P01 / #419

Topic: *AS01 Alternative medicine, homeopathy and acupuncture*

INTEGRATING YUNNAN BAIYAO WITH CONVENTIONAL MEDICINES AS AN ALTERNATIVE TREATMENT FOR AURAL HEMATOMA IN DOGS

Chee May Wong[1], Deng Shan Shiau[2]
[1]Everise Vet Center, 21, Jalan Kp 1/4,, Kajang, Selangor Darul Ehsan, Malaysia, [2]Chi University, Tcvm, Reddick, United States of America

Introduction:

Yunnan Baiyao (YB) is a Chinese herbal medicine wih hemostatic efficacy for treating aural hematoma (AH), internal and external bleeding due to trauma or tumors, surgical bleeds, epistaxis, gastrointestinal hemorrhage, DIC, Von Willebrand's disease with abnormal bleeding or thrombocytopenia.

Objectives:

This retrospective study investigated the efficacy of an integrative treatment combining YB with antibiotics on 29 dogs diagnosed with AH not suitable to receive invasive conventional surgical procedure due to other health conditions.

Methods:

Two groups of dogs based on treatment received: Test group (N = 18) received the test integrative treatment; Control group (N = 11) received only antibiotics. An AH scoring system (rated from 0 to 5, with 0 being free of AH) was used to assess the treatment outcomes, each dog was assessed on Day 1 (baseline), Week 1, and 4 weeks after the treatment.

Results:

Improvements on AH score were compared between the two treatment groups. No significant difference between the two groups in baseline AH score was found (mean±SD: Test 3.4±1.1 vs. Control 3.5±0.8; $p = 0.79$) and the improvement of AH score in Week 1 was not significant in either group (Test: $p = 0.50$; Control: $p = 1.00$). After 4 weeks, both groups' AH scores were significantly improved (Test: $p = 0.0003$; Control: $p = 0.008$), but the improvement in the Test group was significantly greater than that in the Control group (mean±SD: Test 2.4±1.7 vs. Control 1.6±0.5; $p = 0.009$).

Conclusions:

The finding suggest that integrating YB with antibiotics may enhance the treatment efficiency for dogs with AH.

P02 / #423

Topic: *AS01 Alternative medicine, homeopathy and acupuncture*

MODIFIED SCALP ACUPUNCTURE (MSAP) FOR TREATMENT OF NEUROLOGICAL SYNDROMES IN DOGS

Chee May Wong[1], Deng Shan Shiau[2]
[1]Everise Vet Center, 21, Jalan Kp 1/4,, Kajang, Selangor Darul Ehsan, Malaysia, [2]Chi University, Tcvm, Reddick, United States of America

Introduction:

Scalp Acupuncture (SAP) is a type of specialized acupuncture techniques with direct brain stimulation (points on the scalp) and microsystem based on the theory of neuroanatomy, neurophysiology and bio-holographic principle of modern medicine. SAP generally used for motor enhancement, motor suppression and sensory organ enhancement since the brain activity can be influenced by afferent nerves in the scalp to regulate functions of CNS, endocrine system that are measurable with electroeencephalogram.

Objectives:

To improve SAP's practicality and effectiveness, a modified SAP (mSAP) dry needle technique is proposed with the objectives to mitigate discomfort to patients, without requiring needle rotations at the subcutaneous region with longer duration dry needle technique stimulation, and to shorten the acupuncture recovery period.The retrospective study reported herein evaluated the efficacy of mSAP as part of TCVM integrative treatments on 45 dogs with neurological signs upon presentation.

Methods:

The dogs were categorized into two groups based on the treatment received: the Test group (N = 34) received the mSAP-integrated treatment for three to five days, whereas the Control group (N = 11) received TCVM integrative treatments without mSAP. Time-to-recovery (TTR; in weeks) data were collected and compared between the two treatment groups.

Results:

The mean±SD TTR in the Test group was 2.8±1.5 week, which was significantly shorter ($p = 0.029$) than that in the Control group (4.8±3.2 weeks).

Conclusions:

This finding suggests that applying mSAP in TCVM integrative treatment regime may further shorten the recovery period compared to commonly practiced TCVM integrative treatment regime without mSAP when treating dogs with neurological syndromes

P03 / #325

Topic: *AS02 Anesthesia*

AN ANATOMICAL PILOT STUDY ON THE TRANSVERSUS ABDOMINIS PLANE BLOCK IN OBESE CATS.

Marta Garbin[1], Paulo Steagall[1,2]
[1]Faculty of Veterinary Medicine, Université de Montréal, Department Of Clinical Sciences, Saint-Hyacinthe, Canada, [2]Jockey Club College of Veterinary Medicine and Life Sciences, City University of Hong Kong, Department Of Veterinary Clinical Sciences And Centre Animal Health And Welfare, Hong Kong, China

Introduction:

Ultrasound-guided transversus abdominis plane (TAP) block with local anesthetics is used for perioperative pain management in cats. In obese patients, this block can be challenging to perform due to layers of fat within the abdomen and subcutaneous tissue.

Objectives:

To determine the anatomical distribution of fat in the abdominal wall of obese cats and to compare the injectate spread and spinal nerve staining after a TAP block based on lean (LBW) versus actual body weight (ABW).

Methods:

Three cat cadavers (7.45 ± 0.33 kg; body condition score 9/9) were used. The first cat was dissected to identify the TAP and describe the adipose tissue distribution. Cats 2 and 3 received a two-point ultrasound-guided TAP injection of 0.25 ml/kg/point based on LBW and ABW, respectively. They were then dissected to determine injectate distribution and number of thoracic (T) and lumbar (L) spinal nerves stained >1 cm circumferentially.

Results:

In all cats, a layer of hypoechoic adipose tissue was observed ventral to the costal arch, between rectus and transversus abdominis, and a second layer between obliquus internus and transversus abdominis. The spinal nerves lie between the adipose layer and the transversus abdominis. LBW- and ABW-based injectate volume stained the ventral branches from T12 to L1 and from T11 to L1, respectively.

Conclusions:

This pilot study characterized the anatomical adipose tissue distribution within the TAP in three obese cats. Injectate volumes based on ABW may provide wider staining of T and L spinal nerves when compared with LBW in clinical practice.

P04 / #380

Topic: *AS02 Anesthesia*

PHARMACOKINETICS AND ANALGESIC EFFICACY OF TWO DOSES OF BUPIVACAINE BY TRANSVERSUS ABDOMINIS PLANE BLOCK IN CATS UNDERGOING OVARIOHYSTERECTOMY.

Marta Garbin[1], Javier Benito[1], Héléne Ruel[1], Ryota Watanabe[1], Beatriz Monteiro[1], Petra Cagnardi[2], Paulo Steagall[1,3]
[1]Faculty of Veterinary Medicine, Université de Montréal, Department Of Clinical Sciences, Saint-Hyacinthe, Canada, [2]University of Milan, Department Of Veterinary Medicine And Animal Sciences, Lodi, Italy, [3]Jockey Club College of Veterinary Medicine and Life Sciences, City University of Hong Kong, Department Of Veterinary Clinical Sciences And Centre Animal Health And Welfare, Hong Kong, China

Introduction:

Bupivacaine is a long-acting local anesthetic largely used in veterinary medicine for regional anesthesia. The ultrasound-guided transversus abdominis plane block (TAPB) is a regional technique used to desensitize the abdominal wall.

Objectives:

To determine the pharmacokinetics and efficacy of bupivacaine after TAPB in cats undergoing ovariohysterectomy.

Methods:

Twelve healthy adult cats were included in a prospective, randomized, masked clinical trial. Anesthetic protocol included acepromazine-buprenorphine-propofol-isoflurane-meloxicam. Each cat received 1 mL/kg of bupivacaine 2% or 2.5% (BUPI-2 and BUPI-2.5, respectively) via bilateral TAPB before surgery (n = 6/group). Blood was collected for up to 8 h post-TAPB. Pain was evaluated using the short-form UNESP-Botucatu composite pain scale (SF-CPS) before and at 2, 4, and 24 h after surgery. Buprenorphine (0.02 mg/kg, IV) was administered when SF-CPS ≥ 4. Bupivacaine plasma concentrations and pharmacokinetics were determined using liquid chromatography-tandem mass spectrometry, and one-compartment model and non-compartmental analysis, respectively. Mean pharmacokinetic parameters and pain scores for each treatment group were analyzed using unpaired t-tests ($p < 0.05$).

Results:

Maximum bupivacaine plasma concentrations (Cmax) for BUPI-2 and BUPI-2.5 were 1.17 ± 0.51 and 1.81 ± 0.53 µ/mL at 33 ± 14 and 47 ± 22 min (Tmax), respectively. Post-operative SF-CPS scores were 3 ± 2 and 2 ± 2 in BUPI-2 and BUPI-2.5, respectively. Pharmacokinetic parameters and pain scores were not different between groups ($p > 0.05$). None of the cats required rescue analgesia.

Conclusions:

A TAPB with 2 or 2.5 mg/kg of bupivacaine produced concentrations below toxic levels and similar analgesic effects.

P05 / #12

Topic: *AS02 Anesthesia*

EFFECTS OF TWO CONTINUOUS INFUSION DOSES OF LIDOCAINE ON ISOFLURANE MINIMUM ANESTHETIC CONCENTRATION (MAC) IN CHICKENS

Andre Escobar, Brighton Dzikiti, Jemma Thorogood, Sabrina Bailey, Barbara Quintana, Sabrina Daniels, Jill Maney
Ross University School of Veterinary Medicine, Clinical Sciences, Basseterre, Saint Kitts and Nevis

Introduction:

Lidocaine is a local anesthetic with MAC-sparing effects in mammalian species.

Objectives:

To determine the effect of lidocaine on isoflurane MAC in chickens.

Methods:

The MAC of isoflurane was determined in six adult female chickens using electrical stimulation and the bracketing technique in duplicate. Chickens were mechanically ventilated, and body temperature was controlled. Subsequently, two different doses of lidocaine were administered IV in a randomized cross-over design (3 or 6 mg/kg) followed by a constant rate infusion (3 or 6 mg/kg/hour), with a one-week washout period. The lidocaine effect on the MAC of isoflurane was determined at approximately 1.5 and 3 hours after bolus administration. Blood samples were collected immediately after MAC measurement to determine lidocaine and norlidocaine plasma concentrations. Data were analyzed using a mixed-effects model for repeated measurements.

Results:

The mean ± SD isoflurane MAC (Vol%) was 1.47 ± 0.18. Isoflurane MAC after 1.5 and 3 hours of low-dose infusion were 1.32 ± 0.27 and 1.26 ± 0.09, and after high-dose infusion were 1.28 ± 0.06 and 1.30 ± 0.06. Neither were different from baseline. Lidocaine plasma concentration for the low and high dose at 1.5 hours were 482 ± 97 and 1195 ± 371 ng/mL and were not different at 3 hours within groups. Norlidocaine plasma concentration increased from 422 ± 62 to 521 ± 79 ng/mL for the low dose and did not change with time for the high dose (929 ± 199 ng/mL).

Conclusions:

Lidocaine did not affect isoflurane MAC in chickens.

P06 / #462

Topic: *AS02 Anesthesia*

CARDIORESPIRATORY RESPONSES OF ANAESTHETISED RABBITS TO DIFFERENT BODY POSITIONS

Emmanuella Sogebi[1], Adeniran Adetunji[2], Cecilia Oguntoye[2], Ann Cliff[3]
[1]Federal University of Agriculture, Department Of Veterinary Surgery & Theriogenology, Abeokuta, Nigeria, [2]University of Ibadan, Department Of Surgery & Radiology, Ibadan, Nigeria, [3]Federal University of Agriculture, Department Of Surgery & Theriogenology, Abeokuta, Nigeria

Introduction:

Cardiorespiratory responses and relative safety of commonly employed body positioning of rabbits during anaesthesia was evaluated using blinded randomized crossover study.

Objectives:

determine the relative safety of the commonly employed body positions in anaesthetised rabbits.

Methods:

The study and design were approved by the CREC, (CREC/2020/12/01). Eighteen adult mixed breed rabbits with an average weight of 2.5± 0.5kg were used, six in each group of three trials. Each one received a mixture of $3mgkg^{-1}$ midazolam and $40mgkg^{-1}$ ketamine intramuscularly, then positioned as desired on the table. Cardiorespiratory variables (heart, respiratory rates,oxygen saturation, blood pressure) and rectal temperature were measured at ten minutes interval over a period of one hour. Anaesthetic indices (onset and duration of hypnosis, recovery time) were calculated. Data obtained were expressed as mean± SD and subjected to one way analysis of variance for repeated measure. Post hoc test was carried out using the Least Significant Test. $p \leq 0.05$ was considered significant.

Results:

The rabbits in SP had a significant drop in MAP (mmmHg) 51.1±23.7compared to LP, PP. Also SP, LHD had a significant drop in SPO_2 (%) (85.2±24.6) and (70.2 ±20.9) respectively. Onset of hypnosis were within 3 minutes in all groups, duration of hypnosis(minutes) in LP (133.40±82.2) and recovery time (80.78±32.8) were significantly longer than SP, PP, LHU, SHU and PHU and LHD, SHD, PHD positions respectively.

Conclusions:

The various body positioning employed produced significant cardiorespiratory responses, all of which were generally tolerated by the rabbit. However, rabbits in SP will require intravenous vasopressors for blood pressure control and supplementary oxygen.

P07 / #418

Topic: *AS03 Animal Welfare*

INFLUENCE OF CLINICAL EXAMINATION TRAINING ON CORTISOL LEVELS IN DOGS

Francisco Javier Dieguez Casalta[1], Susana Muñiz De Miguel[2], Ángela González Martínez[2]
[1]Santiago de Compostela University, Anatomy, Animal Production And Clinical Veterinary Sciences, Lugo, Spain, [2]Veterinary Teaching Hospital Rof Codina. Santiago de Compostela University, Behavior Medicine, Lugo, Spain

Introduction:

Clinical examination is a day-one competence for veterinary students, and it is an essential skill for disease diagnosis.

