the blood. However, there is no relevant research in veterinary medicine.

Objectives

The aim of this study is to evaluate the degree of cardiotoxicity and clinical outcome between two injection times of doxorubicin in canine multicentric lymphoma.

Methods

Dogs diagnosed with multicentric lymphoma and treated with CHOP-based chemotherapy at National Taiwan University Veterinary Hospital were included in this retrospective study. Thirty-five dogs and forty-three dogs were categorized into fast-infusion group (within 30 mins) and slow-infusion group (over 60 mins).

Results

The median progression-free survival was 195 and 254 days in fast- and slow-infusion groups (P = 0.145). The median survival time was 312 and 389 days in fast- and slow-infusion groups (P = 0.345). The fraction shortening changed after complete chemotherapy was not significantly different between fast- and slow-infusion groups (P = 0.684).

Conclusions

Our results showed that injection time was not significantly related to cardiotoxicity and clinical outcome in lymphoma dogs who received CHOP-based chemotherapy.

Key Words canine; cardiotoxicity; doxorubicin; injection time; lymphoma

P 064 >

USING CRISPR-BASED WHOLE GENOME KNOCKOUT SCREENING TO FIND MOLECULAR TARGET IN CANINE ORAL MELANOMA

Keyi Tang,Nicholas Parkinson,Maciej Parys

The University of Edinburgh

Introduction

Oral melanoma is aggressive and metastasizes in canine. Current therapy choices are limited, stressing the need for new therapies.

Objectives

In this study, we employ a genome-wide strategy using CRISPR-based whole genome screening to identify new genetic dependencies which serve as potential therapeutic targets for oral melanoma in canines.

Methods

We developed the first canine-specific CRISPR-Cas9 whole genome knockout library, containing over 119,000 distinct single guide RNAs (sgRNAs) targeting more than 20,000 genes. Four oral melanoma cell lines and two fibroblast cells as a negative control were utilized for screening. Cells were cultured in 2D and 3D environments to compare CRISPR phenotypes, with 3D cultures being more realistic of in vivo tumors. Sequencing of the CRISPR-edited cells integrated sgRNAs was performed using Illumina sequencing, and data analysis was conducted using the MAGECK pipeline. We using shRNA and small molecule inhibitors with various methods to validate the selected target genes.

Results

Screening results revealed a large number of 'core fitness' genes in canine cells, but also a number of context-specific genes that seemed to be specific to melanoma cell lines. Melanoma-specific fitness genes included DNMT1, MAPK and SLC36A1, and inhibiting these genes with small molecule inhibitors showed a selective effect on survival of melanoma cells versus fibroblasts in vitro. Using shRNA to knock down these genes in melanoma cell line showed a result of cell arrest and senescence.

Conclusion

In oral melanoma, CRISPR whole genome knockout screening can find target genes to decrease cancer cell proliferation or induce senescence. We will apply this method to other companion animal cancers.

Key Words canine cancer, oral melamoma, CRISPR-Cas9, Whole genome screening, Canine-specific CRISPR library, Gene knockdown

P 065 >

A CASE REPORT: A STAGE IV ALVEOLAR RHABDOMYOSARCOMA DOG TREATED WITH ANTI-CANINE PD-1 IMMUNOTHERAPY

Wanlong Niu[1],Yi Hu[1],Junli Feng[1],Shuaiyu Wang[1],Jingshu Xie[2],Youhong Su[2],Gebin Li[1]

1. China Agricultural University

2. Biocytogen Pharmaceuticals (Beijing) Co., Ltd.

Introduction

Canine rhabdomyosarcomas are rare malignant mesenchymal neoplasms, which have a predilection for head and neck, bladder and cardiovascular. Diagnosis, treatment and prognosis of rhabdomyosarcoma are particularly difficult due to its rarity. Chemotherapy and radiation therapy are of less benefit for masses that cannot be surgically removed.

Objectives

To report a case with limb alveolar rhabdomyosarcoma that achieved partial response after 2 months of anti-PD-1 treatment and continuous response for 7 months.

Material and methods

A 11-year-old, female, spayed Golden Retriever was admitted to the China Agricultural University Veterinary Teaching Hospital for lameness on the left hind limb. Computed tomography (CT) scan disclosed a peripheral mass from the left iliac wing to the left proximal femur, involving multiple muscles, 9.93*7.81*6.03cm in size, with osteolysis of the left femur (Figure 1A-B). The histopathology examination and immunohistochemical staining revealed grade alveolar rhabdomyosarcoma (Figure 2). The final diagnosis of stage alveolar rhabdomyosarcoma was confirmed based on the findings above. The dog was treated with a canine anti-PD-1 monoclonal antibody (MP-001).

Results

The dog responded to the canine anti-PD-1 immunotherapy treatment and PR was reached after 2 months of the treatment. Duration of response (DOR) exceeded 7 months (Figure 1C-D) and overall survival(OS) was 320 days. This case ultimately died of abdominal hemorrhage due to thrombocytopenia.

Conclusion

A case of canine alveolar rhabdomyosarcoma was effectively treated with canine PD-1 monoclonal antibody, which shows the potential of immunotherapy and provides veterinarians with more information about ICI treatment.

Key Words canine; rhabdomyosarcomas; anti-PD-1 treatment

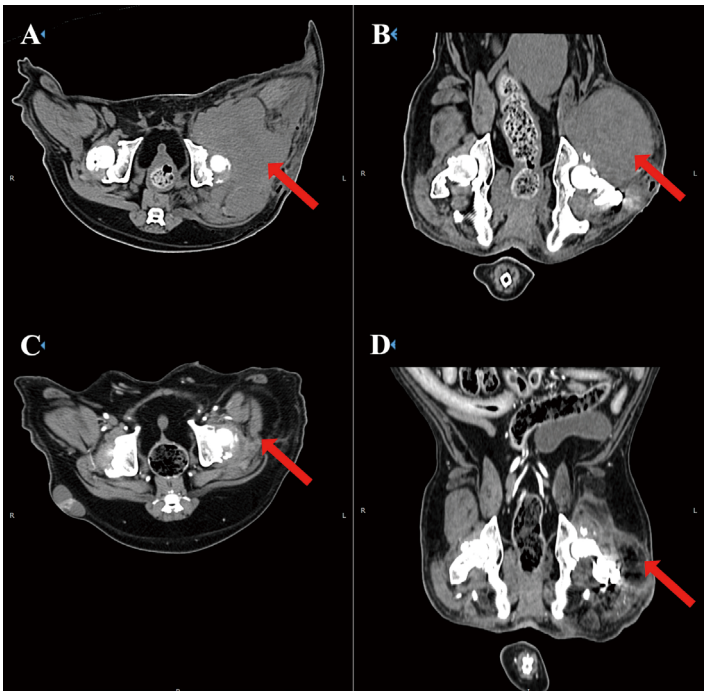


Figure 1. Computed tomography (CT) images.

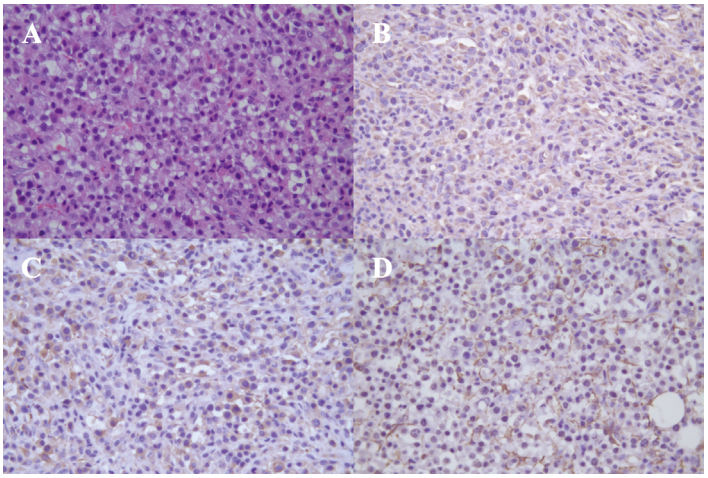


Figure 2. Hematoxylin and eosin stain (A). Immunohistochemical (IHC) staining for vimentin (B), desmin (C), SMA (D), the neoplastic cells were positive for desmin and vimentin but negative for SMA.

P 066 >

RETROSPECTIVE SAFETY EVALUATION OF COMBINED CHLORAMBUCIL AND TOCERANIB FOR THE TREATMENT OF SOLID TUMORS IN DOGS

Yuk Yin LAI[1],*Antonio GIULIANO*[2,3]

1. City University of Hong Kong

2. Department of Veterinary Clinical Sciences, Jockey Club College of Veterinary Medicine and Life Sciences, City University of Hong Kong

3. Veterinary Medical Centre, City University of Hong Kong

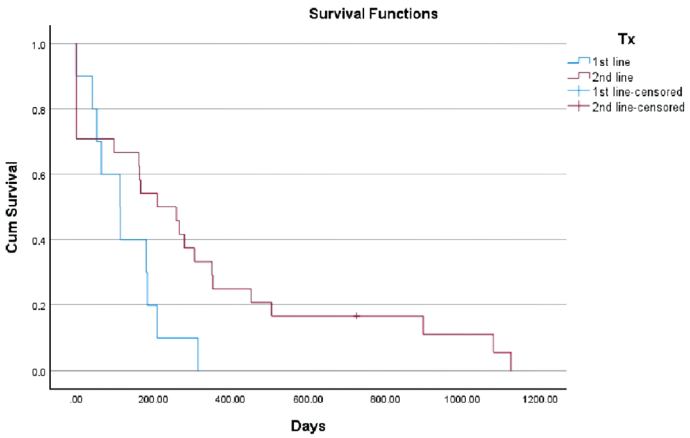


Figure 1: Kaplan–Meyer survival analysis for all patients. Dots represent censored cases. (p=0.035)

Introduction

Chlorambucil, an oral chemotherapy agent for veterinary cancer treatment, and Toceranib, a TKI primarily used for MCT in dogs, have not been studied for safety when used together, despite their respective low incidence of severe adverse events.

Objectives

Retrospective assessment of the safety of combining Chlorambucil and Toceranib in different canine solid tumors; secondary objective, to evaluate the response rate.

Methods

Thirty-four dogs treated with chlorambucil and toceranib were retrospectively evaluated. Adverse events were graded by VCOG-CTCAE v2, and response rate was assessed with RECIST guidelines. Overall response rate (ORR) included CR and PR, while clinically benefit rate (CBR) included CR, PR, and SD for at least six weeks. Median survival time (MST) was obtained with a Kaplan-Meier product-limit method. Statistics were performed with SPSS.

Results

Chlorambucil was administered at 2-4mg/m2 daily or every-other-day, while Toceranib was given at a median dosage of 2.46mg/kg (1.6-3.0mg/kg) on a Monday-Wednesday-Friday schedule, with dosage adjustments based on clinical judgement. The combination was well-tolerated by most dogs, with occasional mild adverse events (AEs), primarily gastrointestinal (n=14; 44.1%) and hematological (n=7; 20.6%), which were mostly G1-G2 and improved with dosage/schedule adjustments. CBR was 47% and ORR 11%. The median PFS was 40 days (0-275 days), and the MST was 264 days (42-1178 days).

Conclusion

This combination therapy appears safe and well tolerated in dogs, larger prospective trials are needed to validate its results and assess efficacy in different cancer types.

Key Words Chlorambucil; Toceranib; combination; dog; adverse events

P 067 >

NEUTRON CAPTURE THERAPY FOR MALIGNANT TUMORS IN CATS AND DOGS

Aleksandr Kichigin[1],Elena Petrova[2],Evgeniy Zavyalov[3,4],Ekaterina Butikova[4],Tatyana Guselnikova[4],Julia Krasko[4],Dmitry Lukichev[4],Alfiya Tsygankova[4],Nikolay Kanygin[4],Tatyana Sycheva[4,5],Sergei Taskaev[4,5],Artem Naimushin[4,6],Mihail Anikin[4,6],Vladimir Kanygin[4,5]

1. Neuboron Therapy System Ltd.

2. Veterinary clinic "Best», Novosibirsk, Russia

3. Institute of Cytology and Genetics SB RAS, Novosibirsk, Russia

4. Novosibirsk State University, Novosibirsk, Russia

5. Budker Institute of Nuclear Physics of the Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

6. National Research Tomsk Polytechnic University, Tomsk, Russia

Introduction

Neutron capture therapy (NCT) is a promising approach to treating malignant tumors. Unlike conventional methods of radiation therapy, NCT specifically targets cancer cells, sparing healthy tissues.

Objectives

To treat malignant tumors in cats and dogs without alternative treatment options using innovative neutron capture therapy technology and evaluate its effectiveness.

Methods

We conducted studies of neutron capture therapy in 48 incurable cats and dogs with malignant tumors. The VITA accelerator of the Institute of Nuclear Physics SB RAS, Novosibirsk, and the GEK-1 channel of the educational nuclear reactor IRT-T, Tomsk Polytechnic University, were used as a source of neutrons. Boron-containing substances were used as agents for boron neutron capture therapy (BNCT) - sodium borocaptate (BSH) enriched with 10B by 99.9% at a dose of 100 mg/kg, boronphenylalanine enriched with 10B by 99.5% in complex with fructose (BPA-F) at a dose of 700 mg/kg. Gadolinium-containing substances were used as agents for gadolinium neutron capture therapy (GdNCT) – gadopentetic acid at a dose of 0.5 mmol/kg, gadobutrol at a dose of 1 mmol/kg.

Results

Tumor regression was noted in response to treatment with BNCT, an improvement in the overall clinical situation, and an increase in the animals' expected duration and quality of life. Treatment-related toxicities were mild and reversible. There was no significant response to treatment with GdNCT using average and maximum possible subtoxic doses of standard gadolinium-containing drugs used as a contrast agent for MRI.

Conclusion

These studies suggest a potential role for the use of neutron capture therapy in veterinary medicine.

Key Words BNCT, GdNCT, NCT, neutron capture therapy, accelerator neutron source, nuclear reactor, malignant tumors, veterinary medicine

P 068 >

DERMATOPONTIN: A POTENTIAL PROGNOSTIC BIOMARKER IN FELINE MAMMARY CARCINOMAS

Pruettha Aruvornlop[1],Nlin Arya[1],Sekkarin Ploypetch[2],Sirintra Sirivisoot[3],Tanit Kasantikul[4]

1. Faculty of Veterinary Science, Mahidol University

2. Department of Clinical Sciences and Public Health, Faculty of Veterinary Science, Mahidol University, Thailand

3. Center of Excellence in Companion Animal Cancer, Department of Pathology, Faculty of Veterinary Science, Chulalongkorn University, Thailand

4. Veterinary Diagnostic Laboratory, Michigan State University, USA

Introduction

Mammary carcinomas are aggressive neoplasms and cause of mortality in women and female cats. Dermatopontin (DPT), an extracellular matrix protein, was recently identified as a tumor suppressor involved in regulating human breast cancer progression. However, clinical relevance of DPT in feline mammary carcinomas (FMCs) has never been investigated.

Objective

This study aimed to evaluate the prognostic value of DPT in FMCs.

Methods

The cancerous group consisted of 28 cats diagnosed with mammary carcinoma. Stages and grades were evaluated based on medical records and histopathology. All cats were followed up for two years after diagnosis. The control group included six normal mammary tissues obtained from non-tumor cats during necropsy. Paraffin-embedded tissue sections were used to examine DPT expression by immunohistochemistry. The levels of DPT were compared among stages and grades of FMCs and controls using one-way ANOVA. Survival analysis was conducted using Kaplan-Meier curves.

Results

DPT expression was significantly downregulated in cancerous tissues compared to controls ($p < 0.0001$). Moreover, DPT expression was significantly related to the stage ($p < 0.0001$), grade ($p < 0.0001$), and overall survival ($p = 0.017$) of FMCs. Lower DPT expression was observed in cats with late-stage, high-grade carcinomas, and shorter survival times.

Conclusion

This study is the first to highlight DPT as a potential novel prognostic biomarker in FMCs that warrants further investigation in larger-scale studies. Evaluating DPT could enhance understanding of disease progression and facilitate personalized therapeutic plans for patients.

Acknowledgements

This presentation is supported by the Faculty of Veterinary Science, Mahidol University.

Key Words mammary carcinoma; dermatopontin; prognosis; biomarker; cat

P 069 >

THE ANTITUMOR ACTIVITY OF GMI (GANODERMA MICROSPORUM IMMUNOMODULATORY PROTEIN) IN CANINE MAMMARY TUMOR CELLS

YUNG HSUAN LIN,Albert Taiching Liao

National Taiwan University

Introduction

GMI is a fungal immunomodulatory protein found in Ganoderma microsporum which is one of lingzhi mushrooms. Both isolated and recombinant GMI naturally exist in a stable tetramer configuration and have been found to exhibit various functions including health promotion and anticancer effect in human studies.

However, it has not been applied to veterinary medicine yet.

Objective

To investigate the antitumor effects of recombinant GMI on canine mammary tumor (CMT) cells.

Methods

Viability assay was conducted to evaluate the impact of GMI on these cells. Annexin V-PI staining was used to ascertain if apoptosis is involved in GMI-induced cell death. The study also evaluates the impact of Doxorubicin on cell viability and assesses if additional GMI can enhance this effect. The signal transduction of CMT cells affected by GMI was analyzed.

Results

Morphological changes were observed in three CMT cell lines hours after GMI administration. Single or daily administration reduced the viability of these cells in different levels. Flow cytometry analysis of Annexin V-PI staining indicated apoptosis was involved in GMI-induced cell death. Extra-administration of GMI promoted the effect of Doxorubicin to greatly reduce the viabilities of three CMT cells. AKT pathway, not MAPK pathway, was involved in the effect of GMI to alter the behaviors of CMT cells.

Conclusion

The administration of GMI significantly impacted the viability of three CMT cells, with notable morphological changes and apoptosis involvement. These findings suggest a potential therapeutic role for GMI in CMT treatment, warranting further investigation for clinical implications.

Key Words GMI (Ganoderma microsporum immunomodulatory protein); Ganoderma microsporum; Immunomodulatory protein; Canine mammary tumor(CMT)cells; Antitumor activity; Apoptosis; Signal transduction

P 070 >

RETROSPECTIVE ANALYSIS OF ADVERSE EVENTS IN DOGS WITH MALIGNANT TUMORS POST-CHEMOTHERAPY

Xinyi Xu,Gebin Li

China Agricultural University

Introduction

Malignant tumors are a predominant cause of mortality in canine, with chemotherapy being an integral therapeutic intervention. However, the associated adverse events (AEs) can significantly impair the quality of life. This study aimed to describe the category and prevalence of AEs post-chemotherapy and to gauge pet owners' perceptions and acceptance.

Objectives

To ascertain the aggregate incidence of AEs following chemotherapy in dogs with malignant tumors, elucidate the categorization and gravity of encountered AEs and to assess the awareness and acceptance of AE among pet owners.

Methods:

A retrospective review of 66 canine oncology cases at the China Agricultural University Veterinary Teaching Hospital from April 2021 to April 2023 was conducted. Adverse events were classified and graded using the VCOG-CTCAE v2 criteria. A questionnaire was employed to assess the awareness and acceptance of AEs among 19 dog owners.

Results:

86.4% of dogs experienced at least one AE throughout the chemotherapy regimen.The most frequently occurring AEs were gastrointestinal (75.8%) and hematologic (56.1%). High-grade AEs resulted in the mortality of 6.0% of the canine subjects. A significant correlation was observed between single-agent chemotherapy and severe AEs.94.7% pet owners expressed satisfaction with chemotherapy outcomes and an acceptance of associated AEs.

Conclusion:

This study underscores that while the majority of dogs with malignant tumors develop AEs post-chemotherapy, these are typically manageable, with a low incidence of severe AEs. The high level of satisfaction among pet owners with chemotherapy outcomes, coupled with their acceptance of AEs, suggests a need for continued education on AEs to both veterinary and pet owners.

Key Words Dogs, Chemotherapy, Adverse events, Tumors

P 071 >

USING CRISPR-BASED WHOLE GENOME KNOCKOUT SCREENING TO FIND MOLECULAR TARGET IN FELINE ORAL SQUAMOUS CELL CARCINOMA

Keyi Tang,Maciej Parys,Nicholas Parkinson

The University of Edinburgh

Introduction

Feline oral squamous cell carcinoma (FOSCC) is a common oral tumour which displays locally aggressive behaviour. Current treatment options are limited, thus, there is an unmet need for more effective therapeutics for this cancer.

Objectives

In this study, we employ a genome-wide strategy using CRISPR-based whole genome screening to identify new genetic dependencies that could serve as potential therapeutic targets for.

Methods

We developed a pioneering canine-specific CRISPR-Cas9 whole genome knockout library, containing over 114,427 guides targeting 19,382 genes. Two FOSCC cell lines were utilized for screening. One other oral squamous cell carcinoma and two fibroblast cells as a negative control will be utilized for screening in the future. Cells were cultured in both 2D and 3D environments to compare CRISPR phenotypes. Sequencing of the CRISPR-edited cells integrated sgRNAs was performed using Illumina sequencing, and data analysis was conducted using the MAGECK pipeline.

Results

Screening results confirmed that the methodology worked well in feline cells, and revealed a large number of 'core fitness' genes. We also identified a number of context-specific fitness genes that seemed to be specific to oral squamous cell carcinoma cell lines, including CDK6, members of the MAPK and PI3K/AKT signalling pathways, and EGFR.

Conclusion

The gene dependencies identified included genes targetable by existing therapeutics and other small molecule inhibitors. By comparison to results in non-cancerous cell lines (e.g. fibroblasts) and to further FOSCC cell lines, we aim to establish which genes are most specific and consistent, or conditionally essential, to cancer cells of this type, to identify the most promising candidate therapeutic targets.

Key Words CRISPR, cat, oral squamous cell carcinoma, whole genome screening

P 072 >

CHARACTERIZATION OF CANINE MONOCYTE-DERIVED DENDRITIC CELLS FOR CANCER IMMUNOTHERAPY

Chih-Chun Liu,Albert Taiching Liao

National Taiwan University

Introduction

Dendritic cells (DCs) are the most powerful antigen-presenting cells, and crucial in activating T-cell-dependent immune responses. Monocyte-derived DCs (MoDCs), differentiated from peripheral blood mononuclear cells (PBMC), are commonly employed in cellular immunotherapy of cancer. Powerful T-cell immunity requires full maturation of DC, which depends on triggering of distinct pattern recognition receptors such as toll-like receptors (TLRs). Identifying TLRs on canine MoDCs and assessing their responses to various TLR ligands is crucial for making use for their potential in cancer immunotherapy.

Objectives

To characterize canine MoDCs following the stimulation of specific TLR ligands.

Methods

Canine immature DCs (iDCs) were developed from PBMC of donor dogs and tested for TLRs expression through RT-PCR, then stimulated with specific TLR ligands: Poly I:C for TLR3 and lipopolysaccharide (LPS) for TLR4. Maturation was evaluated by observing morphological changes through microscopy, and assessing surface markers and cytokine profiles using flow cytometry and RT-qPCR.

Results

Canine iDCs express TLR3 and TLR4 and transformed into mature DCs (mDCs) when stimulated with Poly I:C and/or LPS. Maturation was marked by morphological changes such as dendrite elongation, while the upregulation of DLA-II, CD80, and IL-12 on mDCs further confirmed phenotypic and functional maturation.

Conclusions

The findings confirm that TLR3 and TLR4 ligands effectively induce the maturation of canine MoDCs. mDCs demonstrate the capability to present antigens, provide necessary signals for further T cell activation, and promote a Th1 type immune response, potentially enhancing immunotherapeutic strategies for cancer treatment in veterinary medicine.

Key Words Cellular immunotherapy; Peripheral blood monocyte; Monocyte-derived dendritic cells (MoDCs); Toll-Like Receptors (TLRs); TLR ligands; Dendritic cell differentiation; Canine

P 073 >

COMPARISON THE EFFECT OF FIVE THAI EDIBLE PLANT EXTRACTS ON CANINE MAMMARY GLAND CARCINOMA CELL LINE AND CANINE ADIPOSE-DERIVED MESENCHYMAL STEM CELLS

Sasipat Teerawongsuwan,Chuleekorn Warinrak

Faculty of Medicine, Srinakharinwirot University, Bangkok

Introduction

Canvirol, formulated from extracts of five Thai edible plants—mangosteen, black sesame, soybean, guava, and gotu kola—has shown potential in modulating the immune system by reducing the viral load in HIV patients. However, its effects in dogs, particularly in an in vitro system, remain unexplored.