Objectives:

The study aimed to assess how clinical examination training induces a stress response in dogs, based on cortisol levels

Methods:

Four dogs are used for clinical examination training in the Veterinary Faculty of Lugo (Spain). These dogs were used during 4 consecutive weeks (one different practice each week/5 days per week, so that the total number of students could be divided into 5 groups per practice). Salivary samples were collected from the 4 dogs, before (basal) and during the 4 week training period in a schedule that coincided with the moment before the start and at the end of each practice. Saliva samples were analyzedusing a commercial ELISA test.

Results:

Cortisol concentrations tend to increase throughout the training period. This increase is greater in the measurements made at the time before the start of each practice (Table 1).

Table 1.- Mean cortisol concentrations recorded in 4 dogs used for for clinical examination training in the Veterinary Faculty of Lugo (Spain)

Basal		1st practice		2nd practice		3rd practice		4th practice	
Pre-practice	Post-practice	Pre-practice	Post-practice	Pre-practice	Post-practice	Pre-practice	Post-practice	Pre-practice	Post-practice
Mean cortisol concentration									
0.19	0.23	0.16	0.17	0.23	0.20	0.32	0.25	0.74	0.25

Conclusions:

In conclusion, clinical examination practices leads to an activation of the HPA axis, as reflected in increased cortisol levels. In this way, during teaching, adequate protocols must be established to preserve the well-being of these animals.

P08 / #342

Topic: *AS03 Animal Welfare*

EFFECT OF DOG-OWNER INTERACTION ON POSTOPERATIVE PAIN PERCEPTION AND VARIABILITY IN BEHAVIORAL PATTERNS

Deborah Lazard[1], Edgar Palma[2], Aurora Diaz Lopez[3], Maria Beatriz Rosado Azcarate[4], Mariana Medrano Cordero[5], Marta Amat[6]
[1]Animals with a Mission of Integration (ACUMI), Director, Ciudad de México, Mexico, [2]Clinica Dr. Palma, Direction, Mexico City, Mexico, [3]Clinica Dr. Palma, Anesthesiology, Mexico City, Mexico, [4]PetCenter, Direction, Mexico City, Mexico, [5]PetCenter, Anesthesiology, Mexico City, Mexico, [6]Universidad Autonoma de Barcelona, Department Of Animal And Food Science (ethology And Animal Welfare), Faculty Of Veterinary Medicine, Bellaterra, Spain

Introduction:

Pain is one of the main activating stimuli of post-surgery stress in dogs, and variability in behavior is recognized as an initial attempt to control such stress. Although the relevance of positive dog-owner interactions for canine welfare in clinical settings has been strongly suggested, to our knowledge, the owner's role in postoperative pain perception and variability in behavioral patterns hasn't been reported to date.

Objectives:

To evaluate the effect of the dog-owner interaction on the postoperative pain perception and variability in behavioral patterns in bitches with elective surgery.

Methods:

Randomly selected bitches (n=10) underwent elective ovariohysterectomy. Five of them had 45 minutes of post-surgery dog-owner interaction; the other five did not. Perioperative pain perception and variability in active/inactive patterns were assessed at different times in all individuals. T-tests p-values were used to determine differences between case and control groups. Pearson's Correlation was used to determine correlation between parameters.

Results:

After 45 minutes post-surgery dog-owner interaction, bitches had a significant ($p < 0.01$) decrease in pain perception and a significant ($p < 0.01$) increase in active/inactive patterns variability, compared with bitches that were not visited. A negative and significant correlation ($p < 0.01$) was found between a decrease in pain perception and an increase in variability of the active/inactive behavioral patterns.

Conclusions:

Postoperative dog-owner interaction appears to decrease pain perception and increase behavioral variability in bitches that underwent elective surgery. A significant correlation was

also shown between decreased pain perception and increased behavioral variability. Recovery and welfare of post-surgery visited dogs require further study.

P09 / #312

Topic: *AS04 Behavior*

ANALYZE CATS' ELIMINATION BEHAVIOR AND DEFINE REFERENCE RANGE OF LITTER BOX USING PATTERN FOR EARLY DIAGNOSIS

Ji Woo Shin[1], Sun Woo Han[1], Ji Min Rim[1], Dong Hyun Shin[2], Hyeon Jeong Park[2], Hee-Jung Choi[2], Chung Gwang Choi[2], Joon Seok Chae[1]
[1]Seoul National University College of Veterinary Medicine, Laboratory Of Veterinary Internal Medicine, Bk21 Plus Program For Creative Veterinary Science Research, Research Institute For Veterinary Science, Seoul, Korea, Republic of, [2]WALKBRAIN. CO., LTD, Research Development, Seoul, Korea, Republic of

Introduction:

Various diseases that occur in cats cause periuria, dysuria, and polyuria symptoms. These urinary symptoms are generally not easy for owners to notice at home, so the golden time of treatment is often missed.

Objectives:

This study is aimed to estimate the reference range of the elimination behavior of cats to distinguish sick cats. Early diagnosis is possible by giving automatic warning of cats showing patterns of elimination behavior outside this range, which leads to improve the health of cat.

Methods:

Litter box usage behavior data (n=10,706) were collected from 41 healthy cats for 12 months through at Health Monitor Pro CL1-B (Kangjipsa®, WALKBRAIN). All data is analyzed using SPSS and the reference range is defined as Mean±1.96xSD. The difference between age, weight, gender, and breed was confirmed through Regression Analysis and t-test.

Results:

Cats showed an average of 3.7±1.3 times/daily elimination behaviors. The reference range of litter box using behavior is between 1.2~6.3 times/daily and 34.0~378.6 seconds/daily. Based on each elimination, that is 15.9~99.2 seconds/elimination. There was no difference between age, weight, and gender, but mixed-species (4.4 times/daily) used the litter box more frequently than purebred (3.3 times/daily, p=0.02).

Conclusions:

Cats with elimination actions outside this reference range are estimated to have urinary or endocrine disorders. Also, it can be a stressful situation due to changes in the environment. Further study is needed to observe except for defecation.

Acknowledgment: This work was supported by the Technology Development Program (S2964407) funded by the Ministry of SMEs and Startups (MSS, Korea).

P10 / #394

Topic: *AS04 Behavior*

STUDY ON SEROTONIN AND DOPAMINE CONCENTRATIONS IN ADHD-LIKE DOGS

Francisco Javier Dieguez Casalta[1], Susana Muñiz De Miguel[2], Ángela González Martínez[2]
[1]Santiago de Compostela University, Anatomy, Animal Production And Clinical Veterinary Sciences, Lugo, Spain, [2]Veterinary Teaching Hospital Rof Codina. Santiago de Compostela University, Behavior Medicine, Lugo, Spain

Introduction:

A decrease in the synthesis and an increase in the reuptake of dopamine, and decrease in serotonine levels were described in attention deficit hyperactivity disorder (ADHD) in human patients.

ADHD-like behaviors have also been described in domestic dogs. Previous studies showed genetic differences in dopamine receptor in ADHS-like dogs.

Objectives:

The aim was to assess serotonin and dopamine concentrations in control vs ADHD dogs

Methods:

Fifty-eight dogs were included. ADHD-like was established by clinical examination. Futher, the dog´s owners performed a series of validated questionnaires:DIAS (Wright et al.,2011), ARS (Vas et al.,2011) and C-BARQ (Hsu and Serpell,2003).

Statistical analyses were performed using R Software. Lasso regression was applied to assess the effect of serotonin and dopamine levels on suspected diagnosed ADHD-dogs and the different test.

Results:

Lasso regression indicated that dogs with lower serotonin and dopamine concentrations were more likely to be diagnosed suspected from ADHD-like.

Regarding total DIAS score, dogs with lower serotonin and dopamine levels were more likely to have scores above the median.

Data from ARS activity-impulsivity, indicated that dogs with lower serotonin were more prone to have scores above the median.

As regards C-BARQ, the probability of being above the median in the score for dog directed fear increased with decreased serotonin. Dogs with lower serotonin had higher C-BARQ scores for rivalry, non-social fear, touch sensitivity and attachment. Energy score was higher with lower dopamine levels.

Conclusions:

The study carried out opens a line of research for the use of dopamine and serotonin as blood markers in patients with ADHD-like

P11 / #395

Topic: *AS05 Clinical Pathology*

LIGHT AND ELECTRON MICROSCOPIC STUDIES ON HEPATIC LESIONS IN DOGS WITH CONGENITAL PORTOSYSTEMIC SHUNT

Bogdan Lewczuk[1], Liliana Rytel[2], Natalia Ziókowska[1], Jan Frymus[3], Piotr Trębacz[3], Hubert Ziolkowski[4], Marek Galanty[3]
[1]University of Warmia and Mazury, Faculty of Veterinary Medicine, Department Of Histology And Embryology, Olsztyn, Poland, [2]University of Warmia and Mazury, Faculty of Veterinary Medicine, Department Of Internal Diseases With Clinics, Olsztyn, Poland, [3]Warsaw University of Life Sciences, Faculty of Veterinary Medicine, Department Of Small Animal Diseases And Clinic, Warsaw, Poland, [4]University of Warmia and Mazury, Faculty of Veterinary Medicine, Department Of Pharmacology And Toxicology, Olsztyn, Poland

Introduction:

A portosystemic shunt (PSS) is an abnormal connection between the portal vein system and the systemic circulation.

Objectives:

To characterized morphological changes in liver caused by PSS.

Methods:

Samples were collected from livers of 15 dogs aged 0.5–2 years during the surgical treatment of PSS and prepared for light and electron microscopy.

Results:

The common feature of livers in dogs with PSS was a mosaic staining with hematoxylin and eosin. The parts of parenchyma located close to the portal tracts were stained more intensively than those surrounding the central veins, mainly because of fatty degeneration and necrosis of hepatocytes in the central parts of lobules. The portal tracts were characterized by hypoplasia of the portal veins. Sinusoids were strongly dilated, but the central veins had small diameters. Lipogranulomas occurred in 30% of livers. The most interesting findings were provided by electron microscopy of the peripheral zone of lobules. Hepatocytes located in this zone were characterized by the presence of a small, irregularly shaped nucleus, usually located close the perivascular space and moderate number of lipid droplets. Adjacent hepatocytes were separated by extremely dilated intercellular spaces, which were connected to the Disse space. They formed microvilli on the lateral surface. The dilated intercellular spaces were separated from the bile canaliculi by the junctional complexes.

Conclusions:

PSS causes serious liver damage, which should be considered during treatment of dogs. Hepatocytes adapt to undernutrition by increase in their contact surface with sinusoids. Support: Minister of Education and Science of Poland (010/RID/2018/19).

P12 / #378

Topic: *AS06 Critical care and emergency medicine*

HYPERBARIC OXYGEN THERAPY IN SIRS POSITIVE DOGS

Ângela Martins[1], Débora Gouveia[2], Mariana Chichorro[3], Ana Cardoso[2], Carla Carvalho[2], Cátia Silva[2], Tiago Coelho[2], Isabel Dias[4], António Ferreira[5]
[1]Universidade Lusófona de Humanidades e Tecnologias, Medicina Veterinária, Lisboa, Portugal, [2]Hospital Veterinário da Arrábida, Urgências E Cuidados Intensivos, Azeitão, Portugal, [3]3School of Agrarian and Veterinary Sciences, Department Of Veterinary Science, Vila Real, Portugal, [4]School of Agrarian and Veterinary Sciences, Department Of Veterinary Science, Vila Real, Portugal, [5]Faculty of Veterinary Medicine, University of Lisbon, Veterinary Sciences, Lisbon, Portugal

Introduction:

The systemic inflammatory response syndrome (SIRS) can be caused by different traumatic or non-traumatic diseases that promote activation of the inflammatory cascade with ischemia–reperfusion injuries, resulting in an oxidative injury. Tissues require ~ 60 mL of oxygen per liter of blood, which can be achieved by the hyperbaric oxygen therapy (HBOT) with 1.4 to 3 ATA, allowing the oxygen to be dissolved in the plasma and increase 100% hemoglobin saturation.

Objectives:

The aim of our study was to assess the safety and applicability of HBOT in SIRS-positive dogs.

Methods:

This prospective cohort study was conducted on 51 dogs positive for SIRS, that were allocated in: Traumatic Study Group (TSG) (n= 33) and Non-Traumatic Study Group (NTSG) (n=18). All underwent a first consultation and a HBOT protocol that included the compression phase (increase to 5 psi, followed by a 2-psi/minute), treatment phase (2.4-2.8 ATA; 30-45 min) and decompression phase, always according to signs of discomfort. Major and/or minor secondary effects were registered.

Results:

Data revealed a normal distribution regarding age and weight. 73% (37/51) showed improvement, 48% (16/33) of the TSG dogs underwent five or less sessions, while 50% (9/18) of the NTSG underwent more than 10 sessions. The number of days between diagnosis and beginning of HBOT showed significance ($p = 0.031$) in regard to clinical outcome. No dogs showed major side effects and 100% showed minor side effect of head shaking.

Conclusions:

HBOT was safe with minor side effects. Positive outcome was observed in 73%, suggesting HBOT as a possible adjuvant therapy. Results suggested the benefits of the HBOT early use.

P13 / #464

Topic: *AS06 Critical care and emergency medicine*

IS INTRAVENOUS INSULIN ASPART CONTINUOUS RATE INFUSION SAFE AND EFFECTIVE TREATMENT FOR SEVERE HYPERGLYCEMIA IN DOGS?

Jose Parra-Mancilla[1,2], Cesar Villalta[2]
[1]UNIVERSIDAD DEL ALBA, Escuela De Medicina Veterinaria, Santiago, Chile, [2]Clinica Veterinaria VET'S, Academia Vets, Ñuñoa, Chile

Introduction:

The diagnosis and treatment of hyperglycemia, hydro-electrolyte and acid-base disorders in small animals are challenging during emergency management and later in the intensive care unit.

Objectives:

To characterize the utility and safety of IV insulin aspart continuous rate infusion (CRI) in treating diabetes ketoacidosis (DKA) and hyperosmolar hyperglycemic syndrome (HHS) in dogs.