To determine the effects of Canvirol on the proliferation and gene expression of the canine mammary gland carcinoma cell line (CMT-U27) and canine adipose-derived mesenchymal stem cells (CADMSCs).

CMT-U27 cells were cultured in media with varying Canvirol concentrations for 24 hours to determine the IC50 using the MTT assay. Subsequent studies used selected concentrations to evaluate proliferation via Ki67 immunostaining and immunomodulatory gene expression in CMT-U27 and CADMSCs.

Canvirol reduced CMT-U27 cell viability in a dose-dependent manner, with an IC50 of 208.9 µg/ml. Concentrations of 100 and 200 µg/ml were used for further studies. Ki67-positive cells in CMT-U27 and CADMSCs slightly decreased with Canvirol. The oncogene Oct-4 was detected in both cell types. Canvirol downregulated IL-6 expression in both CMT-U27 and CADMSCs. PGE2 expression decreased in CMT-U27 but increased in CADMSCs. Additionally, 100 µg/ml of Canvirol decreased IDO expression in CMT-U27 but not in CADMSCs.

Canvirol inhibited CMT-U27 cell viability and affected the expression of immunomodulatory genes in CMT-U27 and CADMSCs. The differential gene expression warrants further analysis to understand Canvirol®'s mechanism in regulating the immune response in canine cancer and stem cells.

Key Words Dog; Cell proliferation; Immunomodulatory effect; stem cells; Thai edible plant extract

P 074 >

EVALUATE THE DEGREE OF CARDIOTOXICITY AND CLINICAL OUTCOME BETWEEN TWO INJECTION TIMES OF DOXORUBICIN IN CANINE MULTICENTRIC LYMPHOMA

Shang-Lin SL Wang

National Taiwan University

Introduction

Doxorubicin is an anthracycline antitumor antibiotic with a cumulative cardiotoxicity. Human research shows that oxidative cardiotoxicity is correlated with the instantaneous concentration of doxorubicin in the blood. However, there is no relevant research in veterinary medicine.

Objectives

The aim of this study is to evaluate the degree of cardiotoxicity and clinical outcome between two injection times of doxorubicin in canine multicentric lymphoma.

Methods

Dogs diagnosed with multicentric lymphoma and treated with CHOP-based chemotherapy at National Taiwan University Veterinary Hospital were included in this retrospective study. Thirty-five dogs and forty-three dogs were categorized into fast-infusion group (within 30 mins) and slow-infusion group (over 60 mins).

Results

The median progression-free survival was 195 and 254 days in fast- and slow-infusion groups (P = 0.145). The median survival time was 312 and 389 days in fast- and slow-infusion groups (P = 0.345). The fraction shortening changed after complete chemotherapy was not significantly different between fast- and slow-infusion groups (P = 0.684).

Conclusions

Our results showed that injection time was not significantly related to cardiotoxicity and clinical outcome in lymphoma dogs who received CHOP-based chemotherapy.

Key Words canine; cardiotoxicity; doxorubicin; multicentric lymphoma

Orthopedics

P 076 >

INFLUENCE OF SILVER NITRATE (AGNO3) ON THE ORTHOPEDIC BONE CEMENT

Aline Osowski[1],Sheila C. Rahal[1],Celso R. Ribeiro[2],Luiz D. Campeiro Junior[1],José I.S. Silva Júnior[1],Paulo H.G. Gaspatotto[3]

1. School of Veterinary Medicine and Animal Science – São Paulo State University (UNESP)

2. Laboratório de Ensaios Mecânicos e Metalográficos - LEMM

3. Laboratório de Sanidade Animal - MICROVET

Introduction

Any material incorporated into polymethyl methacrylate (PMMA) cement must preserve or improve its mechanical properties to maintain functionality, especially if used for implant fixation.

Objectives

To evaluate the influence of silver nitrate on the mechanical properties of PMMA bone cement through static testing and in vitro antibacterial activity.

Methods

Two groups were formed: Group 1 – control (n=10), Group 2 – cement with silver nitrate (n=10). In Group 2, the cement was prepared as in Group 1; however, 0.25 g of silver nitrate was added to 20 g of PMMA powder. Ten samples from each group were assigned to the four-point bending testing and 10 to the compression testing.

Results

No statistical differences were observed for bending strength with (61.80 ± 4.96 MPa) or without silver nitrate (60.20 ± 5.88 MPa). Statistical differences were verified in the compressive strength, which was higher for the control specimens (78.60 ± 3.20 MPa) compared to those with silver nitrate (74.20 ± 1.61 MPa). Antimicrobial sensitivity testing showed no effect of the cement with silver nitrate on Staphylococcus aureus, Streptococcus sp., Pseudomonas aeruginosa, and Escherichia coli.

Conclusions

The concentration of silver nitrate used did not alter the mechanical properties of the PMMA bone cement in the bending test but had a negative impact on the compression test. Additionally, the product did not lead to a reduction in bacterial growth in the in vitro test.

Acknowledgment

CNPq-PQ305813/2023-4

Key Words mechanical testing; cement; PMMA

P 077 >

TRANSPOSITION FLAP FOR DESMOTOMY RECONSTRUCTION IN DOGS WITH PATELLAR LUXATION

Guilherme R. Cassanego[1],Sheila C. Rahal[1],Anita M. Pigatto[1],Alceu G. Raiser[2]

1. School of Veterinary Medicine and Animal Science, São Paulo State University (UNESP)

2. Federal University of Santa Maria

Introduction

Despite the availability of different surgical procedures for correcting patellar luxation, transposition flaps using the stretched parapatellar soft tissue (joint capsule and retinaculum) are still underutilized.

Objectives

To describe a transposition flap that can be used as a complementary procedure in medial or lateral patellar luxations and evaluate its use retrospectively in dogs.

Methods

Dogs with grade 3 and grade 4 patellar luxation were retrospectively enrolled in this study. Five dogs had medial luxation, and three had lateral luxation. The transposition flap was used in 11 hind limbs with patellar luxation. After deepening the trochlear groove, tibial tuberosity transposition, and desmotomy, a triangular flap was created with the stretched parapatellar soft tissue opposite the direction of patellar luxation. The base of the flap was approximately 1 cm proximal to the patella and the apex was close to the tibial tuberosity. After the flap was lifted by sectioning the apex region, it was transposed to the desmotomy area, and its apex was sutured to the caudal edge of the desmotomy. Next, the edges of the flap were sutured on the medial and lateral edges of the desmotomy.

Results

In the postoperative period, one dog experienced migration of the Kirschner wire without tibial tuberosity displacement. All dogs had good outcomes with stabilized patellae and total functional recovery at least 2 months after surgery.

Conclusions

The transposition flap provides soft-tissue coverage to the desmotomy area and might be considered a complementary procedure for patellar luxation stabilization.

Acknowledgment

CNPq-PQ305813/2023-4

Key Words patella; luxation; surgery; treatment

P 078 >

LONG-TERM RESULTS AFTER CAT FEMORAL HEAD AND NECK EXCISION: THE FINDINGS BASED ON 63 CASES

Yi Li[1],Zhankui Yuan[1,2],Lei Shi[1],Ningyi Li[2],Hongwu Chen[3],Xiao Wang[1],Bin Zhang[1]

1. China Agriculture University Veterinary Teaching Hospital

2. College of Veterinary Medicine, China Agriculture University, Beijing, China

3. Beijing Hengai Animal Hospital, New Ruipeng Pet Healthcare Group CO.,LTD.,Beijing, China

Key Words Feline femoral head and neck excision;postoperative outcomes;disability score;long-term results

Introduction

Femoral head and neck excision (FHNE) is a salvage procedure to reduce the pain associated with the hip disease. It has been widely used in cats, but the literature on long-term functional recovery is relatively scarce, there were no relevant reports published in China.

Objectives

To evaluate the potential long-term functional recovery of FHNE in cats.

Methods

l Retrospective study

l 63 cats

l Cats underwent FHNE at the China Agricultural University Veterinary Teaching Hospital and Beijing HengAi Animal Hospital from 2013 to 2020. Based on the method reported by Yap that a questionnaire with owners to socre the ability of cats to perform activities after surgery, including walking, sitting, standing, running, climbing, jumping, playing/exercising. Assess the changes in behavior, analgesic requirement and complications. A t-test on average disability score (ADS) of two different groups was performed.

Results

Sixty-three cats underwent surgery,6 of which had bilateral FHNE. Forty-nine questionnaires were completed. Thirty-nine were excellent (79.6%, ADS≤0.50), nine were good (18.4%, 0.51≤ADS≤1.0), one cat was satisfactory (2.0%, 1.01≤ADS≤1.50). And Eighteen cats (36.7%) exhibited long-term complications, none of them required secondary surgery. Seven cats (14.3%) exhibited mild pain. There was no statistically different (P=0.67) of ADS in two groups whit or whitout multiple procedures on the same limb. There was no statistical significance (P=0.40) of ADS between cats with bilateral FHNE and cats with unilateral FHNE.

Conclusion

FHNE can act as a salvage procedure in cats with femoral neck or femoral capital physeal fracture and coxofemoral joint luxation, which does not require long-term analgesic. Long-term functional recovery was good to excellent.

P 079 >

A RETROSPECTIVE STUDY OF SURGICAL TREATMENT OF 210 DOGS WITH MEDIAL PATELLAR LUXATION

Kangjia Qiao[1],Lei Shi[1],Zhankui Yuan[2],Hongwu Chen[3],Xiao Wang[1],Siruo Yu[2],Bin Zhang[1]

1. China Agricultural University Veterinary Teaching Hospital

2. College of Veterinary Medicine, China Agricultural University

3. New Ruipeng Hengai Veterinary Hospital

Introduction

Patellar luxation (PL) is one of the most prevalent orthopedic conditions affecting the canine stifle joint, resulting in progressive pain, cartilage erosion, and osteoarthritis. In any breed of dog, MPL is the most common type of patellar luxation. There is currently no large retrospective study on the surgical treatment effect in China.

Objective

The objective of this study was to investigate the surgical treatment outcomes, complications, and factors associated with canine medial patellar luxation.

Methods

A retrospective analysis was conducted on the medical records and telephone follow-up results of 167 dogs (210 operated limbs) that underwent corrective surgery for medial patellar luxation at China Agricultural University Veterinary Teaching Hospital and New Ruipeng Hengai Veterinary Hospital from March 2007 to June 2022. Statistical analysis included animal characteristics, MPL grade, surgical procedures, complications, and prognosis. Multivariate binary logistic regression was used to analyze the correlation between age, weight, MPL grade, surgical procedures, prognosis and complications.

Results

The overall good outcome rate was 86.8%.The good surgical outcome rate of grade I, grade II, grade III, grade IV MPL surgery was 100%, 88.9%, 92.2%, 50%.There was a statistically significant effect of MPL grades on surgical outcomes ($P<0.05$).

Conclusion

This study demonstrated favorable overall surgical outcomes for canine medial patellar luxation (MPL). Lower-grade luxations showed better results compared to higher-grade ones(MPL IV). The high recurrence rate in surgeries involving higher-grade luxations may be attributed to inadequate recognition of limb deformity which might require further evaluation and correction for existing skeletal deformities.

Key Words canine;medial patellar luxation;trochleoplasty;tibial tuberosity transposition

P 080 >

LAMENESS AND PAIN ASSESSMENT FOR SMALL DOGS AFTER SHOULDER EXCISION ARTHROPLAST

Lei Shi[2],zhishan li[1],zhankui yuan[1,2],shuaiyu wang[1,2]

1. China Agriculture University

2. China Agricultural University Veterinary Teaching Hospital

Introduction

Shoulder excision arthroplasty (SEA) is a procedure that removes the joint surfaces of the shoulder, resulting in proliferative fibroplasia (pseudoarthrosis) into the resected joint to improve stability. Considered as a salvage procedure for arthrodesis, it mainly used for degenerative joint diseases, shoulder pain and dysfunction. With no implant and shorter surgical anesthesia time, it is considered to be with fewer postoperative complications.

Objectives

With insufficient clinical statistics published, this study provides more data for veterinarians to evaluate the prognosis of SEA.

Methods

The case group consisted of a Shih Tzu dog and 7 Toy Poodle dogs(N=8), sex ratio 1:1, diagnosed with medial shoulder dislocation preoperatively. All the dogs received X-ray examinations, lameness and pain assessments before the surgery. During the surgery, general anesthesia was induced with propofol and maintained with isoflurane in oxygen. After surgery, scapular and femoral head resection was evaluated by X-ray and meloxicam or carprofen were given for pain management. Cold compression and physical therapy were given within 1 to 2 days. One year later, all the dogs returned for lameness and pain assessment (Table 1). No complication requiring additional surgery was reported in this study.

Results

Compared to the scores before surgery (5/5 and 2/2), median lameness and pain scores (1/5 and 0/2) are significantly (P<0.01) decreased after the surgery.

Conclusions

For small dogs suffering from severe degenerative changes and surgical management failure, SEA significantly improves their quality of life.

Key Words shoulder excision arthroplasty; lameness assessment; pain assessment; dog

Table 1 Population data and Lameness and pain scores for 8 dogs before and after shoulder excision arthroplasty.

Dog	Breed	Gender	Age (y)	Weight (kg)	Side	Lameness score (0 to 5))		Pain score (0 to 2)	
						Pre-operative	post-operative	Pre-operative	post-operative
1	Shih Tzu	Female	4	2.3	Left	5/5	3/5	2/2	1/2
2	Poodle	Male	7	2	Left	5/5	1/5	2/2	0/2
3	Poodle	Female	6	12.6	Left	4/5	1/5	2/2	0/2
4	Poodle	Male	9	3	Right	5/5	1/5	2/2	1/2
5	Poodle	Female	5	2.4	Right	5/5	0/5	2/2	0/2
6	Poodle	Female	8	2.5	Ledt	4/5	0/5	2/2	0/2
7	Poodle	Male	12	3.8	Right	5/5	4/5	2/2	0/2
8	Poodle	Male	13	1.7	Right	5/5	2/5	2/2	0/2

P 081 >

SURGICO-THERAPEUTIC MANAGEMENT OF SUPRACONDYLAR FRACTURES IN FELINES USING "ARROW PIN" TECHNIQUE

Dishant Saini,Gajendra Subhanrao Khandekar,Santosh Mani Tripathi,Rajesh Rohi,Shahir V. Gaikwad,Simran Josan,Manik Jadhav

Mumbai Veterinary College, Parel

Introduction

Young cats are prone to distal femoral fractures caused by accidents, falls, or animal bites. The "Arrow pin technique" is a modified version of using intramedullary pins to mend femoral diaphyseal/metaphysical (supracondylar) fractures.

Materials and Methods

The clinical efficacies of this arrow pin technique in the six species were evaluated. All the cats (n=6) were client owned and <1-year-old, with supracondylar distal femoral fractures. Following the clinical and radiological examinations, the type and location of the fracture, details of the fixation method applied, postoperative clinical and radiological results were assessed.

Results and Discussion

After radiographic evaluation, long bone fractures were classified as supracondylar fractures of type I overridden closed fractures. Following the insertion of an intramedullary arrow pin, robust stability was accomplished, as evidenced radiographically. The patients were able to bear weight on the affected limb in 3-5 days and began walking normally on day 14 after surgery. All instances showed complete healing and return to function without complications.

Conclusion

The study found that the single "custom made" arrow pins provided adequate stability and resistance to rotational and axial forces in distal femoral fractures, and it confirmed that it would provide a significant fracture reduction in long bone fractures in young cats at a low cost.

Key Words Arrow-pin, Supracondylar, Fracture healing, Intramedullary pinning

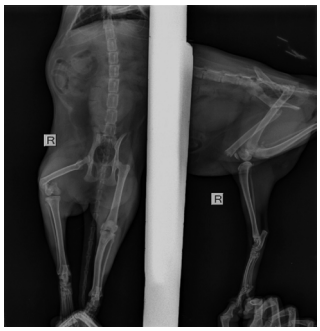


Figure 1: Pre-operative X-Ray showing AP and Lateral view of supracondylar fracture at distal end of femur

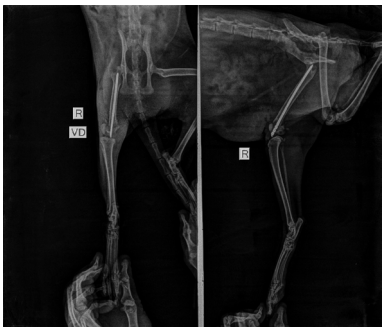


Figure 2: Post-operative X-Ray showing reduction of fracture using Arrow-headed pin

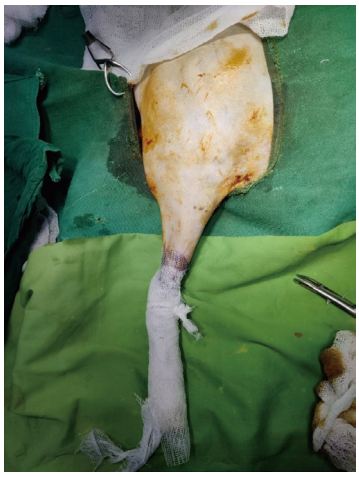


Figure 3: Draping of right femoral area along with stifle joint

Figure 4: Incision on the stifle joint area and distal part of tight femur

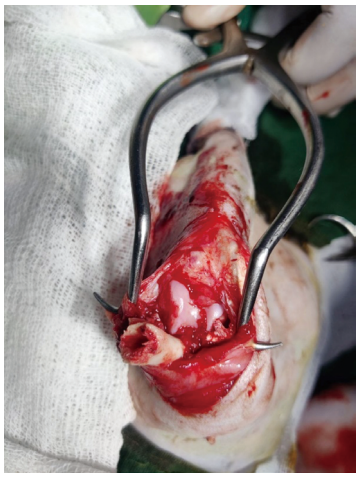


Figure 5: Exposure of supracondylar area of distal femur after relecting middle patellar ligament

Figure 6: Fixation of Arrow-pin after reduction of fracture ends

Figure 7: Fixation of Arrow-head in the trochlea of femur using mallet

Figure 8: Closure of surgical site using simple continuous 2-0 catgut suture material

Figure 9: Weight bearing on affected limb 3 day post-operatively.

Figure 10: Weight bearing on affected limb with partial touching of toe 10 day post-operatively.

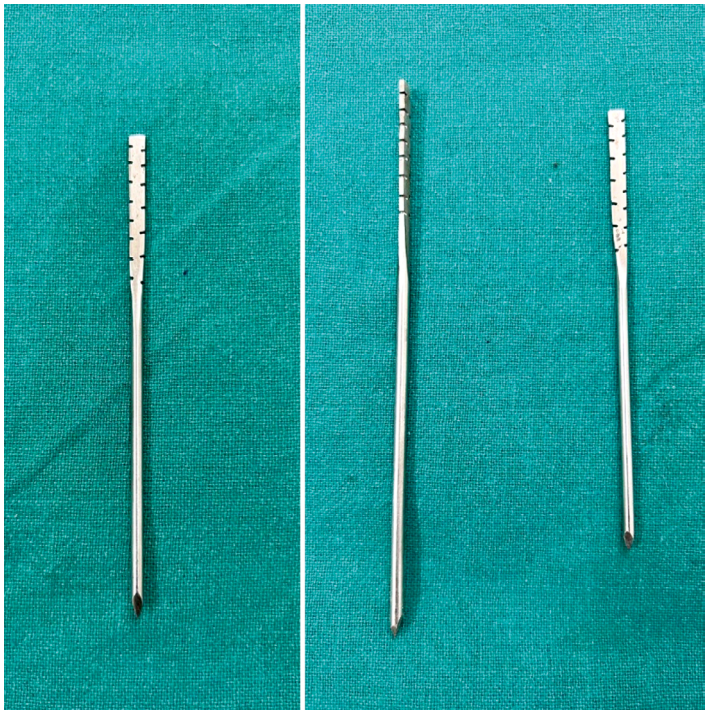


Figure 11: A custom made Arrow pin having total length 11 cm with length of Arrow-head of 2.5cm.

One Health

P 084 >

"INTEGRATING ONE HEALTH PRINCIPLES IN THE MANAGEMENT OF PARASITIC DISEASES IN SMALL ANIMALS"

Muhammad Fiaz Qamar

University of Veterinary and Animal Sciences

Introduction

This study aimed to investigate the integration of One Health principles in the management of parasitic diseases in small animals, with a focus on enhancing collaboration between veterinary, medical, and environmental health professionals.

Objectives:

1.Reviewing the epidemiology and impact of parasitic diseases in small animals on human and animal health.

2.Identifying barriers to effective parasite control and prevention in small animal populations.

3.Evaluating the role of interdisciplinary collaboration in addressing parasitic diseases through the One Health approach.

4.Proposing integrated management strategies for controlling parasitic diseases in small animals, considering veterinary, medical, and environmental health interventions.

Methods

A comprehensive literature review was conducted to synthesize existing knowledge on parasitic diseases in small animals and their implications for One Health. Data were collected from peer-reviewed articles, government reports, and relevant publications. Key themes identified from the literature were analyzed to inform the development of integrated management strategies.

Results

The review revealed a significant burden of parasitic diseases in small animals worldwide, with implications for both animal welfare and public health. Common parasitic infections in small animals, such as fleas, ticks, and gastrointestinal parasites, were found to have zoonotic potential, highlighting the interconnectedness of human and animal health.

Conclusions

Integrating One Health principles in the management of parasitic diseases in small animals is essential for addressing the complex nature of these infections.

Key Words One Health, Parasitic Diseases, Small Animals, Management, Integration

P 085 >

ONE HEALTH AS CORNERSTONE FOR RABIES CONTROL AND PREVENTION

JULIUS AIYEDUN

UNIVERSITY OF ILORIN

Introduction

Rabies is a disease caused by rabies virus, affecting the central nervous system and spinal cord of infected animals, leading to encephalomyelitis and death. Rabies is under-reported and a serious public health hazard in Nigeria, where dog bite is the major transmitter to human. Rabies has been successfully controlled in most developed countries, where mass vaccination of dogs and various One-Health approaches were employed which embraces a broad-based strategy for managing infectious diseases through multi-disciplinary communication and collaboration with optimal environmental, human and animal health outcome at local, national and global levels. The inability to vaccinate 80% of dog population due to human and environmental factors has led to increased rabies related human death in Nigeria, resulting from dog bites, with attendant socioeconomic and public health impact.

Method

The research design used was retrospective analyses of randomly selected veterinary and medical records of patients. Data collected were analysed using SPSS version 20. One health strategy was also used to highlight how integration and collaboration among stakeholders could result in effective prevention and control of rabies in Nigeria.

Results

The investigation revealed prompt cross fertilization of ideas and exchange of information among stakeholders. The study indicated that only the essential pre and post exposure prophylaxis were administered thereby reducing unnecessary economic burden.

Conclusion

We highlighted the challenges of rabies in Nigeria, strategies adopted and steps taken in line with one health approach in solving the problem for effective and efficient management.

Key Words One Health; Cornerstone; Rabies; Control; Prevention.

P 086 >

INTEGRATION OF ONE HEALTH APPROACH INTO THE RABIES PREVENTION AND CONTROL PROGRAM: THE AGUSAN DEL NORTE, PHILIPPINES EXPERIENCE

Joseph Rizalyndo Dargantes

Provincial Veterinary Office, Province of Agusan del Norte, Philippines

In 2016, the province of Agusan del Norte started an initiative to integrate the One Health Approach into its rabies prevention and control program. Different offices of the province were linked together for a concerted effort to control and possibly eradicate rabies in the province. An information system called Rabies Management Information System (RabMIS) was also created to record, store, and maintain a database for the One Health Approach Rabies Prevention and Control Program.

This research was carried out to evaluate the impact of the integration of One Health Approach into the Rabies Prevention and Control Program in the Province of Agusan del Norte, Philippines. The financial aspect of the program was also assessed.