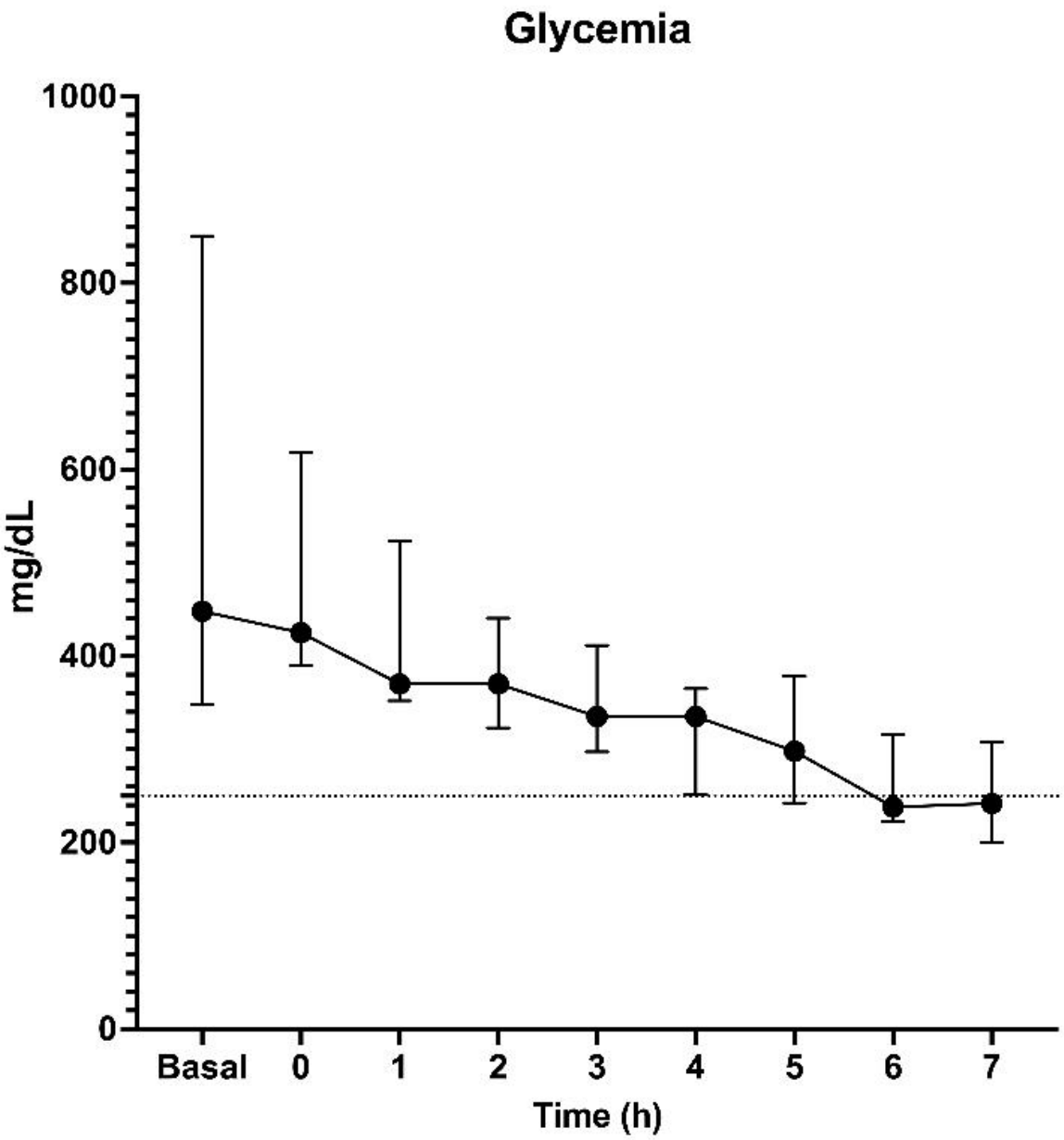
Methods:

A descriptive- retrospective single-arm study of six dogs with DKA and HSS between December 2021 and June 2022. DKA and HHS were treated with an IV continuous rate infusion (CRI) of aspart insulin. Aspart insulin was administered as an IV CRI at an initial dose of 0.1 U/kg/h. Data are presented as a median and interquartile range, and non-parametric tests were used to perform the statistical analysis using GraphPad Prism.

Results:

Intravenous Ringer's lactate solution was used as fluid resuscitation 10 [6 – 10] cc/Kg- during 15’ and before CRI. After the IV fluid resuscitation: the glycemia decreased from 448 [348 – 851] mg/dL]) to 425 [390 – 619] mg/dL (Mann Whitney; p= 0.841). Then, the CRI began at 0.1 U/kg/h. During the first seven hours, blood glucose decreased significantly from 425 [390 – 619] mg/dL to 242 [200–308] mg/dL (Mann Whitney; $p < 0.01$) at a rate of 40 [29–41] mg/dL per h. No severe hypoglycemia and hypokalemia were associated with IV insulin aspart CRI.

Figure: Glycemia follow-up during IV insulin aspart CRI.



Conclusions:

Intravenous CRI of insulin aspart is a safe and effective treatment for DKA and HHS in dogs. IV fluid resuscitation is recommended before insulin administration.

P14 / #345

Topic: *AS07 Dentistry*

PERIODONTAL DISEASE RISK MODEL FOR DOGS

Abigail O'Rourke[1], Zoe Lonsdale[1], Esther Bijsmans[2], Amanda Davies[1], Marie-Louise Bennett[3]
[1]Mars Petcare, Waltham Petcare Science Institute, Waltham on the Wolds, United Kingdom, [2]Mars Pet Nutrition, Discover, Batley, United Kingdom, [3]Mars Pet Nutrition, Mars Care & Treats Petcare Europe, Batley, United Kingdom

Introduction:

Periodontitis (PD) affects the majority of dogs, but is greatly underdiagnosed in primary practice, with reported prevalence of 9.3-18.2%. The odds of PD increase with age, smaller body size and non-ideal body condition.

Objectives:

This study aimed to develop a probability model of a dog having PD based on characteristics easily recorded by pet owners and veterinarians.

Methods:

Data on breed size, age, body condition and PD diagnosis (defined as any of Grade 1-4 PD, periodontal pocket, gingivitis or gingival recession) were extracted from electronic health records of dogs visiting Banfield Hospitals (USA) between 2010 and 2021. Logistic regression was used to determine the probability of PD based on breed size, age and body condition. The probabilities were classified into low, medium and high-risk categories. Performance of the model was measured using the area under the receiver operating curve (AUC).

Results:

1,000,000 visits were selected, with 826,638 dogs in the subset. Risk of PD increased with age and being underweight or overweight and decreased with increasing breed size. Thresholds to define risk categories were determined by choosing the risk scores that split the population into thirds, with risk scores defined by the individual risk relative to the population, and validated by veterinarians and veterinary dentists. Stability analysis was performed and confirmed repeatability. The AUC was 0.814.

Conclusions:

This model provides opportunity for communication about dental disease with pet owners by clearly defining a risk category and can help raise awareness of the risk of PD in dogs.

P15 / #21

Topic: *AS07 Dentistry*

EVALUATION OF DIFFERENT DENTAL HOMECARE PROTOCOLS TO IMPROVE ORAL HEALTH OF NON-SCALED DOGS

Jerzy Gawor[1], Celine Nicolas[2], Michal Jank[3], Colin Harvey[4]
[1]Klinika Weterynaryjna Arka, Dentistry, Kraków, Poland, [2]Virbac, Petfood Petcare Market Unit, Carros, France, [3]University go life Science, Pharmacology And Toxicology, rdzawa, Poland, [4]Penn University, Dentistry, Philadelphia, United States of America

Introduction:

Regular oral hygiene is necessary to keep dogs' teeth and gingiva healthy and to maintain their general health.

Objectives:

In this study, different dental homecare protocols were evaluated on client-owned dogs that did not receive professional cleaning at the beginning of the study.

Methods:

The dogs were randomly assigned to receive one of the seven homecare regimens tested: brushing every other day, Veggiedent® FR3SH™ dental chew (VF, Virbac) daily, Aquadent® FR3SH™ water additive (AQ, Virbac), brushing once a week + VF daily, brushing once a week + AQ daily, VF + AQ daily, or nothing. The dental deposits (5-point scale), periodontal disease (PD) status (4-point scale), breath odor (3-point scale) and oral health index (OHI; 7-point scale) were assessed and scored before and after receiving the assigned regimen for 8 weeks. The changes in these parameters were compared using Kruskall-Wallis and Dunn's tests.

Results:

The score given for dental deposits was significantly reduced with a regular mechanical action (brushing or VF daily) when compared to the control group [median (Q1;Q3) change in score: -1 (-1;0) vs 0 (0;0), respectively, $p<0.05$]. The PD status was only improved when combining AQ daily and brushing once a week [-1 (-1;0) vs 0 (0;0)]. Consistently, breath odor and OHI were also improved by these protocols.

Conclusions:

This study is the first to assess the effectiveness of different dental homecare protocols on non-scaled dogs, to assist veterinarians recommending effective products based on the dog's oral status and willingness of the owner to administer such products.

P16 / #463

Topic: *AS07 Dentistry*

A CASE REPORT OF LEISHMANIOSIS WITH PRIMARY ORAL MANIFESTATION IN A CAT

Lisa Mestrinho[1], Joana Travancinha[2], Cristina Sobral[2]
[1]CIISA - Centro de Investigação Interdisciplinar em Sanidade Animal, Faculdade de Medicina Veterinária, Universidade de Lisboa, Clinical Department, Lisbon, Portugal, [2]Vetalmada Clínica veterinária, Private Practice, almada, Portugal

Introduction:

Clinical manifestations of leishmania in cats are mainly dermatological or visceral.

Objectives:

This report aim to describe a case of leishmaniosis in a cat presented for consultation with primary oral signs.

Methods:

A 10-year-old neutered DSH cat, 5.2kg, was presented for consultation with history of halitosis, occasional signs of discomfort and difficulty eating for some weeks. Periodontal disease more severe on the right side and a right maxillary swelling, slightly painful, with spontaneous bleeding were identified. Bilateral mandibular lymphadenopathy was noted.

Initial work-up included pre-operative blood analysis and a comprehensive oral health assessment and treatment. The latest included full mouth dental radiography, biopsy, periodontal treatment, dental extractions (if indicated) and biopsy under general anesthesia. After histopathology , an EIA test and a proteinogram were performed.

Results:

Pre-operative blood analysis revealed leucopoenia , elevated globulins and hipoalbuminaemia.

Advanced periodontal disease and tooth resorption was diagnosed in some teeth. Dental extractions and periodontal treatment were done.

Histopathology of the right mandibular swelling revealed an ulcerous-hemorrhagic gingivitis associated in bacterial infection and abundant number of amastigote forms of leishmania. Inflammatory cells were mainly neutrophils and macrophages.

Two weeks after surgery, there was general improvement, although with persistent swelling on the right maxilla .

High anti-leishmania antibody levels and a monoclonal gammopathy confirmed leishmaniosis. The treatment plan was accepted by the owner, which included alopurinol (100mg/day).

Conclusions:

The oral lesion completely resolved after 1 month. Proteinogram showed improvement after 15 days, with decreasing globulin levels 8 months after treatment.

The case is still under monitorization and treatment.

P17 / #466

Topic: *AS07 Dentistry*

SUPERIOR LABIAL MUSCULOMUCOSAL AXIAL FLAP, ALLOGENOUS STEM CELLS AND AUTOGENOUS PLASMA PALATOPLASTY IN A DOG

Ana Carolina Mortari[1], Mario Falcão[1], Jeniffer Freire[1], Patricia Malard[2]
[1]University of Brasilia, Small Animal Surgery, Brasilia, Brazil, [2]BIO CELL Terapia Celular, Terapia Celular, Brasilia, Brazil

Introduction:

Cleft palate or palatoschisis is a defect that results in communication between the oral cavity and the nasal cavity. Several surgical techniques can be able for the treatment, but the high recurrence rate occurs due to limited palatine mucosa mobility.

Objectives:

To evaluated upper lip mucosal muscle axial flap technique and cellular therapy to treat a large cleft palate after two surgical dehiscences.

Methods:

A 4-months-old female Brazilian Fila dog, weighing 7.1 kg, was referred to the veterinary hospital presenting two surgical recurrence of a large congenital hard and soft cleft palates treated with different techniques. The surgical planning included the use of the right upper lip mucosal muscle axial flap technique associated with the application of allogeneic mesenchymal stem cells (10 million mesenchymal stem cells) and platelet rich plasma obtained from 30 ml of peripheral blood, in the surgical edges to aid in cell growth due to the intense formation of fibrous tissue.

Results:

The combination of treatments promoted healing of the palatal tissue, allowing oral feeding, despite the presence of a small fistula in the soft palate of approximately 0.8 centimeter in diameter.

Conclusions:

Suture tension on the palatoplasty closure may be associated with a greater risk of dehiscence in the correction of large cleft palates. Associated surgical and cell therapy procedures might be necessary to improve the healing process.

P18 / #435

Topic: *AS08 Dermatology*

USE OF CRICKET PRODUCTS IN DOGS WITH CUTANEOUS ADVERSE FOOD REACTION

Jaruwan Kampa[1], Kwankate Kanistanon[2], Maturawan Tunhikorn[3], Lallalit Sukontarattanasook[4]
[1]Faculty of Veterinary Medicine, Khon Kaen University, Pathobiology, Khon Kaen, Thailand, [2]Faculty of Veterinary Medicine, Khon Kaen University, Physiology, Khon Kaen, Thailand, [3]Faculty of Veterinary Science, Mahidol University, Clinical Science And Public Health, Nakhon Pathom, Thailand, [4]Lallalit Agri Foods Co.,Ltd, Lallalit Agri Foods Co.,ltd, Khon Kaen, Thailand

Introduction:

Diagnosis of the CAFR is based on clinical response to the elimination diet trial (EDT) phase, with hydrolyzed or novel proteins, then challenge with the feed each dog previously received. Cricket is a new source of a high-protein diet and has been commercialized in various forms of human products.