In totality, the integration of One Health Approach resulted in increased engagement and coordination among stakeholders. In the veterinary compartment, the integration observed increased dog registration and dog vaccination coverage, reducing animal rabies cases in the province. For the human compartment of the program, a significant increase in post-exposure prophylaxis treatment among animal bite patients in the province was observed, with a consequent reduction in human rabies cases. With the program's cost recovery scheme, the integration was able to generate funds that were translated into the augmentation of the rabies program workforce, procuring medical supplies and equipment, and providing incentives to program implementers. In conclusion, the integration of One Health Approach has significantly improved the operation and implementation of the rabies prevention and control program in the province.

Key Words rabies control, One Health, integration, Agusan del Norte, Philippines

P 087 >

EVALUATION OF ATTITUDES AND BEHAVIOURS RELATED TO POST-OPERATIVE SURGICAL ANTIMICROBIAL PROPHYLAXIS IN ENTEROTOMY USING DISCRETE CHOICE EXPERIMENTS

Fergus ALLERTON[1],Tina Møller Sørensen[2],Lisbeth Rem Jessen[2],Scott Weese[3],Dorina Timofte[4],Funda Bagcigil[5],Mirja Nolff[6],David Singleton[7],Denis Verwilghen[8],Els Broens[9],Koen Pouwels[10],John Buckell[10]

1. Willows Veterinary Centre and Referral Service

2. Dept. of Veterinary Clinical Sciences, University of Copenhagen, Denmark

3. Dept of Pathobiology and Centre for Public Health and Zoonoses, University of Guelph, Canada

4. Department of Veterinary Anatomy, Physiology and Pathology, University of Liverpool, United Kingdom

5. Department of Microbiology, Istanbul University-Cerrahpaşa, Faculty of Veterinary Medicine, Turkiye

6. Clinic for Small Animal Surgery, University of Zürich, Switzerland

7. IVC Evidensia

8. Sydney School of Veterinary Sciences, University of Sydney, Australia

9. Department of Biomolecular Health Sciences, Utrecht University, Netherlands

10. Nuffield Department of Population Health, University of Oxford, United Kingdom

Introduction

By understanding the drivers of antimicrobial prescription among veterinarians, measures can be taken to improve prescribing behaviour and reduce antimicrobial resistance (AMR).

Objectives

The aim of this study was to investigate veterinarians' attitudes and behaviours related to post-operative surgical antimicrobial prophylaxis following enterotomy.

Methods

An online discrete choice experiment (DCE) was developed in seven languages. The background questions related to the practice, attitudes and behaviours related to AMR. The experiment consisted of six experimental scenarios choosing between not prescribing post-operative antimicrobials or prescribing 3-days or 7-days of antimicrobials. The scenarios were described by several varying attributes: risk of surgical site infection (SSI) with or without resistant bacteria, adverse effects associated with the treatment, and client pressure.

Results

In total, 853 veterinarians from 62 countries across all five World Organisation for Animal Health (WOAH) regions participated. The choice not to prescribe was more common than prescribing three or seven days of antibiotics. Increased risk of SSI with resistant bacteria and client pressure drove antibiotic prescriptions, but neither overall SSI risk nor adverse effects impacted prescription. Antibiotic prescription was associated with male gender, more years in practice, lower knowledge or concern for AMR, or if veterinarians were from Asia, South America, and Africa compared to Europe. No differences in antibiotic prescription probability were observed between Europe, North America, and Australasia.

Conclusion

The study shows that both geographic, client-related and patient-related factors drive antimicrobial prescribing preferences and provides new targets for multifaceted stewardship interventions.

Key Words dog; enterotomy; surgical prophylaxis; antibiotic stewardship

P 088 >

ONE HEALTH APPROACH TOWARDS ELIMINATION OF CANINE RABIES IN NIGERIA BY 2030

OLADAPO OLUDAIRO,AIYEDUN JULIUS,JULIUS AIYEDUN

UNIVERSITY OF ILORIN

Introduction

Rabies is a zoonotic disease that remains one of the most important public health problems globally. Although, new opportunities have emerged to promote health in the rapidly changing human, animal and environment interface, our ability to protect, improve and advance health cannot be based on strategies and mindset of sectoral and mono-disciplinary approach, but rather, a multi-disciplinary, inter-disciplinary One-health approach that embraces human, animal and environment at local, national and international levels

Objectives

Cooperation and interaction between veterinarians, occupational health physicians, public health operators and all stakeholders in the health sector is necessary for one health approach towards Elimination of Canine Rabies in Nigeria by 2030.

Methods

We used the one health strategy to highlight how integration and collaboration among stakeholders could result in more rapid prevention and control of rabies in Nigeria. Traditionally, communication among health workers, animal health workers, dog owners/breeders and dog bite victims has been weak in Nigeria. Data collected were analysed using SPSS version 20

Results

One health strategy provides timely exchange of information among the stakeholders. Consequently, the approach was beneficial in avoiding unnecessary post-exposure rabies prophylaxis, treatment and undue economic burden.

Conclusion

One Health Approach can advance and impact significantly on prevention and control of rabies in dogs thereby contributing to the goal of Elimination of Canine Rabies in Nigeria by 2030. There is need to partner with the government at various levels to implement vaccination and surveillance strategies, using One Health approach to promote and coordinate mass anti-rabies programs in Nigeria.

Key Words One health; Elimination; Canine rabies; Nigeria; 2030.

P 089 >

RETROSPECTIVE STUDY OF VACCINATION AND DEWORMING IN DOGS AND CATS FROM BOTUCATU CITY, SÃO PAULO STATE, BRAZIL.

Natalia Ribeiro Santos,Alessandra Melchert,Julia Santos,Allanah Venturini,Rodrigo Paulo,Jenifer Nascimento,Maria Fernanda Hussni,Sheila Rahal,Priscylla Tatiana Guimarães-Okamoto,Natalia Ribeiro dos Santos

São Paulo State University - UNESP

Introduction

Vaccination and deworming are mainstays of companion animal health and are essential for human health. This practice prevents several diseases, including zoonosis. Therefore, animal owners need guidance on its importance and omission risks. A survey on companion animals' vaccine and deworming practice must clarify the population's participation to solve detected flaws.

Objectives

To assess the vaccination and deworming protocols in dogs and cats evaluated at Veterinary Hospital, Botucatu city, São Paulo state, Brazil.

Methodology

In 2018, medical records were obtained from 1458 dogs and 244 cats, males and females, aged between 1 and 14 years old. Information on vaccination (multi-component vaccine—multivalent and rabies vaccination) and deworming protocols, including the latest application, was obtained.

Results

Among dogs, 78.5% (n=1144) received the rabies vaccine, but only 57.9 (n=844) were updated. Also, 78.5% (n=1071) received multivalent vaccines, but only 47.7% (n=695) were updated. In deworming protocols, 63.3% (n=927) were received, but only 53.4% (n=779) were updated. Of the 244 cats, 63.9% (n=156) received a rabies vaccine, and 35.7% (n=87) received multivalent vaccines. However, only 43.9% (n=107) were updated to rabies and 16% (n=39) to multivalent vaccinations. Fifty-one percent (n=125) have been dewormed, and 41.4% (n=101) were updated.

Conclusions

Greater access to rabies vaccination was probably due to its free distribution in vaccination campaigns. The lower demand for multivalent vaccines was attributed to cost and lack of information. Moderate adherence to the deworming protocols was observed, with fewer updates. The obtained data demonstrate the need for client education regarding the problem.

Acknowledgment

CNPq PQ 312168/2023-3

Key Words Dogs; cats; diseases prevention; public health

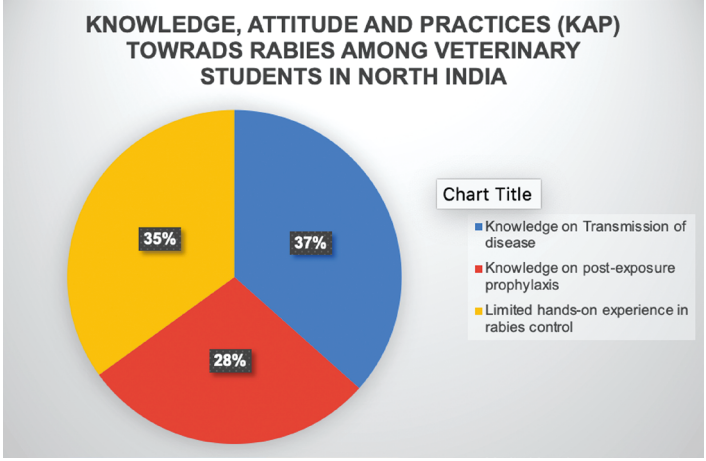
P 090 >

KNOWLEDGE, ATTITUDE AND PRACTICES (KAP) TOWRADS RABIES AMONG VETERINARY STUDENTS IN NORTH INDIA

Atul Pratap Singh[1],Sanjana .[2],Himani Dhanze[1],Amitha Banu S[1]

1. ICAR- Indian Veterinary Research Institute

2. Apollo College of Veterinary Medicine, Jaipur, Rajasthan



Introduction

Rabies is a major public health threat, impacting both humans and animals. Veterinary professionals are key to rabies prevention, yet their knowledge, attitudes, and practices (KAP) are often overlooked. Despite being preventable, rabies causes thousands of deaths annually due to gaps in awareness and vaccination. This study evaluates rabies awareness among future veterinarians to identify gaps and improve education, aiming to enhance their role in eradicating the disease and protecting communities.

Objectives

To assess the level of knowledge regarding rabies transmission, prevention, and treatment among veterinary students, evaluate their attitudes towards rabies control measures, and examine the practical application of rabies knowledge in clinical settings.

Methods

A cross-sectional KAP survey among veterinary undergraduates (n=140) was carried out using a Google Forms questionnaire containing 29 questions on knowledge of rabies, attitudes towards rabies control, and practical experiences related to rabies management. Data were collected through a structured questionnaire and analysed using descriptive statistics and correlation analysis to identify knowledge gaps and behavioral patterns.

Results

The survey revealed significant gaps in rabies knowledge: only 45% knew about transmission, and 35% about post-exposure prophylaxis. Despite positive attitudes, practical application was lacking. Many students (n=60) reported limited access to updated information and hands-on experience. This will be a continuing study to enhance rabies education.

Conclusions

This study reveals significant gaps in rabies knowledge and skills among future veterinarians in North India, highlighting the need for enhanced education, practical training, ongoing professional development, and further study to improve public health outcomes.

Key Words KAP, Rabies, Veterinary Students, Awareness, Safety

Other

P 092 >

MANAGEMENT OF THREE IMMUNE THROMBOCYTOPENIA DISEASED CANINES WITH TRADITIONAL CHINESE VETERINARY MEDICINE AND WEST MEDICINE

Wanbing Pan[1,3],Haidong Pang[2],Weihsin Wang[1,3],Tong Xie[1,3],Jiahao Lin[1,3]

1. College of Veterinary Medicine, China Agricultural University

2. China Agricultural University Veterinary Teaching Hospital

3. Center of Research and Innovation of Chinese Traditional Veterinary Medicine, China Agricultural University

Introduction

Immune thrombocytopenia (ITP) is an autoimmune disorder, the damage of platelets and megakaryocytes and the decreased blood coagulation function is mainly caused by the deficiency of immune tolerance to platelets of the body, which belongs to destructive thrombocytopenia. The survival rate of diseased canines treated with hormone therapy exhibits a notable improvement in a short term, but the long-term treatment has a certain rate of recurrence exists and side effects.

Objectives

To explore if combination of TCVM (Traditional Chinese Veterinary Medicine) and western medicine in clinic to treat ITP of diseased canines was efficient.

Methods

Three cases of canine immune thrombocytopenia were analyzed retrospectively in this study. All cases showed clinical symptoms of skin ecchymosis, and platelet counts (PLT) were extremely low, the diagnosis as ITP was verified by laboratory examination combined with exclusionary analysis. Two of them did not respond well to hormone therapy alone, another one showed Cushing's symptoms due to long-term use of hormones.

Results

All three cases after TCVM diagnosis and treatment combined with west medicine improved with the PLT returned to the normal range within 12 days. PLT of two of them had increased by 4 times and 2 times respectively in day 10 and the remaining case increased 1 time in day 12.

Conclusions

This study provides evidence on the combination of TCVM and western medicine to treat ITP efficiently.

Key Words immune thrombocytopenia; integrated of traditional Chinese and west medicine; canine

Table 1 The diagnosis, therapy and prescriptions of traditional Chinese veterinary medicine

Case number	Syndrome differentiation	Treatment	Chinese medicine prescription	
			The main composition	The compatible composition
1	Exuberant heat internally, frenetic blood heat	Clear heat and remove toxins, cool the blood and stop bleeding	Radix Rehmanniae Recens, Charred imperata, Radix Paeoniae Rubra, Cortex Moutan Radicis, Nodus Nelumbinis Rhizomatis, Cacumen Platycladi, Fried Folium Nelumbinis, Flos Lonicerae, Fructus Forsythiae, Herba Agrimoniae, Fructus Gardeniae, Herba Cirsii, Radix Angelicae Sinensis, Radix Salviae Miltiorrhizae	Addition: Herba Dendrobii, Radix Ophiopogonis, Tortoise plastron
2	Insufficiency of Qi and blood, Qi vacuity containment failure	Supplement Qi and blood, replenish Qi and control the blood	Radix Rehmanniae Praeparata, Rhizoma Bletillae, Fructus Gardeniae, Cortex Lycii, Rhizoma Dioscoreae, Radix Codonopsis, Radix Angelicae Sinensis, Rhizoma Chuanxiong, Herba Agrimoniae, Rhizoma Atractylodis Macrocephalae, Paeoniae Radix Alba, Herba Cirsii, Radix Glycyrrhizae	Addition: Pericarpium Citri Reticulatae, Poria, Fructus Amomi Villosi, Radix Aucklandiae, Moutan Cortex Decrease: Herba Agrimoniae, Rhizoma Dioscoreae, Herba Cirsii, Cortex Lycii, Rhizoma Bletillae, Paeoniae Radix Alba, Fructus Gardeniae
3	Yin deficiency and Qi vacuity blood heat	Enrich Yin and supplement Qi, clear heat and cool the blood	Raw Gypsum, Radix Ginseng, Astragali Radix, Radix Rehmanniae Recens, Radix Ophiopogonis, Rhizoma Atractylodis Macrocephalae, Radix Scrophulariae, Cacumen Platycladi, Radix Angelicae Sinensis, Radix Rehmanniae Praeparata, Charred Lotus Root Node, Fried Folium Nelumbinis, Radix Polygalae, Radix Salviae Miltiorrhizae, Mix-fried Licorice	Addition: Scorch-fried Three Immortals, Fructus Schisandrae Chinensis, Rhizoma et Radix Notopterygii, Radix Angelicae Pubescentis, Radix Achyranthis Bidentatae, Ramulus Mori Decrease: Raw Gypsum, Radix Ginseng, Rhizoma Atractylodis Macrocephalae, Charred Lotus Root Node, Fried Folium Nelumbinis

P 093 >

IMPACT OF LINGZHI AND CHINESE HERBAL MEDICINE SUPPLEMENTATION ON GUT MICROBIOME AND HEALTH IN AGED CATS AND DOGS

Tsz Ching Kwong[1],Alice Hei Yi Man[2],Chi Tung Choy[2],Timothy Man-Yau Cheung[3],Yiu Wa Kwan[1]

1. The Chinese University of Hong Kong

2. Petcision Limited, Hong Kong, China

3. Tian Ran Pet Pet Limited, Hong Kong, China

Introduction

Ageing pets often experience health issues associated with gut microbiome imbalances. Ganoderma lucidum (also known as Lingzhi) and Chinese herbal medicine are known for their health-promoting properties and are commonly used in traditional Chinese veterinary medicine. However, their effects on the gut microbiome and well-being in aged pets have not been well studied.

Objectives

To investigate the changes in gut microbiome and overall health improvement in pets over 10 years old after three months of daily supplementation with two different herbal supplement formulations containing cracked Ganoderma lucidum spores.

Methods

The study recruited 23 dogs and 18 cats aged over 10 years, with consent from their owners. Each pet received either formulation of supplements for three consecutive months. Fecal samples collected before and after supplementation were subjected to 16S rRNA sequencing. Symptoms and overall health improvement were assessed using a structured questionnaire completed by the pet owners.

Results

Preliminary results suggested changes in the gut microbiome profiles at various levels including richness, evenness, and functional diversity ($p < 0.05$). Overall health after supplementation was also significantly improved according to the owner's survey.

Conclusions

This study provides insights into the potential benefits of Lingzhi and Chinese herbal medicine supplementation in aged pets, and could contribute to developing novel dietary strategies for improving their health and well-being. Further studies are warranted to confirm these findings and explore the underlying mechanisms.

Key Words lingzhi; chinese herbal medicine; gut microbiome; supplement; dog; cat

P 094 >

REDUCTION OF PROVIRAL LOAD OF FELINE LEUKEMIA VIRUS EMPLOYING IMMUNOMODULATING PROPERTY OF FIVE THAI EDIBLE PLANT EXTRACTS

Sitthichok Lacharoje[1],Panitnan Punyathi[1],Narisara Chimnakboon[1],Chuleekorn Warinrak[2],Podchara Dechapraphun[2],Panida Poonsin[1],Chutchai Piewbang[1],Somporn Techangamsuwan[1]

1. Animal Virome and Diagnostic Development Research Unit, Department of Pathology, Faculty of Veterinary Science, Chulalongkorn University, Bangkok 10330, Thailand

2. Killer T Cell for Pets Co., LTD, Bangkok 10400, Thailand

Introduction

Feline leukemia virus (FeLV) associates with immunodeficiency in cats. Specific immune modulators like interferon can enhance innate immunity. Canvirol, formulated from extracts of mangosteen, black sesame, soybean, guava, and gotu kola, have shown potential in modulating immune system by reducing viral load of HIV patients. There is no evidence proofing the advantage of Canvirol's use in animals.

Objective

Determine the immunomodulating effects of Canvirol and interferon therapy on FeLV-infected cats

Methods

FeLV-infected cats were assigned to two groups: 10 cats receiving 170 mg/kg/day of Canvirol orally for 120 days, and 10 cats receiving feline Omega Interferon injections at 1 MU/kg/day subcutaneously at day0-4 and day14-18. EDTA-anticoagulated blood was collected at day 0 (D0, prior treatment), D14, D30, D60, D90, and D120. Clinical signs were observed daily. Proviral load was quantified using digital PCR (dPCR). Blood parameters were examined for health monitoring.

Results

All cats receiving Canvirol exhibited stable clinical signs without side effects for 120 days. Health monitoring revealed that blood parameters were within normal ranges, except for mild ALT elevation in three cats and mild anemia in two cats. FeLV-proviral dPCR results showed a decline in proviral load in 9 cats in Canvirol group, ranging from 3% to 99%. While, the proviral load in interferon group increased in 7 cats, ranging from 136% to 1126% compared to their initial levels at D0.

Conclusions

FeLV proviral loads were notably reduced throughout the 120 days of Canvirol treatments, suggesting that Canvirol, providing according to this protocol, is effective in reducing FeLV provirus and safe for cats.

Key Words Antiviral activity; Cat; Feline leukemia virus; Immunomodulating effects; Thai edible plant extract

P 095 >

ISOLATION AND IDETIFICATION OF OTITIS EXTERNA PATHOFENS FROM COMPANION ANIMALS IN HECHI, GUANGXI

Xuanyi Lu,Yixian Wei

GuangxiUniversity

Introduction

Otitis extera(OE) is a common clinical disease in companion animals, characterized by high incidence, recurrence rate, and treatment duration. Staphylococcus pseudintermedius(SP)is a frequent opportunistic pathogen in pet and is often the primary cause of skin and ear canal infections. In recent years, due to increasing bacterial resistance, multi-drug resistant bacteria can be transmitted between pet owners and their companions through shared living spaces, posing significant public health risk.

Objectives

The aim of this study is to isolate and identify pathogenic bacteria causing severe OE in the Hechi of Guangxi, investigate their prevalence and drug resistance, and provide a basis for treating OE in pet.

Methods

After excluding fungal infection through a preliminary microscopic examination, only samples with bacterial infections were retained for further isolation and culture. Following successful isolation and culture, a single colony exhibiting stable growth was selected for 16S rDNA sequencing species identification, and drug resistance testing, to study the strain's characteristics.

Results

From December 2023 to May 2024, a total of 25 swabs with severe OE were collected, and no Pseudomonas aeruginosa infection was found. Among them, 10 strains of Staphylococcus were isolated, with a detection rate of 60%. Among them, 6 strains were SP and did not contain Staphylococcus aureus. One SP strain exhibits high resistance to five antibiotics, including macrolides, and is a multidrug-resistant bacterium.

Conclusions

According to the results, the main pathogenic bacteria of OE in companion animals in Hechi, Guangxi is SP, which has a high degree of drug resistance and multiple drug resistance in some strains.

Key Words Staphylococcus pseudointermedius,;bacterial infection;drug-fast;

P 096 >

EVALUATION OF WOUND HEALING IN CATS WITH SUPER-OXIDIZED SOLUTION (ANIOCYN®)

Rozanaliza Binti Radzi,STEPHANIE LAVANIA PETRUS

Universiti Putra Malaysia

Introduction

A super-oxidized solution (0.03% sodium hypochlorite) is commonly used in the medical field for diabetic wound management. Super-oxidized solutions have a broad-spectrum microbicidal effect. The reaction between hypochlorous acid and the bacterial cell membrane causes cell nonviability; however, there are limited studies of the application of super-oxidized solutions in veterinary practice.

Objectives

To compare the efficacy of Super Oxidized Solution (Aniocynâ) and povidone-iodine 10% in wound treatment based on wound surface area, bacterial load of the wound (CFU/ml), and wound bed scoring (WBS) in cats.

Methods

The treatment-1 group (N=7) wound was irrigated with Aniocynâ (hypochlorous acid 0.03%) and packed with sterile gauze soaked in Aniocynâ. In the treatment-2 group (N=6), the wound was flushed with povidone-iodine 1% and packed with sterile gauze soaked with povidone-iodine 10%. Wound assessments were done on day 0, day 3, and day 7 of hospitalization. The wounds were assessed by the surface area with an acetate tracing grid, bacterial load quantified by colony-forming units using bacterial swab collection, and wound bed assessment score.

Results

The wound surface area from day 0 to day 7 significantly differs ($p < 0.05$) with faster wound healing rate in the Aniocynâ group. There is a significant reduction of bacterial load with wound using Aniocynâ ($p = 0.032$). WBS on day seven were significantly different ($p = 0.044$), with the Aniocynâ group yielding a higher score.

Conclusions

A super-oxidized solution (ANIOCYN®) effectively reduces the wound size, bacterial load, and higher wound bed score.

Key Words Super-oxidized solution; povidone-iodine; woundhealing; colony-forming unit; wound bed score

FIGURE 1: Aniocyn®group

FIGURE 2: Povidone-iodine group

P 097 >

A STUDY OF PORCINE SKIN BIOLOGICAL BANDAGING FOR WOUND HEALING IN FELINES

Dr. Trupti Thavardas Kherkar,Dr. Gajendra Subhanrao , Khandekar,Dr. Santoshmani Tripathi,Dr. Shahir Gaikwad,Dr. Rajesh Rohi

Mumbai Veterinary College, MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY

Introduction

Biological bandages aim to emulate normal skin properties, offering improved protection and facilitating wound healing. While porcine skin grafts are widely used in human medicine, they have received less attention in veterinary practice, with no extensive studies reported in cats.

Objectives

To evaluate the efficacy of porcine skin biological bandaging for wound healing in cat.

Methods

Twelve cats were treated with porcine skin biological bandages. The porcine skin was processed and sterilized, and 0.2 to 0.3 mm thickness grafts were prepared using an electric dermatome. Wounds were cleaned, debrided, and bandages were applied, secured, and changed at 5 day intervals. Physiological and haematobiochemical parameters, wound area, wound contraction, pain, exudate, necrotic tissue, and odor were evaluated on days 0, 5, 10, 15, and 21. Healing rate and duration were recorded, with microbial examinations on days 0 and 21.

Results:

Mean wound contraction ranged from 80% to 100% by day 21. Most cases showed 75-100% granulation and epithelialization by day 21. Significant decreases in wound size were observed on days 5, 10, 15, and 21, resulting in a notable increase in the rate of wound healing and a decrease in the duration of wound healing. Porcine skin bandages exhibited distinct wound margins shortly after application, improved pain and exudate management, and demonstrated effective antibacterial activity.