Objectives:

This study aims to study the utilization of our cricket products, a novel protein source, for diagnosing and lifelong nutrition for CAFR dogs.

Methods:

Four client-own CAFR dogs were health checked with blood testing before and after challenging with our cricket products, at 1-2 g protein/kg BW/day for 10-17 days. Changes in skin condition and pruritic score were evaluated with CADESI-4 and PVAS, respectively. All dogs were healthy and had PVAS less than 2, CADESI-4 score less than 25. A comparison of PVAS and CADESi-4 between the times before and after challenge was performed using the Wilcoxon Signed Ranks test in SPSS version 26.0. KKU Animal Ethics Committee approved this study with IACUC-KKU-99/63 on 22 October 2020.

Results:

The cricket products had no unflavored effect on the health, PVAS and CADESi-4 between the times (P>0.05). PVAS and CADESi-4 after the cricket challenge tended to be lower than before the challenge.

Table 1. PVAS and CADESi-4 prior to and after the cricket challenge

	Median (Q1-Q3)	
Parameter	Before cricket challenge	After

PVAS	2 (1.25-2)	1.5 (0
CADESi-4	15 (8.5-23.75)	13.5 (

Conclusions:

Our cricket products are probably a new tool for EDT and a new long-term protein source for CAFR dogs.

P19 / #417

Topic: *AS08 Dermatology*

EVALUATION OF SERUM TRACE ELEMENTS AND ANTIOXIDANT LEVELS IN PERSIAN CATS WITH DERMATOPHYTOSIS

Bahareh Ahmadi Torkamani, Mohammad Mohammad Heidarpour, Samaneh Eidi, Javad Khoshnegah
Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Department Of Clinical Sciences, Mashhad, Iran

Introduction:

Feline dermatophytosis is a superficial fungal skin disease.The most commonly isolated pathogen is Microsporum canis.

Objectives:

The present study aimed to investigate the amounts of serum trace elements and antioxidants (malondialdehyde, total antioxidant capacity and thiol group) in Persian cats with dermatophytosis.

Methods:

Three groups of cats were selected: cats with dermatophytosis (n = 13), cats with other dermatologic conditions (n = 6) and clinically and dermatologically healthy cats (n = 6). All animals were subjected to clinical and dermatological examination. In addition, direct microscopic examination and fungal culture were performed to confirm the diagnosis of the causes of the skin lesions.

Results:

On cultural examination, 100% of fungal isolates were found to be Microsporum canis.Table 1 shows the results of serum trace elements and oxidative stress parameters in cats with dermatophytosis, other skin diseases, and healthy cats (Mean ± SD).

parameters	Dermatophytosis	Other skin diseases	Control
Copper (ppm)	1.26 ± 0.38^{a}	$2.31 \pm 0.7^{b*}$	1.48 ± 0.7^{a}
Zinc (ppm)	0.92 ± 0.4	1.4 ± 0.6	1.39 ± 0.9
Iron (ppm)	15.34 ± 11.8	14.46 ± 9.5	18.93 ± 12.5
Selenium (ppm)	0.38 ± 0.1	0.44 ± 0.1	0.39 ± 0.1
FRAP (mmol/l)	120.31 ± 33.7^{a}	94.54 ± 37.8^{a}	$187.06 \pm 47^{b**}$
MDA (mmol/l)	0.8 ± 0.1	0.75 ± 0.1	0.88 ± 0.1
Total thiol groups (mmol/l)	1.44 ± 0.6	1.13 ± 0.5	± 0.7

Conclusions:

Results of the present study support the hypothesis that improved antioxidant status may favor the prevention and resolution of dermatological conditions in cats.

P20 / #446

Topic: *AS08 Dermatology*

CLINICAL INVESTIGATION OF THE ASSOCIATION BETWEEN ENVIRONMENTAL VARIABLES AND ALLERGEN SPECIFIC IGE SEROLOGY (ASIS) IN ATOPIC DOGS IN BANGKOK

Euapong Varatorn[1], Chaiyot Tanrattana[2]
[1]Odaijini pet hospital, Dermatology, Bangkok, Thailand, [2]Faculty of Veterinary Science, Department Of Veterinary Medicine, Bangkok, Thailand

Introduction:

CAD is one of the most prevalent allergic skin diseases in dogs, induced by an immunologically hypersensitive response to environmental allergens. Allergen specific IgE serology (ASIS) is a serology test that can be used to detect allergens that cause atopic dogs' allergies, hence providing information for environmental management.

Objectives:

To examine the association between ASIS scores and clinical manifestations and environmental variables in atopic dogs

Methods:

This study comprised 42 client-owned atopic dogs of various breeds from private animal hospitals in Bangkok. The diagnosis of atopic dermatitis was based on ruling all other pruritic skin diseases. We evaluated the ASIS outcomes of dogs raised in different environments (partially indoor, totally indoor, and entirely outdoor).

Results:

The findings of ASIS testing revealed that 67% of atopic dogs living totally indoor were positive for only indoor allergens, whereas 78% of atopic dogs living partially indoor were positive for both indoor and outdoor allergens. Surprisingly, completely outdoor atopic dogs demonstrated a low percentage of positive reactions to indoor allergens (13%). All-indoor dogs exhibited a low level of sensitivity to allergens from the outdoors (8%). Consequently, ASIS test findings have a favorable correlation with ambient allergen exposures and the dogs' lifestyles. Even yet, only indoor dogs may exhibit mildly positive reactions to outdoor allergies and vice versa.

Conclusions:

This study found a correlation between the habitat (indoor/outdoor) of atopic dogs and their ASIS test results. On the basis of ASIS test findings, veterinarians may advise allergy avoidance and environmental management to prevent allergen exposure.

P21 / #281

Topic: *AS09 Diagnostic imaging*

EFFECTS OF CANINE PELVIS ROTATION ON THE HIP CONGRUENCY INDEX

Pedro Franco-Gonçalo[1], Diogo Moreira Da Silva[2], Pedro Leite[3], Sofia Alves-Pimenta[4], Bruno Colaço[4], Manuel Ferreira[3], Lio Gonçalves[2], Vitor Filipe[2], Mário Ginja[1]
[1]University of Trás-os-Montes and Alto Douro, Veterinary Science, Vila Real, Portugal, [2]University of Trás-os-Montes and Alto Douro, Engineering, Vila Real, Portugal, [3]Neadvance, Imaging Diagnosis, Braga, Portugal, [4]University of Trás-os-Montes and Alto Douro, Animal Science, Vila Real, Portugal

Introduction:

The inappropriate positioning of the dog on the X-ray table for hip dysplasia (HD) screening is associated with changes in the femoral head coverage which affects HD scoring. The Hip Congruency Index (HCI) measures the percentage of acetabular coverage occupied by the femoral head and objectively estimates hip joint congruency.

.

Objectives:

The aim of this study was to describe the influence of pelvis rotation along the long body axis on the projected HCI in the ventrodorsal hip extended (VDHE) radiographic view.

Methods:

Fourteen cadavers of dogs were radiographed in seven different VDHE views: standard VDHE view and modified VDHE views with pelvic rotation of 2°, 4° and 6° to the right and left sides. The HCI was measured on coxofemoral joints for all views and was compared among the dependent (negative degrees) and the non-dependent (positive degrees) sides.

Results:

The mean ± standard deviation of HCI were 0.67±0.09, 0.69±0.09, 0.70±0.08, 0.71±0.10, 0.73±0.08, 0.74±0.07 and 0.75±0.08 on VDHE pelvic rotation of -6°, -4°, -2°, 0 (standard), 2°, 4° and 6°, respectively ($p<0.01$, Oneway-ANOVA test). A significant correlation ($r=0.99$, $p<0.001$) was identified between degrees of rotation and mean HCI values.

Conclusions:

The pelvic rotation along the long body axis affects the HCI improving on the non-dependent side and impairing on the dependent side. The pattern of changes is regular, so correction factors can be considered.

Acknowledgements

This work was financed by project Dys4Vet (POCI-01-0247-FEDER046914), co-financed the ERDF through COMPETE2020 - OPCI.

P22 / #321

Topic: *AS09 Diagnostic imaging*

EFFECTS OF FEMUR INTERNAL AND EXTERNAL ROTATION ON THE HIP CONGRUENCY INDEX

Pedro Franco-Gonçalo[1], Diogo Moreira Da Silva[2], Pedro Leite[3], Sofia Alves-Pimenta[4], Bruno Colaço[4], Manuel Ferreira[3], Lio Gonçalves[2], Vitor Filipe[2], Mário Ginja[1]
[1]University of Trás-os-Montes and Alto Douro, Veterinary Science, Vila Real, Portugal, [2]University of Trás-os-Montes and Alto Douro, Engineering, Vila Real, Portugal, [3]Neadvance, Imaging Diagnosis, Braga, Portugal, [4]University of Trás-os-Montes and Alto Douro, Animal Science, Vila Real, Portugal

Introduction:

Different levels of internal (pronation) or external (supination) femoral rotation interfere with projected radiographic hip joint anatomy and hip dysplasia scoring. The Hip Congruency Index (HCI) evaluates the acetabular coverage area occupied by the femoral head.

Objectives:

The aim of this study was to evaluate the influence of internal and external femoral rotation on the projected HCI in the ventrodorsal hip extended (VDHE) radiographic view.

Methods:

Twelve cadavers of dogs were radiographed in three different VDHE views: standard VDHE view and modified VDHE views with different levels of femoral pronation and supination. The HCI was measured on coxofemoral joints for all views and was compared among them.

Results:

The mean ± standard deviation of the degree of pronation was 14.5±6.5° and supination was 17.5±6.7°. The mean HCI values were 0.74±0.04, 0.75±0.04 and 0.72±0.05 on standard, pronated and supinated views, respectively ($p<0.05$, Oneway-ANOVA test). No statistical correlation was recorded between HCI difference values and degrees of pronation ($rp=0.40$, $p>0.05$), nor between HCI difference values and degrees of supination ($rp=-0.06$, $p>0.05$).

Conclusions:

Internal and external femoral rotation slightly affect the HCI, improving it on pronated views and impairing it on supinated views. However, correction factors cannot be considered due to the lack of correlation, that can be explained by other aspects such as the dog musculature or different levels of femoral adduction or abduction in pronated and supinated VDHE views.

Acknowledgements

This work was financed by project Dys4Vet (POCI-01-0247-FEDER046914), co-financed the ERDF through COMPETE2020 - OPCI.

P23 / #421

Topic: *AS09 Diagnostic imaging*

RELIABILITY OF THE DYS4VET SOFTWARE IN AUTOMATIC HIP CONGRUENCY INDEX MEASUREMENT – PRELIMINARY RESULTS

Pedro Leite[1], Pedro Franco-Gonçalo[2], Diogo Moreira Da Silva[3], Bruno Colaço[4], Sofia Alves-Pimenta[4], Lio Gonçalves[3], Vitor Filipe[3], Alexandrine Ribeiro[1], Nuno Boto[1], Manuel Ferreira[1], Mário Ginja[2]
[1]Neadvance, Imaging Diagnosis, Braga, Portugal, [2]University of Trás-os-Montes and Alto Douro, Veterinary Science, Vila Real, Portugal, [3]University of Trás-os-Montes and Alto Douro, Engineering, Vila Real, Portugal, [4]University of Trás-os-Montes and Alto Douro, Animal Science, Vila Real, Portugal

Introduction:

Hip Dysplasia (HD) is the most frequent hereditary orthopedic disease in dogs. The recommended medical approach is based on hip radiographic scoring to select the best animals for breeding. The hip congruence is an important international parameter for HD scoring. However, its evaluation requires a high examiner experience, since it is considered somewhat subjective.The Hip Congruency Index (HCI) measures the area of acetabular coverage occupied by the femoral head.

Objectives:

The main purpose of the study was to determine the HCI reliability and agreement between an experienced examiner and the automatic Dys4Vet HCI measurement software.

Methods:

The computer vision model was trained with HCI annotations on 203 radiographs (406 hips). Afterwards, on sample of 50 dogs (100 hips), the experienced examiner performed the HCI measurements, and the Dys4Vet software produced the respective automatic HCI measurements.

Results:

The HCI measured by the examiner ranged from 0.31 – 0.84, mean 0.64±0.09 and by the automatic software ranged from 0.45-0.83, mean 0.64±0.08. The paired t-test showed no evidence of systematic bias ($P>0.05$) and the intraclass correlation coefficient showed good between-technique reliability (ICC=0.80, 95% CI [0.72,0.86]) ($P<0.05$).

Conclusions:

We think that some larger differences are associated with the reduced number of severe dysplastic hips in the training sample. However, we didn`t consider this an important concern since these cases are classified based on obvious radiographic signs of osteoarthritis.These

preliminary results are promising and can improve if the sample used to train the computer model increases.

Acknowledgements

This work was financed by project Dys4Vet (POCI-01-0247-FEDER046914), co-financed the ERDF through COMPETE2020 - OPCI.

P24 / #248

Topic: *AS09 Diagnostic imaging*

MICROCHIP-ASSOCIATED MR SPINAL IMAGING PROBLEMS IN CATS AND SMALL BREED DOGS

Nicole Lautner[1], Alexander Tichy[2], Sibylle Kneissl[1]
[1]University of Veterinary Medicine, Department For Small Animals And Horses, Vienna, Austria, [2]University of Veterinary Medicine, Department Of Biomedical Sciences, Vienna, Austria

Introduction:

Microchip (MC) cause magnetic resonance (MR) signal increase, void, and distortion. The associated susceptibility artefact (SA) may compromise MR imaging. SA size depends on sequence type, phase encoding direction, MC size and position in relation to the main magnetic field strength.

Objectives:

To identify number of animals with a MC position resulting in vertebral canal associated MR imaging problems (VCIP) and to describe MC positions with no problems

Methods:

CT scouts and MR images of cats and small breed dogs (< 5 kg) with a documented MC were retrieved. The following criteria were analysed: MC location (C1-2, C3-4, C5-7, thoracic spine), VCIP (none; minor, one vertebra affected; major, two vertebrae affected; MC removal), and MC distance to vertebral body (in cm, respectively unit free: MC-distance-to-vertebral-width ratio [MVR]).