Conclusions:

Porcine skin biological bandaging is highly effective for wound management in felines, with no adverse effects on haematobiochemical and physiological status.

Key Words Porcine; biological dressing; cat

Pain management

P 099 >

POSTOPERATIVE ANALGESIC EFFICACY OF INTRAVENOUS LIDOCAINE INFUSION IN DOGS UNDERGOING OVARIOHYSTERECTOMY

Wanwisa Chaoum[1],Piyasak Wipoosak[2],Chalermkwan Nonthakotr[2],Supranee Jitpean[1],Naruepon Kampa[1],Thanikul Srithunyarat[1]

1. Faculty of Veterinary Medcine

2. Veterinary Teaching Hospital, Faculty of Veterinary Medicine, Khon Kaen University, Khon Kaen, 40002

Introduction

Perioperative analgesia improves postoperative recovery quality and decreases opioid requirement and hospitalization. Lidocaine, a commonly utilized local anesthetic, can also yield analgesic effects systemically. However, the use of systemic lidocaine for acute pain management is limited and there are few studies evaluating its postoperative analgesic efficacy in dogs after surgery.

Objective

To evaluate the postoperative pain score provided by lidocaine infusion in dogs undergoing ovariohysterectomy (OVH).

Methods

Ten healthy dogs were equally divided into two groups (n = 5/group). Dogs underwent standard OVH procedures with the same anesthetic protocol, including acepromazine, fentanyl, propofol, and isoflurane. In the IV group, dogs received 2 mg/kg lidocaine intravenously, followed by an infusion rate of 50 µg/kg/min, whereas the control group received normal saline. Postoperative pain was assessed using the Glasgow Composite Measure Pain Scale–short form (CMPS-SF) and the Colorado State University Canine Acute Pain Scale (CSU-CAP) at 60 and 120 minutes after extubation. Data was statistically analyzed using Mann-Whitney U test.

Results

At 120 minutes, the CMPS-SF pain score was significantly lower in the IV group compared to the control group (1 vs. 3, p=0.02). Although the CSU-CAP score was lower in the IV group than in the control group, the difference was not statistically significant.

Conclusion

Intravenous lidocaine infusion can reduce early postoperative pain in dogs after OVH. Hence, incorporating systemic lidocaine into the anesthetic protocol for dogs undergoing surgery is recommended to achieve optimal postoperative pain management.

Key Words Intravenous lidocaine infusion; ovariohysterectomy; postoperative pain management

Pharmacology

P 101 >

DELPHINIDIN DECREASES INFLAMMATORY RESPONSE OF CANINE NEUTROPHILS

Alejandra Isabel Hidalgo Gómez,Rafael Agustin Burgos Aguilera,María Angélica Hidalgo Gómez

University Austral of Chile

Introduction

Neutrophils are the body's first line of defense, being capable of releasing reactive oxygen species (ROS), metalloproteinases 9 (MMP9) and neutrophil extracellular traps (NETs). Delphinidin is a compound found in fruits endemic to the region and has anti-inflammatory effects in vitro and in laboratory animals and humans. Therefore, we want to know the effect of delphinidin on the in vitro immune response of canine neutrophils.

Goals

Determine the effect of delphinidin on the inflammatory response of canine neutrophils, through the quantification of ROS, MMP9 activity, quantification of NET by measuring the production of cell-free DNA and determination of intracellular calcium mobilization.

Material and methods

The randomized study used 20 clinically healthy dogs, from 1 to 6 years of age, from which a venous blood sample was obtained to neutrophil isolation was performed using the gradient centrifugation method. ROS production was quantified using the luminol luminometric method. MMP9 activity was determined by zymography. NET quantification was determined by producing cell-free DNA with Picogreen. Quantification of intracellular calcium mobilization was performed with the FURA AM probe.

Results

Delphinidin decreased ROS production, metalloproteinase 9 activity, NET production, and intracellular Ca mobilization.

Conclusion

Delphinidin decreases the inflammatory response of the canine neutrophils. This research is the beginning of the study of the use of delphinidin on the immune response in dogs, since we want to evaluate the use of delphinidin as a nutritional supplement for dogs with inflammatory conditions.

Research funded by Fondecyt project number 11230785

Key Words canine, inflammation; neutrophils; delphinidin

Reproduction, pediatrics

P 103 >

APPLICATION OF THE COAT COLOR GENES FOR SELECTIVE BREEDING: A STUDY IN TRADITIONAL THAI SUPHALAK CAT

Janjira Phavaphutanon

Kasetsart University

Introduction

Suphalak cat is an extremely rare traditional Thai purebred cat. In the early 2016s, a group of Thai cat breeders decided to set up a breeding program. The overall phenotype of selective cats was acceptable except the appearance of marking point on its extremity. The mask on the face and darkened paws could be assumed that the color point alleles may be present in the selective population.

Objectives

To apply genetic testing of the coat color genes for selective breeding in Suphalak cat. Three coat color genes responsible for coat color involving color point (Tyrosinase), brown (Tyrosinase related protein 1) and dilute color (Melanophilin) genes were selected to investigate.

Methods

DNA samples were obtained from 127 cats, 61 cats from the Thai cat conservation center date back to 2011-2018 and 66 cats from Thai cat breeders from 2015-2020. Primers were designed to identify the 7 SNP target of 3 genes. PCR products were amplified and verified SNP target by sequence analysis. Genotype data were used to designed for selective breeding.

Results

Totally solid brown Suphalak cat can be expressed as a phenotype of 3 different genotypes: brown (bb genotype), color point (CC or Ccb, Ccs genotype), and dilution gene (DD or Dd genotype). Selective breeding after understands the pattern of coat color genetic inheritance, the frequency of undesirable point alleles was dramatically decreased.

Conclusions

The result indicated that coat color genetic testing approach could apply for selective breeding program to reduce the undesirable alleles in the Suphalak cat population.

Key Words Suphalak cat, coat color gene, Thai

P 104 >

EMPOWERING VETERINARY PRACTICE: EXPLORING THE INTRICACIES OF WSAVA REPRODUCTION CONTROL GUIDELINES

kurt de cramer

Rant en dal animal hospital

Introduction

Reproduction control in dogs and cats has classically involved gonadectomy (removal of gonads) and is the most common surgery in small animal practice around the world. Also, gonadectomy has always been the routine recommendation for both sexes in dogs and cats as the healthy option for the animal that simultaneously solves the problem of pet overpopulation and behavioural problems associated with keeping intact dogs and cats as pets. The recommended age varied from young adulthood to prepubertal and even pediatric. However, there is an increasing awareness of potential harm as it became apparent that a variety of non-neoplastic and neoplastic conditions occur more commonly in gonadectomized than intact dogs and that risk increases the earlier the age at surgery with large and giant breed dogs being more affected. Cats are less affected. Objectives

The emerging data surrounding health benefits and detriments in dogs and cats have been extensively reviewed in the WSAVA Reproduction Guidelines and wishes to create increased awareness of the need by all stake holders in academia, private practice and shelter/welfare organizations, that routine gonadectomy for all pets under all circumstances may no longer be best practice and for select cases alternatives such as hysterectomy and vasectomy as well as using chemical means of desexing may be appropriate.

Conclusions

Ultimately, decisions surrounding gonadectomy should be based on a thorough individual assessment to ensure the best outcome for the animal, the client, and the broader community. The veterinarian has an important role to play regard.

Key Words dog; cat; gonadectomy; hysterectomy; vasectomy

P 105 >

PYOMETRA AND INFERTILITY IN BITCHES AND QUEENS_ABSTRACT

Natali Krekeler

The University of Melbourne

Pyometra, a life-threatening uterine infection, which primarily affects middle-aged, intact female dogs during dioestrus. Ovariohysterectomy remains the treatment of choice. The pathogenesis is multifactorial,, including age, ovarian hormones, breed, parity, and exogenous hormone exposure.

Pyometra typically occurs in older, ovary-intact bitches, with a mean age of 7 to 8.5 years. Certain breeds (e.g., Golden Retrievers, Cavalier King Charles Spaniels) are predisposed, while others (Dachshunds, Fox Terriers) show lower incidence.

The canine oestrous cycle features a prolonged progesterone-dominated phase, which predisposes bitches to pyometra.. Cats, being induced ovulators, have lower pyometra rates as they usually don't have long phases of progesterone exposure.

Vulvar discharge varies based on cervix patency. Individuals with an open cervix exhibit more discharge, while closed-cervix cases are commonly more severe. Systemic signs include vomiting, depression, and abdominal distention.

Diagnosis

Ultrasonography reveals a thin-walled, fluid-filled uterus. Laboratory findings show typically an elevated white blood cell counts (neutrophilia).

Prognosis

Survival is favorable with timely medical or surgical intervention. Recurrence risk exists, emphasizing the need for careful breeding management.

Medical and surgical treatment options exist. Surgical options usually involve ovariohysterectomy, which leads to the loss of the breeding potential of the animal. Medical treatment needs to include removal of the progesterone source (induction of luteolysis), which allows cervical opening and drainage of pus and elimination of bacteria through an open cervix aided by uterine contractions.

Furthermore, infertility will be discussed. Infertility is often multifactorial and a sound understanding of "the normal oestrous cycle" is paramount in order to diagnose and treat the condition.

Key Words pyometra, infertility, bitch, queen, oestrous cycle

Soft tissue surgery and oncosurgery

P 107 >

SUCCESSFUL RESOLUTION OF NON-PERFORATION PNEUMOPERITONEUM RESULTING FROM AEROBIC BACTERIAL STEATITIS IN A PREVIOUSLY HEALTHY CAT: A CASE REPORT

Natcha Darayen

Kasetsart University Veterinary Teaching Hospital (KUVTH) Bangkhen

Introduction

Pneumoperitoneum is defined as an accumulation of free gas within the abdominal cavity. Previously documented causes in dogs and cats encompass gastrointestinal perforations, intra-abdominal infection with gas-forming organisms and Idiopathic been reported.

Objectives

We believe this is the first published case of non-perforation pneumoperitoneum secondary to aerobic bacterial steatitis in a previously healthy cat.

Case description and Method

A 9-year-old neutered male domestic shorthair cat, kept indoors, presented with a 3-day history of abdominal distension and tympany. Upon physical examination, no sign of abdominal compartment syndromes were observed. Diagnosis of pneumoperitoneum was established through plain abdominal radiography. Subsequent computed tomography revealed fluid in the caudal region of the stomach body. During the emergency laparotomy, no gastrointestinal leak was detected; however, fat necrosis was identified on the right side of the lesser curvature. Peritoneal effusion sampling yielded a positive result for Pseudomonas aeruginosa, while biopsy results confirmed necrotizing steatitis in the affected fat tissue.

Results

The cat recovered from surgery and was closely monitored for complication throughout its hospitalization until suture removed. After 3 years of follow up no recurrence of pneumoperitoneum was detected.

Conclusion

Our case provides evidence that aerobic abdominal infection may be an underlying cause of pneumoperitoneum. CT scan and surgical intervention is recommended to address and treat the cause effectively.

Key Words Pneumoperitoneum; aerobic bacterial; steatitis

P 108 >

BILATERAL TONSILLECTOMY FOR TONSILLAR MASS WITH GRANULAR CELL TUMORS IN DOG

Kannika Wanapinit,Pharkpoom Budsayaplakorn

Kasetsart university

Introduction

Granular cell tumors are rare occurrences in both humans and dogs, with no documented reports of such tumors being identified in the tonsils of dogs.

Objective

The first report of a granular cell tumor within the tonsil of a dog.

Case description

A 1-year-old intact French bulldog presented with chronic regurgitation over a period of one week. Radiography with barium contrast media revealed no obstruction, megaesophagus, or constriction of the esophagus. Physical examination revealed a stertor sound, especially when pressure was applied under the mandibular area. During the surgical procedure, the right and left tonsils were observed to be enlarged and irregularly shaped, measuring 4x5 cm and 3x4 cm, respectively. Furthermore, an elongated soft palate was noted. Consequently, bilateral tonsillectomy and staphylectomy were performed. One month following the surgical procedure, a reduction in the dog's respiratory noise was noted. The dog was able to sleep comfortably, and regurgitation was no longer present. The tonsils were submitted for histopathological analysis, which confirmed the presence of granular cell tumors.

Results

After the surgical procedure on this dog, symptoms associated with regurgitation and stertor sounds decreased, and no tonsil or mass was identified in the tonsillar fossa.

Conclusion

This case presents the identification of a granular cell tumor in the tonsil of a dog. Surgical intervention was conducted, resulting in a successful outcome. Consequently, the dog's quality of life has significantly improved, marked by the absence of regurgitation symptoms and a decrease in stertor sound. Additionally, no recurrence has been observed.

Key Words Granular cell tumor; Tonsil; dog

P 109 >

CARDIOVASCULAR EFFECTS OF INCREASED INTRA-ABDOMINAL PRESSURE IN DOGS UNDERGOING LAPAROSCOPIC SURGERY

G. S. Khandekar Khandekar,Harshal Patil Patil,S. D. Tripathi Tripathi,S.V.Gaikwad Gaikwad,R. R. Rohi Rohi,Dishant Saini Saini,Rutuja Sawant Sawant,Gajendra Khandekar

Mumbai Veterinary College, Parel, Mumbai, 400012.

Introduction

Laparoscopic surgery offers significant advantages over traditional open surgery, such as reduced recovery time and smaller incisions. However, the increase in intra-abdominal pressure (IAB) from CO2 pneumoperitoneum can negatively impact various organs, particularly the circulatory system, potentially leading to complications like hypertension, arrhythmias, and cardiovascular collapse.

Objective

This study aimed to evaluate the cardiopulmonary changes resulting from the anesthetic procedure and increased IAB in dogs during laparoscopic surgery.

Method

The study included twelve female mongrel dogs undergoing laparoscopic ovariohysterectomy. The dogs were sedated with butorphanol, induced with propofol, and maintained on isoflurane anesthesia. Comprehensive systemic investigations, including echocardiographic examinations, were performed on each dog.

Results

Increased IAB led to a significant rise in mean arterial pressure, which was significantly lowered by the induction of anesthesia. Echocardiographic parameters such as ejection fraction (EF) and cardiac output (CO) decreased significantly by 9% and 33%, respectively, after anesthesia induction, and by 8% and 5%, respectively, after the increase in IAB. Other parameters, such as fractional shortening (FS) and stroke volume (SV), did not show significant changes.

Conclusion

While increased IAB caused cardiovascular depression, the changes remained within physiological limits and were transient. These changes were well tolerated by healthy dogs.

Key Words CO2 pneumoperitoneum, Laparoscopic surgery, Echocardiography, Increased intra-abdominal pressure.

P 110 >

USE OF CELL SAVER DEVICE FOR AUTOTRANSFUSION OF INTRAOPERATIVE HAEMORRHAGE IN 54 DOGS : 2019-2024

Anna Michalska,Lily-Ann White,Nick Bacon,Laurent Findji,Jonathan Bray

AURA Veterinary

Introduction

A Cell Saver Device (CSD) allows autotransfusion of patients by retrieving blood lost during surgery and has been shown to reduce use of homologous blood product. The CSD mechanically filters and processes the suctioned blood and fluid, to allow reinfusion of red cells to the patient.

Objectives

This retrospective case series describes the surgical cases where CSD was used and to evaluate the impact of potential blood transfusion reactions (BTRs).

Methods

Medical records were reviewed from dogs undergoing various surgeries where CSD was utilized and autotransfusion was subsequently performed. The volume and the packed cell volume (PCV) of the processed blood were assessed as a proportion of total blood volume. The pre-operative PCV of the patient was compared with the PCV post-transfusion. Symptoms of BTRs were evaluated for their life-threatening nature and impact on recovery time.

Results

A CSD was used in 54 dogs during splenectomy (n=23), liver lobectomy (n=20), maxillectomy (n=8), nephrectomy (n=2) and adrenalectomy (n=1). Swab washing and direct aspiration of the dissection field was performed in 22 dogs. Blood was reinfused either intra-operatively (n=40) or post-operatively (n=14), with infused volumes ranging from 2.36% to 43.78% of the patient's total blood volume. Autotransfusion resulted in an average increase in PCV of 9.47%. One patient developed a delayed BTR.

Conclusions

The CSD allowed collection of blood across a range of surgery types, with blood collected by swab washing in over 40% of patients. Use of the CSD appears safe, with a delayed non-immunologic BTR observed in one patient.

Key Words Autotransfusion; Cell Saver Device; Blood transfusion reactions; Intra-operative blood transfusion

Sports medicine and rehabilitation

P 112 >

THE RELATIONSHIP BETWEEN HINDLIMB JOINT ANGLES UNDER THE PASSIVE MOVE OF HIP JOINT IN HEALTHY BEAGLE DOGS UNDER GENERAL ANAESTHESIA

Linjing Kong,Yasuji Harada,Yasushi Hara

Nippon Veterinary and Life Science University

Introduction

In human medicine, wearable robotic exoskeleton can help rehabilitation in patients with hindlimb disability. However, a simplified exoskeleton, using the linked movement of hindlimb joints rather than copying all the muscle function, might be more suitable for canine patients.

Objectives

To investigate the related changes in stifle and ankle joint angles under the passive move of hip joint in Beagles.

Methods

Nine hindlimbs of five clinically normal adult Beagles were included.

The dog with general anaesthesia and muscle relaxant was positioned laterally with the tested hindlimb on top and parallel to the desk. The hip joint angle was adjusted from 90° to 160° intermittently, with the paw (1)unforced, (2)under constant pushing or pulling force, and (3)after withdrawing the force. X-rays were taken each time to achieve the (1)stifle and ankle joint's unforced angle (UA), (2)forced angle range (FAR) and (3)unforced angle range (UAR). The linear relationships between hip, stifle and ankle joint angles were evaluated by linear regression analysis.

Results

A significant linear correlation was found between the angles of stifle and hip($R^2>0.85$, $P<0.001$), ankle and hip($R^2>0.7$, $P<0.001$) in UR and UAR, and also in FAR-push when the hip angle is over 120°. A significantly strong linear correlation between the angles of stifle and ankle was found in UA($R^2>0.85$, $P<0.001$) and FAR-push($R^2>0.95$, $P<0.001$).

Conclusion

It is possible to deduce the stifle and ankle angles by hip angle, which may contribute to the design of a simplified canine exoskeleton. The FAR also provide the reference of safe angle range for stifle and ankle under different hip angles.

Key Words simplified canine exoskeleton; Beagle; hindlimb joint angles; linear correlation

P 113 >

THE EFFECTIVENESS OF UNDERWATER TREADMILL THERAPY IN DOGS AFTER FEMORAL HEAD AND NECK OSTECTOMY

Naruepon Kampa,Phimrawee Ngampring,Parichat Naknil,Somphong Hoisang,Nichanan Maneegan,Pongsatorn Tuchpramuk,Thanikul Srithunyarat

Khon Kaen University

Introduction

Femoral head and neck ostectomy (FHO) is a surgery that provides pain relief for dogs with hip conditions/diseases that do not respond to medication. Lameness and muscle atrophy are common complications after FHO. Underwater treadmill therapy is a form of therapeutic exercise used to accelerate recovery and restore functions relying on the properties of water, particularly viscosity and buoyancy.

Objective

To evaluate the effectiveness of underwater treadmill therapy in dogs after FHO

Methods

Nine dogs after FHO without other underlying orthopedic issues were divided into two groups: one receiving underwater treadmill therapy on week 3-12 (n = 4) and the other without (n = 5). Orthopedic evaluations and canine gait analysis, including measurements of lameness score at trot, pain score, thigh circumference, and peak vertical force (PVF) using a force plate and gait analysis software, were conducted every month over a three-month period to assess outcomes.

Results

The lameness score was significantly decreased and PVF was significantly increased in the FHO limb. Moreover, a significant difference in PVF was found between the underwater treadmill therapy group and the group without therapy within three months ($p < 0.05$). However, there were no significant changes in the pain score and thigh circumference of the FHO limb ($p > 0.05$).

Conclusion

The study indicated that underwater treadmill therapy improves PVF, reduces lameness, and shortens recovery time in the FHO limb. Therefore, underwater treadmill therapy is highly recommended for dogs after FHO.

Key Words Femoral head and neck ostectomy, underwater treadmill, rehabilitation, canine gait analysis

Veterinary communication

P 115 >

"PAWS AND PIXELS: HARNESSING DIGITAL TECHNOLOGY FOR ENHANCED VETERINARY COMMUNICATION IN SMALL ANIMAL PRACTICE"

Muhammad Fiaz Qamar

University of Veterinary and Animal Sciences

Introduction

In the modern era, veterinary medicine has witnessed a paradigm shift with the integration of digital technology into small animal practice. This study aimed to explore the utilization of digital technology for enhancing veterinary communication in small animal practice, recognizing its potential to revolutionize client engagement and patient care.

Objectives

The objectives of this study were twofold: firstly, to assess the current landscape of digital technology adoption among veterinary clinics specializing in small animal care, and secondly, to evaluate the impact of digital communication tools on client satisfaction and veterinary-patient relationships.

Methods

A comprehensive survey was conducted among small animal veterinary practices across diverse geographic regions. The survey questionnaire elicited information regarding the types of digital communication tools utilized, including telemedicine platforms, mobile applications, and social media channels. Additionally, qualitative interviews were conducted with veterinarians and pet owners to gather insights into their experiences and perceptions of digital communication in veterinary practice.

Results

The results of the study revealed widespread adoption of digital communication tools among small animal veterinary practices, with telemedicine emerging as a preferred modality for remote consultations and follow-up care. The use of mobile applications for appointment scheduling, medication reminders, and educational resources was also prevalent among clients. Furthermore, both veterinarians and pet owners reported increased convenience, accessibility, and satisfaction with the use of digital technology in veterinary communication.

Conclusions

In conclusion, the findings of this study underscore the transformative potential of digital technology in small animal veterinary practice.

Key Words Veterinary Communication, Digital Technology, Small Animal Practice, Enhanced Communication, Paws and Pixels

P 116 >

CAREGIVER BURDEN OF DOGS AND CATS UNDERGOING ANTICANCER THERAPY IN A REFERRAL HOSPITAL IN HONG KONG: PRELIMINARY RESULTS

Ka Ming Tam[1],Antonio Giuliano[2,3],Syed Saad Ul Hassan Bukhari[2],Paulo Vinicius Mortensen Steagall[2]

1. City University of Hong Kong

2. Department of Veterinary Clinical Sciences, Jockey Club College of Veterinary Medicine and Life Sciences, City University of Hong Kong

3. CityU Veterinary Medical Centre, City University of Hong Kong

Introduction

Caregiver burden impacts the client's psychosocial well-being, causes burnout in veterinarians through burden transfer, and compromises the veterinarian-client relationship.

Objectives

To examine the prevalence of caregiver burden and explore potential predictors of increased burden among caregivers of pets undergoing anticancer therapy.

Methods

An online survey (24 questions) was used to determine the prevalence of caregiver burden (n = 35) in the oncology service of a large veterinary hospital in Hong Kong. Caregiver burden was based on an adapted and abbreviated Zarit Burden Interview score (7 questions; up to 28 points with cut-off of ≥ 9 points for increased burden). Univariable and multivariable logistic regression models were used to identify predictors of caregiver burden between increased versus normal burden groups ($P \leq 0.05$). Predictors include demographic, cancer, and anticancer data.

Results

A total of 65.7% of owners presented increased caregiver burden. Owners (%) agreed that cost (71%) and side effects (74%) of anticancer therapy are important concerns. First-time pet owners were 4.58 times more likely to experience greater burden than non-first-time owners [95% CI (0.95-22.230; P=0.05)]. The duration, type, and treatment response of anti-cancer therapy were not significant predictors.

Conclusion

Caregiver burden is experienced by the majority of clients when their dogs and cats undergo anticancer therapy, potentially impacting their psychosocial well-being. Veterinarians should be aware of increased burden in first-time pet owners. Communication should focus on the cost and potential side effects of anticancer therapy as they were perceived as the important concerns.

Key Words Caregiver burden; Zarit burden interview; Cancer; Veterinary-client relationship; oncology