Results:

72 dogs and 38 cats were included into the study. The most common MC location in dogs and cats was C3-4. The average distance of the MC from the vertebral was 1.7 cm in dogs, and 1.6 cm in cats. In 55 cases, a VCIP occurred; one was minor, 54 were major. In two dogs, the MC had to be removed to gain a final MR diagnosis (1.8 %). With increasing MC distance, it was significantly less likely to compromise MR reports ($P = 0.035$), nor affect more vertebrae ($P = 0.461$). Similar, but not significant effects were seen with increasing MVR.

Conclusions:

MC associated SA occurred frequently (78.5%); a MVR of at least two reduces spinal MR imaging problems by half.

P25 / #320

Topic: *AS09 Diagnostic imaging*

TRANSFERABILITY OF A PROPOSED METHOD FOR MANUALLY DEFINING AREA AND SIGNAL OF CANINE THORACOLUMBAR PARAVERTEBRAL MUSCLES ON MR IMAGES

Laura Freymüller[1], Karin Lorinson[2], Silvio Kau[3], Marlies Dolezal[4], Sibylle Kneissl[1,2]
[1]University of Veterinary Medicine, Department For Small Animals And Horses, Vienna, Austria, [2]Chirurgisches Zentrum für Kleintiere, -, Vösendorf, Austria, [3]University of Veterinary Medicine, Department For Pathobiology, Vienna, Austria, [4]University of Veterinary Medicine, Department For Biomedical Sciences, Vienna, Austria

Introduction:

There is a popular trend to measure the area and signal of paravertebral muscles to access the clinical relevance of muscle changes in both, patients with other neurologic imaging findings and in patients with pain alone.

Objectives:

To test a proposed method for measuring area and signal of the thoracolumbal paravertebral muscles (TLPM), i.e,. multifidus, longissimus and iliocostalis muscle, on MR cross sections and comparing results to dogs with and without compressive myelopathy (CM)

Methods:

MR images of dogs (> 5 kg) were retrieved and classified for animals with or without CM. In each patient TLPM to intervertebral disc area and TLPM to fat signal intensity (SI) were assessed. Hypothesis testing was performed via univariate linear mixed models for log10 transformed area and SI ratios. The model included CM and body side as 2-level fixed categorical effects and body weight as covariate. Statistical significance was set at $P<0.05$.

Results:

Thirty-seven dogs were included. Fifteen were classified for CM at the thoracolumbar junction. Body weight of dogs ranged from 6.2–48 kg (median 12.30 kg). The mean muscle to disc area ratio was 691 mm2 in the group without CM and 570 mm2 in the group with CM. The mean muscle to fat SI was 45,4 in the animals without CM and 66,7 in the group with CM. There was no significant difference between the sides of each dog, nor the groups. Muscle to disc area ratio increased significantly by 0.019 mm2 with every additional kilogram body weight ($P<0.0001$).

Conclusions:

The proposed method is not transferable.

P26 / #453

Topic: *AS09 Diagnostic imaging*

COMPUTER-AIDED DIAGNOSIS FOR CARDIAC SIZE IN YORKSHIRE TERRIERS

Sibylle Kneissl[1], Peter M. Roth[2], Carina Strohmayer[1]
[1]University of Veterinary Medicine, Vienna, Clinical Unit Of Diagnostic Imaging, Vienna, Austria, [2]University of Veterinary Medicine, Vienna, Institute For Computational Medicine, Vienna, Austria

Introduction:

Vertebral heart score (VHS) and vertebral left atrial size (VLAS) attempt to quantify heart size by comparing cardiac silhouette diameters to vertebral length. Machine learning could support and accelerate objective measurements of heart size.

Objectives:

To compare the agreement of computer-aided (CA) VHS and VLAS measures to radiologists.

Methods:

50 left lateral thoracic radiographs of Yorkshire Terriers were randomly retrieved and anonymized. Two experienced radiologists and a CA algorithm measured VHS and VLAS measurements independently. The latter was trained to directly predict the cardiac and vertebral measurements. In a preprocessing step, the images were resized to a size of 300x200 pixels and contrast enhanced. Thus, using a rather shallow Convolutional Neural Network (6 convolutional layers, 4 fully connected layers) was sufficient to robustly regress the desired parameters. To ensure a fair evaluation and to avoid random effects, all experiments were run 10 times, and the averaged results are reported.

Results:

33 patients were included in the study. The reported averaged relative error between the two human experts and the CA are 2.3%, 2.2%, and 1.8% for cardiac width, cardiac height, and left atrial size, respectively.

Conclusions:

The VHS results are in agreement with (Boissady, 2021), however, are obtained at a much lower computational effort, also requiring less annotation effort. CA VLAS measures have not been performed before.

Boissady et al., Comparison of a Deep Learning Algorithm vs. Humans for Vertebral Heart Scale Measurements in Cats and Dogs Shows a High Degree of Agreement Among Readers, Frontiers in Veterinary Science. 2021.

P27 / #309

Topic: *AS10 Endocrinology*

SERUM RESISTIN CONCENTRATION AND ITS ASSOCIATION WITH BODY CONDITION SCORE IN DOGS

Adrian Carzoli, Ana Meikle, Paula Pessina
Facultad de Veterinaria, Universidad de la República del Uruguay, Laboratorio De Análisis Clínicos, Montevideo, Uruguay

Introduction:

Adipose tissue has been acknowledged as an important endocrine organ, secreting a variety of bioactive molecules called “adipokines”, which have many effects across the organism being one of them over carbohydrate and lipid metabolism. Resistin is an adipokine associated with obesity and insulin resistance in human and murine models, but there is scarce information about this adipokine in veterinary medicine, especially regarding to dogs.

Objectives:

To determine and compare serum resistin concentration in normal weight, overweight and obese dogs.

Methods:

A total of 84 healthy dogs (besides overweight and obesity, by clinical examination, hematology and biochemistry panel) were classified according to their body condition score (BCS) (9 point scale, WSAVA) in normal weight (BCS 4 and 5, n=33), overweight (BCS 6 and 7, n=28) and obese (BCS 8 and 9, n=23). Serum samples were obtained for specific canine resistin determination by ELISA (RAB1017, Millipore, Saint Louis, EE.UU). Data was analyzed using mixed model (PROC MIXED Statistical Analysis System, SAS) stablishing the BCS category as fixed effect, and dog as a random effect. Means were compared by Tukey test. $p<0.05$ was classified as significant difference, while $p<0.1$ was considered as a tendency.

Results:

Serum resistin concentration tended to be affected by BCS category ($p=0.09$), being higher in obese dogs (979.8 ± 78.5 pg/mL) than in normal weight dogs (728.6 ± 72.5 pg/mL) ($p=0.03$). The age, gender and neuter status did not affect serum resistin concentration.

Conclusions:

Serum resistin concentration is higher in obese dogs compared to normal weight dogs.

P28 / #316

Topic: *AS10 Endocrinology*

SERUM PARATHYROID HORMONE CONCENTRATION AS A PREDICTOR OF POST-OPERATIVE HYPOCALCEMIA IN DOGS WITH PRIMARY HYPERPARATHYROIDISM TREATED WITH PARATHYROIDECTOMY.

Victoria Travail, Darren Kelly
Southern Counties Veterinary Specialists, Internal Medicine, Ringwood, United Kingdom

Introduction:

Hypocalcemia following parathyroidectomy occurs in 35% - 70% of dogs and can result in increased patient morbidity, and potentially mortality.

Objectives:

To evaluate preoperative variables including serum parathyroid hormone, ionised calcium, alkaline phosphatase, and phosphorus concentrations as predictors of hypocalcemia after parathyroidectomy.

Methods:

The databases of seven referral hospitals were searched to identify dogs diagnosed with primary hyperparathyroidism treated with parathyroidectomy between January 2010 and December 2021. Data collected included signalment, physical examination findings, concurrent illness, perioperative medications, clinicopathologic test results (including ionised calcium (iCa), ALP, phosphorus and PTH concentrations) prior to surgery, and iCa concentrations after surgery.

Results:

104 dogs with primary hyperparathyroidism treated by parathyroidectomy were included. No relationship was identified between ALP, ionised calcium, or phosphorus concentrations before parathyroidectomy and the development of hypocalcaemia after surgery. Median PTH concentrations were significantly higher in dogs developing hypocalcaemia after parathyridectomy (232.5 pg/ml; IQR 115.5 - 442.5 pg/ml) compared to dogs that did not develop hypocalcemia (84.5 pg/ml; IQR 59.5 - 145.0 pg/ml) ($P < .0001$). ROC AUC confirmed PTH concentration is a good to excellent predictor of hypocalcemia after parathyroidecotmy (0.82; 95% CI 0.73-0.91). Using a cut-off of >75 pg/ml, the diagnostic sensitivity and specific of PTH for predicting hypocalcemia after parathyroidectomy were 100% and 44%, respectively.

Conclusions:

In dogs with primary hyperparathyroidism undergoing parathyroidectomy, a PTH concentration of <75 pg/ml makes the development of post-operative hypocalcemia extremely unlikely. Dogs with PTH concentrations >75 pg/ml should be monitored closely for post-operative hypocalcemia.

P29 / #328

Topic: *AS11 Exotics*

VERTEBRAL HEART SIZE AND CARDIO-THORACIC RELATION USING RADIOGRAPHY IN FEMALE ANDEAN BREED GUINEA PIGS (CAVIA PORCELLUS) ACCORDING TO NUMBER OF BIRTHS

Ricardo Grandez[1], Alessandra Montes[1], Lilia Chauca[2]
[1]UNIVERSIDAD PERUANA CAYETANO HEREDIA, Lima, Lima, Peru, [2]INSTITUTO NACIONAL DE INVESTIGACIÓN AGRARIA, Lima, Lima, Peru

Introduction:

Thoracic radiographs are a key component in cardiovascular evaluation. Vertebral Heart Size (VHS) can be measured using a vertebral scaling system while cardio-thoracic ratio (CTR) compares the diameter of the heart with the diameter of the chest. Both methods are commonly used in other species.

Objectives:

The purpose of this study was to evaluate through radiographs possible variations in the cardiac silhouette of the heart of female Andean guinea pigs in their different reproductive stages

Methods:

24 female Andean guinea pigs were divided into 4 groups: 6 without births, 6 with 1 birth, 6 with 2 births and 6 with 3 births. The individuals were sedated with intramuscular Diazepam and Ketamine. Right lateral and ventrodorsal thoracic radiographic views were taken; VHS and CTR were then calculated. A completely random statistical model was used and the data was evaluated using Analysis of Variance and Duncan's statistical test.

Results:

Average values for VHS were 9.05 ± 0.59 throughout the reproductive stages and 8.95 ± 0.5 in the group without births, there was no statistically significant difference between VHS and the reproductive stage ($P = 0.577$). Average values for CTR were 0.61 ± 0.08 in the reproductive stages and 0.54 ± 0.04 in the group without births, with a significant statistical difference between CTR and the reproductive stage ($P = 0.043$).

Conclusions:

The results obtained in the study allow us to establish reference values for heart size in Andean guinea pigs in their reproductive stage using VHS and CTR.

P30 / #329

Topic: *AS11 Exotics*

ECOGRAPHIC DETERMINATION OF GESTATIONAL AGE USING EMBRYONIC VESICLE AND FETAL BIPARIETAL DIAMETERS IN BREED PERU GUINEA PIGS (CAVIA PORCELLUS)

Ricardo Grandez[1], Nicole Carrión[1], Lilia Chauca[2]
[1]UNIVERSIDAD RICARDO PALMA, Ciencias Biologicas, Lima, Peru, [2]INSTITUTO NACIONAL DE INVESTIGACIÓN AGRARIA, Lima, Lima, Peru

Introduction:

Echography is considered a safe and reliable method that does not represent any risk for the patient and the operator. In guinea pigs, there are few reports using ultrasound to diagnose early pregnancy and monitor fetal development.

Objectives:

The purpose of this study was to determine the relationship between gestational age (GA), in days, and embryonic vesicle diameter (EVD) and biparietal diameter (BPD), in centimeters, in Peru breed guinea pigs

Methods:

A non-experimental longitudinal panel design was used to assess fetal measurements over time. Likewise, an intentional non-probabilistic sampling was applied, obtaining a sample of 16 synchronized females of the Peru breed, which were mated with selected males and examined with ultrasound from day 14 post mating.

Results:

It was possible to visualize and measure EVD from day 18 post mating up to 31 days. The BPD and cranial ossification of the fetuses, could be observed from day 31 until the end of pregnancy. The statistical evaluation showed a low dispersion and homogeneity of the sample. The inferential analysis determined that there is a significant and positive relationship between GA and EVD ($r = 0.97$) and BPD ($r = 0.99$)

Conclusions:

The calculation of early gestational age can be obtained using the EVD ($GA = EVD \times 12.88 + 4.29$) and advanced gestational age can be calculated using the biparietal diameter ($GA = BPD \times 26.03 + 6.06$).

P32 / #429

Topic: *AS11 Exotics*

IS THE SUPPLEMENTATION WITH ULTRAVIOLET B RADIATION, VITAMIN D OR CALCIUM BENEFICIAL FOR LEOPARD GECKOS?

Francisco Franco[1], Paula Oliveira[2], Rui Patrício[1], Ana Faustino[3]
[1]Faculty of Veterinary Medicine, Lusophone University of Humanities and Technologies, Lisbon, Portugal, Veterinary, Lisboa, Portugal, [2]CITAB, Inov4Agro, Veterinary Sciences, Vila Real, Portugal, [3]Comprehensive Health Research Center, N/a, Évora, Portugal

Introduction:

Vitamin D regulates many fundamental physiologic functions in vertebrates, mainly calcium homesotasis. Because of the big diversity of reptile species and the various environmental adaptations, many studies have been conducted to understand the individual necessities and adaptations of each specie regarding vitamin D, its importance and acquisition in the wild.

Objectives:

This study aimed to evaluate the influence of exposure to ultraviolet (UV) radiation and vitamin D and calcium oral supplementation on plasma levels of ionized calcium in Eublepharis macularius (Leopard gecko).

Methods:

Blood samples were collected from the jugular vein in two check-up appointments five weeks apart and the concentration of ionized calcium (iCa^{++}) was analyzed in 15 Leopard geckos from different tutors and submitted to different environmental conditions: supplemented animals (n = 5), animals exposed to UV radiation (n = 5) and animals not supplemented or exposed to radiation (control) (n = 5).

Results:

Ionized calcium plasma levels did not vary significantly ($p>0.05$) among groups, or within each group during the study.

Conclusions:

The Leopard gecko has the ability to maintain iCa^{++} concentration, without any supplementation, for at least 42 days, without developing signs of metabolic bone disease, and the supplemented animals seem not to have benefited from supplementation during this period of time.

P33 / #318

Topic: *AS11 Exotics*

RABBIT HEMORRHAGIC DISEASE (RHD) IN SIX INDOOR PET RABBITS DIAGNOSED IN THE SAME WEEK IN PORTUGAL: A CASE SERIES

Filipe Fontes Pinto[1,2], Alexandre Domingues[1], Ricardo Marcos[2], Mário Nóbrega[3], Joel Ferraz[4], Felisbina Queiroga[5,6,7]
[1]HIPRA, Rabbits Unity, Malveira, Portugal, [2]School of Medicine and Biomedical Sciences (ICBAS), Cytology Diagnostic Services, Porto, Portugal, [3]Exoticvets, Veterinarians, Lisboa, Portugal, [4]Centro Veterinário de Exóticos do Porto, Veterinarians, Porto, Portugal, [5]University of Trás-Os-Montes and Alto Douro, Department Of Veterinary Sciences, Vila Real, Portugal, [6]University of Trás-Os-Montes E Alto Douro, Animal And Veterinary Research Centre, Vila Real, Portugal, [7]University of Porto, Center For The Study Of Animal Sciences, Ceca-iceta, Porto, Portugal

Introduction:

Rabbit hemorrhagic disease (RHD) is one of the main infectious diseases in exotic animal medicine. RHD is a highly contagious disease, leading to an acute fatal hepatitis in rabbits, caused by the RHD virus (RHDV). Due to the high rates of recombination and mutation of RHDV, all positive cases should be carefully evaluated. Herein, we present this case series of six indoor companion pet rabbits diagnosed in the same week in Portugal's two largest cities, Porto and Lisbon. These animals had different vaccination protocols, but all presented nonspecific acute clinical signs.

Objectives:

The main objectives are to highlight the high infectivity of RHDV, even in pet rabbits living in city apartments, by showing the nonspecific clinical presentations that the new strains can trigger, and to discuss the most appropriated vaccination protocols that should be implemented.

Methods:

Six pet rabbits (Oryctolagus cuniculus) were identified. After an anamnesis and physical examination, other complementary tests were performed, such as radiographic and ultrasound studies, and hematological and biochemical analysis. In all cases, a RT-PCR liver sampling for RHDV was performed.

Results:

All rabbits showed nonspecific clinical signs, with acute fatal courses, and positive results by RT-PCR were associated to high amounts of genetic material of RHDV serotype 2 (GI.2), an emergent serotype.

Conclusions:

Veterinarians should include RHDV as a differential diagnosis in all pet rabbits with non-specific signs, even if vaccinated for the disease as presented in this case series report. Especially after the emergence of novel GI.2, which can lead to different clinical presentations.

P34 / #425

Topic: *AS11 Exotics*

SURGICAL REMOVAL OF HAEMANGIOMA FROM OESOPHAGEAL CAVITY OF RED EAR SLIDER TURTLE

Dinesh Vinherkar[1], Tejashree Missal[2]
[1]Dr. Vinherkars Pet Health Clinic, Private Clinic, Mumbai Maharashtra, India, [2]Mumbai Veterinary College, Animal Biotechnology, Mumbai, India

Introduction:

An adult male 5 yr old Red Ear Slider turtle was presented to us with history of profuse bleeding occationally from mouth after eating food .physical examination of oral cavity and Dv ,lateral views of xray confirmed presence of round mass in the lumen of oesophagus.. Bleeding from oral cavity is a common symptom observed in RES turtles associated with haemangiomas and hemangiosarcomas although successful surgical intervention,investigation and diagnosis can make a remarkable change in animals prognosis..

Objectives:

1..To increase chances of survival of the reptile by sugical intervention,Investigation ,diagnosis and treatment.

Methods:

Under Chemical General Anaesthesia a horizontal cut on neck was taken below and parallel to Jugular vein on the dimension of growth ,the incision was taken deep enough to open oesophagus., A big red smooth round mashroom like growth was observed with a tiny neck attached to the inner wall of esophagus. the entire growth was removed intact and wound stitched carefully layer by layer and growth sent for histopathological investigation.

Results:

The 3,6 cm round shaped growth was dark red, cross sections showed even surface of reddish brown color. Microscopically, formation of small and large, irregular blood filled vascular channels lined by endothelial cells and externally lined by stratified columnar epithelium were seen. suggestive of Haemangioma

Conclusions:

After surgical removal of the growth and its histopathological examination ,its confirmed that

the anorexia ,difficulty in swallowing food and bleeding from oral cavity in this res turtle

was due to the huge haemangioma attached to its oesophageal wall internally.

P35 / #294

Topic: *AS12 Feline medicine*

CHARACTERIZATION OF FELINES POSITIVE TO THE DOT-ELISA TEST FOR FELINE LEUKEMIA VIRUS PRESENTED AT A VETERINARY CENTER IN LIMA – PERU

Ricardo Grandez, Camila Sanchez-Carrión, Micaela De La Puente
UNIVERSIDAD PERUANA CAYETANO HEREDIA, Lima, Lima, Peru

Introduction:

The Feline Leukemia Virus (FeLV) is widely distributed in domestic cats. Its immunosuppressive nature triggers alterations in different organs that lead to the patient's death. There is limited information on the current situation of FeLV in Peru, therefore this study will be useful to establish diagnostic protocols and recommend preventive or prophylactic measures to reduce this disease's prevalence.

Objectives:

The objective was to characterize the population of FeLV-positive cats that were presented to a veterinary center in Lima and to determine if the variables sex, age group, if they are indoor/outdoor, reproductive status, origin and cohabitation with other cats influenced the presentation of this disease.

Methods:

This study was observational, descriptive, and retrospective. In 2017, 449 domestic cats were tested using the DOT-ELISA FeLV-FIV test, from which 52 resulted positive to FeLV. The data was analyzed with R-program obtaining descriptive and analytical statistics. Chi square and Fisher tests were used to evaluate the significance of each variable and its influence on the test's positivity. A logistic model was selected using the maximum likelihood method

Results:

FeLV prevalence was 11.58%; and it predominated in male individuals (12.55%), of young age (21.43%), intact (24.44%), from shelters (32.93%), that live with other felines (18.01%) and that were indoor-outdoor cats (15.38%)

Conclusions:

We can conclude that young cats were 14 times more likely to be positive compared to other ages; and, that felines during the juvenile stage that come from shelters had a higher probability of being FeLV-positive.

P36 / #305

Topic: *AS12 Feline medicine*

CYTAUXZOON FELIS IN BRAZILIAN DOMESTIC CAT

Felipe Romano, Maria Anete Lallo, Maria Carolina Pappalardo, Raquel Romano, Lylian Cristina Sodré
Paulista University, Veterinary Medicine, São Paulo, Brazil

Introduction:

Cytauxzoon felis is a blood parasite of wild felids that has recently been described in domestic cats. It is currently considered a cause for anemia, fever, and jaundice, in addition to other serious manifestations, such as coagulopathy, neurological changes and shock. The lethality is 85%. The vector is not yet fully identified, but the tick is believed. Definitive diagnosis depends on molecular biology of blood (PCR). Lymph node cytology, biopsies of affected organs, or the identification of piroplasm on a blood smear can also diagnose the disease, although this is less likely. Therapies with doxycycline, imidocarb and enrofloxacin have been tried but with low efficacy. The most indicated combination treatment is based on atovaquone and azithromycin.

Objectives:

Report of the occurrence of Cytauxzoon felis in a 5-year-old mixed breed domestic cat treated in São Paulo (Brazil).

Methods:

The patient showed hyporexia, gastroenteritis, fever, and apathy. In the serum exams were verified: anemia, thrombocytopenia, and hypoalbuminemia. Ultrasonography showed hepatosplenomegaly. This patient did not show jaundice. The diagnosis was made through blood PCR. Other infectious diseases such as retroviruses, mycoplasmosis and toxoplasmosis were excluded. The treatment with azithromycin combined with doxycycline was initiated, because atovaquone is not available in Brazil.

Results:

Despite the treatment, the evolution was unfavorable, and the animal died after having seizures, possibly secondary to systemic inflammation, vasculitis or coagulopathy.

Conclusions:

Cats with anemia and nonspecific clinical manifestations should be investigated for this emerging disease.

P37 / #389

Topic: *AS12 Feline medicine*

CONGENITAL SENSORINEURAL DEAFNESS IN WHITE DEVON REX CATS - DIFFICULTIES IN UNDERSTANDING AND DESCRIBING THE MECHANISMS OF INHERITANCE

Liliana Rytel[1], Slawomir Gonkowski[2], Andrzej Pomianowski[1], Annemarie Kortas[1]
[1]University of Warmia and Mazury, Department Of Internal Diseases With Clinics, Olsztyn, Poland, [2]University of Warmia and Mazury, Department Of Clinical Physiology, Olsztyn, Poland

Introduction:

Acquired and congenital deafness are the two main causes of deafness in cats. Congenital deafness in white cats refers to congenital sensorineural deafness (CSD).

Objectives:

To determine the impact of deaf cats diagnosed only on the basis of behavioral changes on the incidence of CSD in population, and the association between the color of the irises and CSD occurrence.

Methods:

Questionnaire study including Devon Rex cats' breeders (n=150) about the animal's hearing status, the age of the animal on the day of the examination; the sex of the animal; the color of both irises, hearing status description (the side of unilateral deafness).

Results:

Data obtained from 150 questionnaires indicates that cats that weren't subjected to BAER examination but were diagnosed with CSD on the basis of behavioral changes significantly increased the incidence of CSD in conducted study from 28,6% to 41,3%. In the population of cats no correlation was found between CSD, the color of the irises (p=1.28) and sex of the cats (p=.33).

Conclusions:

Cats diagnosed using behavioral changes that are not included in the most statistics for CSD occurrence in feline population can significantly increase the incidence of CSD if we take them into consideration. Not taking into account such large number of cats limits the ability to fully understand and describe the mechanisms of CSD inheritance in the entire feline population.

Project financially supported by the Minister of Education and Science under the program entitled "Regional Initiative of Excellence" for the years 2019-2022, Project No. 010/RID/2018/19, amount of funding 12.000.000 PLN"

P39 / #304

Topic: *AS13 Gastroenterology and hepatology*

PRIMARY NEUROENDOCRINE CARCINOMA IN THE GALL BLADDER IN DOGS

Felipe Romano, Roberta Saiga, Maria Anete Lallo, Raquel Romano, José Guilherme Xavier
Paulista University, Veterinary Medicine, São Paulo, Brazil

Introduction:

Gallbladder neoplasms are not common and underdiagnosed. Carcinoma and cholangiocarcinoma are the most described. These are challenging cases as the patient often shows jaundice, abdominal pain or vomiting in an advanced stage. Diagnosis is through abdominal ultrasound and computed tomography. Treatment is surgery (cholecystectomy). Therapy with doxorubicin, glucocorticoids and carboplatin is not considered effective.

Objectives:

Report of a case of gallbladder carcinoma in an English Bulldog female dog with cholestasis.

Methods:

An 8-year-old female dog was treated in the city of São Paulo (Brazil) due to recent vomiting, anorexia, jaundice, and fever. The ultrasound examination showed hepatomegaly, bladder distention due to thick bile, bile duct dilatation and hepatic lymph node edema. Serum tests showed leukocytosis, increased liver enzymes and bilirubin, and hypercholesterolemia. Bacterial cholecystitis associated with secondary hepatitis was considered. Clinical treatment (low dose prednisolone, bezafibrate, ursodeoxycholic acid, amoxicillin, analgesics and antiemetics) were indicated.

Results:

Because of the worsening of the condition, a tomography was indicated, which showed a neoformation in a vesicle with free fluid and various metastases. The owners did not want to try palliative surgery for damage control. The animal died after two days, and the necropsy revealed hemorrhage (rupture of the gallbladder) and an histopathology compatible with neuroendocrine carcinoma.

Conclusions:

The ultrasound exam will not always diagnose gallbladder neoplasia. This differential should be pointed out specially in elderly animals with jaundice. Radiotherapy and toceranib therapies have been studied for better results.

P40 / #282

Topic: *AS15 Infectious and emerging diseases*

TRYPANOSOMA EVANSI IN DOGS FROM ARGENTINA: AN EMERGING VECTOR BORNE DISEASE

Pablo Borras[1], Marcelo Ruiz[2], Valeria Bazzalo[3], Federico Fernandez[4], Berta Cabaña Fader[5], Fabian Aguirre[2], Fernando Dubois[6]
[1]ANLIS "Dr.Carlos G.Malbrán", Cendie, Capital Federal, Argentina, [2]Facultad de Cs Veterinarias - UNL, Laboratorio De Analisis Clinicos, Hospital De Salud Animal, Esperanza, Argentina, [3]Laboratorio La Mission, Analisis Clinicos, Mercedes, Argentina, [4]Laboratorio INNOLAB, Analisis Clinicos, Buenos Aires, Argentina, [5]Laboratorio Veterinario CF, Analisis Clinicos, Corrientes, Argentina, [6]CONICET Argentina, Centro De Investigación Y Transferencia, Formosa, Argentina

Introduction:

Trypanosoma evansi is a bloodborne parasite spread globally that affects a wide range of hosts. Dogs get infected by blood-feeding flies or horseflies bites and by eating wild animals.

Objectives:

The purpose of this study was to report a number of Trypanosoma evansi infections in dogs from different Argentinian regions (Santa Fe, Formosa, Corrientes and Buenos Aires provinces).

Methods:

The different clinical signs detected in patients with suspected trypanosomiasis by Trypanosoma evansi infection were registered. The diagnosis confirmation was performed by the 18s gene and the ESAG 6/7 gene amplification for the detection of the Trypanosoma and the T. evansi species, respectively, or by the amplification of a preserved area of the variant surface glycoprotein (VSG), specific for T. evansi

Results:

Fifteen clinical cases were diagnosed and all of them were confirmed by molecular methods. The clinical signs observed were anemia (85%), anorexia (85%), hyperthermia (75%) head and limb edema (40%), uveitis (25%) and lymph node enlargement (20%).Trypomastigotes were present in the blood and/or bone marrow of 93% of the patients.

Conclusions:

Trypanosoma evansi is an emerging and growing disease in dogs in Argentina. The clinical signs are characterized by fever associated or not to uveitis and or body edema. The use of molecular methods is key to identify Trypanosoma evansi in regions where different Trypanosoma species occur to ensure an adequate diagnosis and treatment.

P41 / #319

Topic: *AS15 Infectious and emerging diseases*

CRYPTOCOCCOSIS IN CATS FROM BUENOS AIRES, ARGENTINA: THE USE OF MALDI-TOF MS AS A DIAGNOSIS TOOL.

Pablo Borras[1,2], Amelia Gisbert[3], Ignacio Espiñeira[3], Francisco Zapata[4], Marta Zubaldia[2], Ivana Maldonado[5]
[1]Veterinaria Guayaquil, Infectious Diseases Unit, Buenos Aires, Argentina, [2]Universidad Maimonides, Centro De Ciencias Veterinarias, Buenos Aires, Argentina, [3]Facultad de Ciencias Veterinarias - Universidad de Buenos Aires, Catedra De Clinica Medica De Pequeños Animales, Buenos Aires, Argentina, [4]Dimerolab, Analisis Clinicos, Buenos Aires, Argentina, [5]Hospital Aleman, Laboratorio De Microbiologia, Buenos Aires, Argentina

Introduction:

The Cryptococcus neoformans and C. gattii species complex is the causative agent of feline cryptococcosis. The matrix assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) technique helps to identify the involved agents quickly and safely.

Objectives:

The purpose of this study was to identify the species involved in feline cryptococcosis through MALDI-TOF MS in cats from Buenos Aires, Argentina.

Methods:

Seven cats diagnosed with cryptococcosis through cytology (Giemsa or Diff Quick) were recruited from different vet clinics located in Buenos Aires, Argentina (2020-2021). Samples were collected from each patient to test in Sabouraud agar and Mycosel agar at 28 °C for 30 days in the Microbiology Laboratory Mycology Unit (Hospital Alemán). The identification was performed through MALDI-TOF MS with direct sample collection with 70% formic acid. The results were read and analyzed using Bruker Microflex LT, v.3.1.

Results:

The C. neoformans complex was identified in six cats with nasal cryptococcosis. The C. gatti complex was identified in the seventh cat, who was suffering from chronic pneumonia with skin lesions.

Conclusions:

This is the first report on the use of MALDI-TOF MS for the identification of Cryptococcus species in cats with cryptococcosis in Argentina. The C. neoformans complex was the most frequently involved agent. This technique proved to be useful in the accurate identification of numerous yeasts, thus it is considered an essential tool to understand feline cryptococcosis epidemiology in each region.

P42 / #402

Topic: *AS15 Infectious and emerging diseases*

MYCOBACTERIUM BOVIS IN CATS FROM BUENOS AIRES, ARGENTINA: A SERIES OF CASES.

Pablo Borras[1,2], Jimena Marfil[3], Guadalupe Gallo[4], Indiana Piras[3], Natalia Ponce[5], Marcela Martinez Vivot[3], Soledad Barandiaran[3]
[1]Veterinaria Guayaquil, Infectious Diseases Unit, Buenos Aires, Argentina, [2]Universidad Maimonides, Centro De Ciencias Veterinarias, Buenos Aires, Argentina, [3]Facultad de Cs Veterinarias, Universidad de Buenos Aires, Catedra De Enfermedades Infecciosas, Buenos Aires, Argentina, [4]Laboratorio GEG, Analisis Clinicos, Carlos Casares, Argentina, [5]Centro Veterinario Buena Vista, Departamento De Clinica, Moreno, Argentina

Introduction:

Domestic cats are susceptible to Mycobacterium bovis infections and different clinical presentations may appear, depending on the agents´ entry way and the patient´s immunity.

Objectives:

The aim of this work was to describe a series of clinical cases caused by Mycobacterium bovis in cats between 2020 and 2021, in Buenos Aires, Argentina.

Methods:

Five adult cats were suspected of having a mycobacterial infection in different veterinary clinics. Clinical signs were registered and different samples including lymph node fine needle aspirations and BAL were sent to the Mycobacterial Laboratory in the School of Veterinary Science of the University of Buenos Aires. Bacteriological culture and molecular confirmation, followed by genotyping, was performed on the samples. Treatment of confirmed cases was attempted using the following protocol: doxycycline (10mg/kg PO q24h) + clarithromycin (10 mg/kg PO q12h) + rifampicin (10 mg/kgPO q24 h).

Results:

Clinical signs present were either cutaneous (40%) or respiratory (60%). Isolates were obtained in all five cases, and molecular characterization and genotyping revealed that Mycobacterium bovis was the causative agent in all cases. Treatment duration varied in each case, being as short as 15 days and as long as 8 months. Clinical recovery was achieved in two of the cats, while three died or were euthanized while on treatment.

Conclusions:

Mycobacterium bovis is an emergent infectious disease in urban and peri-urban cats. The different clinical manifestations are challenging for veterinarians, and consideration of mycobacterioses among the differential diagnosis in the veterinary practice is difficult.

P43 / #284

Topic: *AS15 Infectious and emerging diseases*

ANTIVIRAL EFFECTS OF IVERMECTIN AND FELINE AND BOVINE INTERFERON AGAINST FELINE INFECTIOUS PERITONITIS VIRUS

Yusuke Chiba[1,2], Donze Leng[2], Yusuke Sakai[2], Masahiro Yamasaki[1,2], Shinji Yamada[2], Kenji Murakami[2]
[1]Iwate University, Veterinary Teaching Hospital, Faculty Of Agriculture, Morioka, Japan, [2]Iwate University, Graduate School Of Veterinary Sciences, Morioka, Japan

Introduction:

Feline infectious peritonitis (FIP) is a fatal disease caused by feline infectious peritonitis virus (FIPV) infection. The treatment for FIP has not been established so far. In this study, the antiviral activity of three agents against FIPV was evaluated. Recombinant feline IFN-omega(ω) and bovine IFN-tau(τ) and ivermectin were targeted. Ivermectin, commonly used for anti-parasitic agent, has recently been reported to show antiviral effects against SARS-CoV-2.

Objectives:

To explore its potential as a therapeutic agent for FIP, we investigated the antiviral effects of ivermectin, IFN-ω and IFN-τ against FIPV in vitro.

Methods:

(Experiment 1) Felis catus whole fetus (fcwf-4) cell was treated with ivermectin, IFN-ω, or IFN-τ pre- and post- virus inoculation, and then FIPV (79-1146 strain) adjusted to 100 plaque forming units (pfu)/well was inoculated, and plaque reduction was evaluated. (Experiment 2) To examine the synergistic effect of ivermectin and IFN-ω or IFN-τ, their mixture was inoculated into cells and the antiviral effect was assessed by plaque reduction assay.

Results:

Ivermectin showed antiviral effect at both pre- and post-virus inoculation. IFN-ω and IFN-τ exhibited antiviral effects when fcwf-4 cells were treated before virus inoculation. Mixture inoculation of ivermectin with IFN-ω or IFN-τ increased the antiviral effect against FIPV compared to single inoculation of the agent.

Conclusions:

Ivermectin inhibited the growth of FIPV, and its antiviral effect was enhanced when combined with typeI IFNs. In the future, we would like to investigate the mechanism by which ivermectin suppress FIPV proliferation.

P44 / #416

Topic: *AS15 Infectious and emerging diseases*

DIVERSITY OF ENDOPARASITES IN DOG SHELTERS IN ROMANIA

Georgiana Deak, Ioana Mitrea, Andrei Mihalca
University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Department Of Parasitology And Parasitic Diseases, Cluj-Napoca, Romania

Introduction:

There are many stray dogs in Romania, the majority being relocated and housed in shelters. The intense international exportation of dogs to other European countries increases the transmission and distribution of parasites.

Objectives:

Our objectives were to determine the epidemiological situation of parasitism in shelter dogs from Romania, to evaluate by coproscopy the diversity, and prevalence of endoparasites, and to analyze the associated risk factors.

Methods:

The study was conducted between May 2021 and March 2022, on 233 fecal samples from 15 shelters in 13 localities in Romania. To assess the coprological prevalence, the samples were processed by two flotation methods, sedimentation, and larvoscopy.

Results:

A total of 53.8% dogs tested positive for at least one endoparasite. The following were identified: Cystoisospora spp. 13.5%, Giardia duodenalis 2.4%, Ancylostoma caninum 9.6%, Uncinaria stenocephala 22.6%, Trichuris vulpis 8.7%, Toxocara canis 20.7%, Toxascaris leonina 6.3%, Capillaria boehmi 0.5%, Capillaria aerophila 2.9%, Capillaria plica 3.4%, and Dipylidium caninum 1%. No Metastrongyloidea larvae were detected. The juveniles and the dogs housed on hay, gravel, and earthen were more likely to be infected with endoparasites.

Conclusions:

These results highlight the importance of parasitological surveys in dogs before exportation and the need for specific antiparasitic treatments. Many of the detected parasites have also a zoonotic character.

P45 / #424

Topic: *AS15 Infectious and emerging diseases*

MOLECULAR DETECTION OF THEILERIA ANNULATA INFECTION: AN EMERGING DISEASE OF PET DOGS IN PAKISTAN

Muhammad Ijaz[1], Yasir Nawab[1], Arslan Ahmed[1], Rana Ayyub[2], Nauman Ghumman[1], Muhammad Javed[1], Iqra Muzammil[1], Ahmed Raza[1], Adnan Adil[3]
[1]University of Veterinary and Animal Sciences Lahore, Department Of Veterinary Medicine, Lahore, Pakistan, [2]University of Veterinary And Animal Sciences Lahore, Department Of Economics And Business Management, Lahore, Pakistan, [3]University of Veterinary And Animal Sciences Lahore, Department Of Veterinary Surgery And Pet Sciences, Lahore, Pakistan

Introduction:

Tick-borne maladies of canines are increasing in the sub-tropical and tropical areas around the globe. Theileriosis is an emerging issue of canines especially dogs but the data regarding the disease prevalence in Asian countries is scarce.

Objectives:

Current study was designed to assess the molecular prevalence, hematological alterations and risk factors associated with Theileria infection in pet dogs of Lahore, Pakistan

Methods:

A total of (n=102) dog's blood samples were initially screened by microscopy and confirmed by PCR targeting the cytochrome B (cytb) gene, Positive samples were sequenced and analyzed by phylogenetic tools. The statistical significance of disease associated risk factors and hematological alterations were also assessed statistically.

Results:

The results revealed that 10.78% and 6.86% of pet dogs were found positive by PCR and microscopy respectively. The phylogenetic analysis showed the sequence resemblance up to 98 - 99% with cytb gene fragment of Theileria annulata isolates from Iran, India, Turkey, Sudan, China and Tunisia. The assessment of assumed risk factors revealed a significant ($p<0.05$) association of house hygiene, tick infestation, and tick control status with the disease dynamics. The infected animals also showed significant decrease ($p<0.05$) in values of red blood cells (RBCs), hemoglobin level, PCV, and platelet count.

Conclusions:

This is the first report regarding the molecular evidence of Theileria annulata infection in dogs of Pakistan. This study will prove effective in controlling the increasing tick-borne maladies of dog population in Pakistan

P46 / #404

Topic: *AS15 Infectious and emerging diseases*

MOLECULAR DETECTION OF CANINE DISTEMPER VIRUS IN CLINICALLY DIAGNOSED DOGS FROM METROPOLITAN LIMA - PERU

Noriko Oviedo, Cesar Gutierrez, Alberto Manchego, Diego Diaz, Miguel Rojas
Universidad Nacional Mayor de San Marcos, Facultad De Medicina Veterinaria, lima, Peru

Introduction:

Canine distemper virus (CDV) is an infectious agent with worldwide distribution. Produce a disease characterized by the presence of non-specific clinical signs, so it's necessary the use of complementary tests for diagnosis. Molecular tests are the best alternative to confirm clinical cases of canine distemper (CD), due to their high sensitivity and specificity. In Peru, molecular confirmation of CDV isn't commonly performed.

Objectives:

Determine the real frequency of CDV in dogs with clinically diagnosed CD from Metropolitan Lima-Perú by RT-PCR.

Methods:

36 urine samples were obtained from Metropolitan Lima-Perú dogs with a clinical diagnosis of CD, during 2018-2019. For the detection of CDV, RT-PCR was used to amplify a conserved region of the N gene. Positive samples were subjected to amplification and sequencing of the UTR region between the M-F genes, then carried out a phylogenetic analysis of the possible genotypes of the CDV that circulate in Metropolitan Lima-Perú.

Results:

Of the 36 samples, 41.7% (15/36) were positive for CDV. Of the positive samples, only 11 were sequenced in the UTR region between the M-F genes, revealing that 36.3% (4/11) belong to genotype America 1 and 63.7% (7/11) aren't related phylogenetically with any of the 19 reported genotypes of CDV.

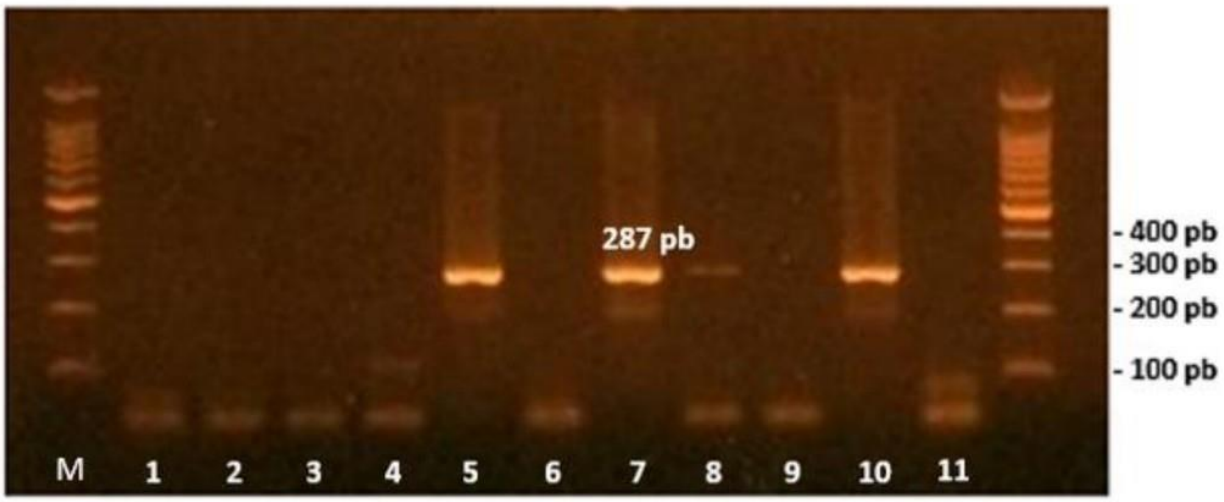


Figure 1. Agarose gel electrophoresis with ethidium bromide of RT-PCR products of 9 clinical samples. Lane M, molecular weight marker (100 bp ladder). Lane 1-9, nine clinical samples. Lane 10, positive control (vaccine strain). Lane 11, negative control (ultrapure sterile water).

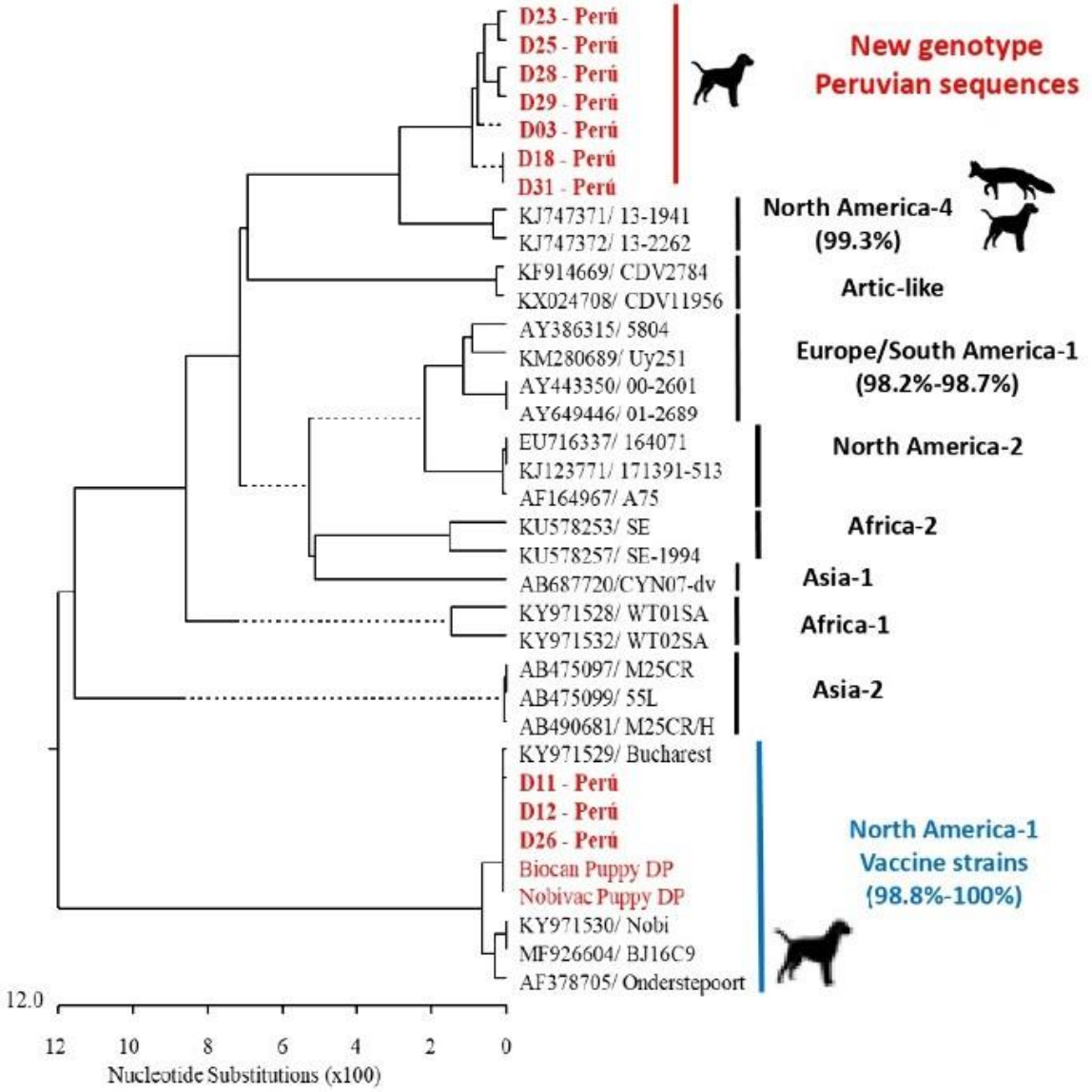


Figure 2. Phylogenetic tree based on the UTR region between the M-F sequences

Conclusions:

The diagnosis of CD based only on the observation of compatible clinical signs can lead to an erroneous diagnosis and inadequate treatment. This study suggests the presence of a new genotype of CDV circulating in Lima.

P47 / #405

Topic: *AS15 Infectious and emerging diseases*

GENOTYPING OF THE H GENE OF THE CANINE DISTEMPER VIRUS OF METROPOLITAN LIMA-PERU DETERMINES DIFFERENCES FROM KNOWN GENOTYPES

Noriko Oviedo, Cesar Gutierrez, Alberto Manchego, Diego Diaz, Miguel Rojas
Universidad Nacional Mayor de San Marcos, Facultad De Medicina Veterinaria, lima, Peru

Introduction:

Canine distemper virus (CDV) is an important pathogen affecting canine species. Outbreaks of canine distemper are reported in vaccinated dogs throughout the world in recent years. These infections are related to genotypes phylogenetically distant from the vaccine strains of the America 1 genotype. In Peru, there are no studies on the frequency and genotypes of CDV that circulate in the country.

Objectives:

The amplification and sequencing of the CDV hemagglutinin (H) gene to identify the genotypes that circulate in dogs from Metropolitan Lima-Perú.

Methods:

15 urine samples from CDV-positive dogs from Metropolitan Lima-Perú were processed to perform RT-PCR to amplify and sequence the complete H gene (1824 bp). The sequences obtained were subjected to a phylogenetic analysis using the MEGAX software to identify the genotype of each sample.

Results:

Of the 15 samples, 40% (6/15) were characterized (1824 bp). The phylogenetic analysis of 6 amino acid sequences of the H gene revealed that they all formed a cluster showing a percentage of similarity in the range of 100% to 97.23%; the highlight of this cluster is that it isn't phylogenetically related to any of the 19 CDV genotypes reported, being genotype America 4, the most genetically related with 95.8% similarity.

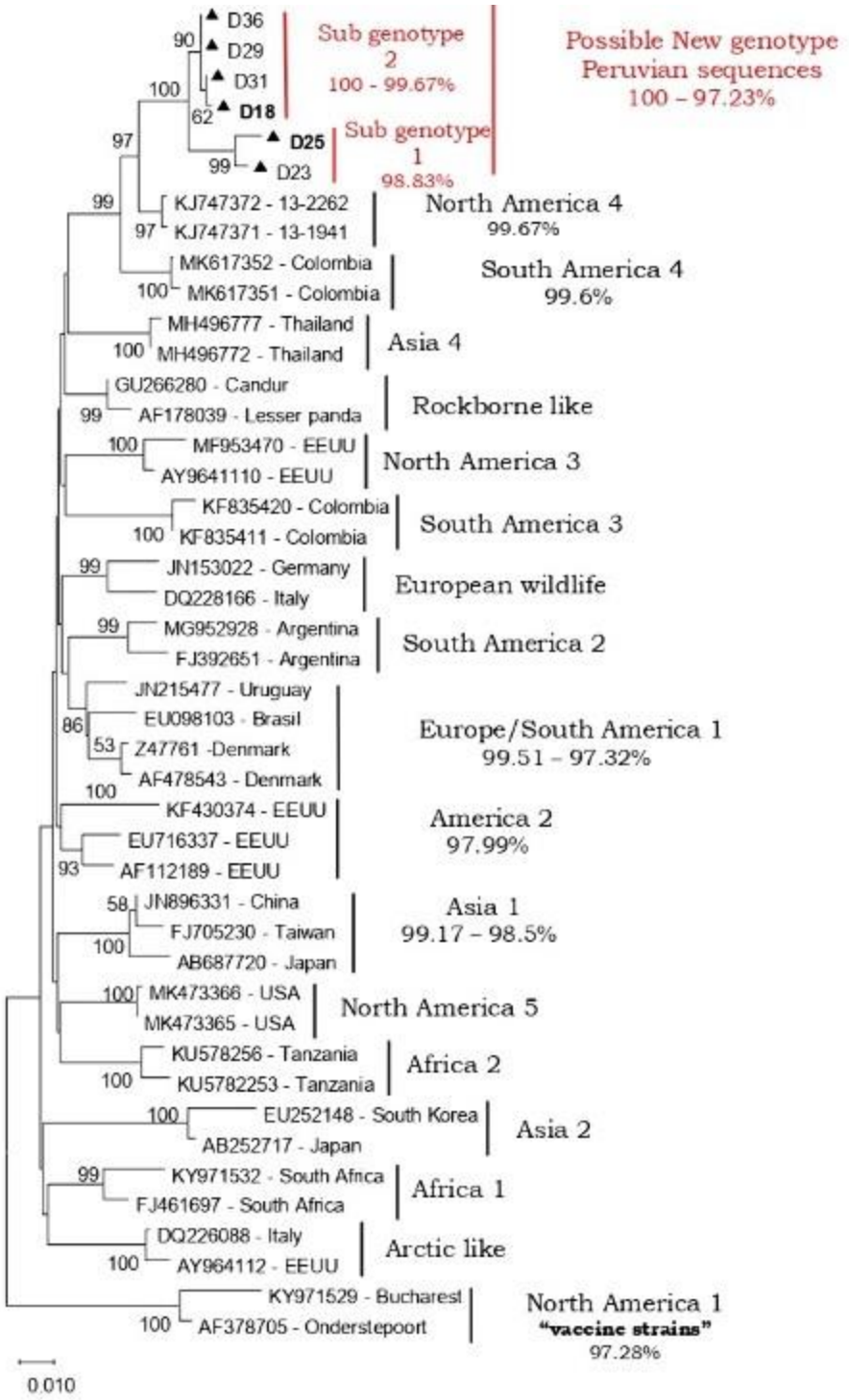


Figure 1.Phylogenetic tree based on the complete H gene sequences.

Conclusions:

In our study, the Peruvian sequences present a lower cut-off value when compared to the 19 known genotypes, suggesting that we are facing the presence of a new genotype.

P48 / #399

Topic: *AS15 Infectious and emerging diseases*

CLINICAL MANAGEMENT AND DIAGNOSIS OF A CASE OF TRYPANOSOMA EVANSI, IN A CANINE FROM PARAGUAY.

Maria Rodriguez[1], Antonio Sanchez[2], Julio Alvarenga[3], Antonio Rodriguez[4]
[1]CEDIVEP, Microbiology, San Lorenzo, Paraguay, [2]CEDIVEP, Hematology, San Lorenzo, Paraguay, [3]Veterinaria Pointer, Veterinary, Fernando de la Mora, Paraguay, [4]CEDIVEP, Parasitology, San Lorenzo, Paraguay

Introduction:

Trypanosoma evansi cause the disease called "Surra", which affects a variety of mammals and have a worldwide distribution. Paraguay have reported the presence of the parasite in horses and canines, with a constant grown of cases observed in dogs.

Objectives:

The aim of this study was to report a clinical management, diagnosis and treatment of a dog with trypanosomiasis by T. evansi in Paraguay.

Methods:

A 2 years old Australian shepherd male dog, from Concepcion city, was treated at a veterinary clinic of Fernando de la Mora, Paraguay. The dog presented weakness, weight loss, normal appetite, mucous membranes pallor, intermittent febrile episodes, lymphadenomegaly, marked edema of the hind limbs, forelimbs, and conjunctival. Arrhythmic heart rate. CBC showed normocytic hypochromic no regenerative anemia, thrombocytopenia, leukopenia and trypomastigotes of Trypanosoma spp were present in the smear. Urea and creatinine were increased, decreased albumin/globulin ratio as well as an echocardiogram with a diagnosis of mitral regurgitation. Abdominal ultrasound showed splenomegaly and hepatomegaly. Molecular detection of ITS1 gene of T. evansi was performed by PCR (Polymerase Chain Reaction), resulting positive.

Results:

The dog was treated with two doses of quinapyramine 3,2 mg/kg, SC with an interval of 30 days between doses. The support treatment was done with IM dexamethasone 0,1mg/kg SID, and furosemide PO 0,5mg/kg/ BID. The cardiopathy was treated with pimobendane and benazepril 10 mg.

Conclusions:

After 3 days of treatment the dog had a clinical improvement and fever disappeared, trypomastigotes was not detected by smears after 10 days and abnormal laboratory parameters improved after a month.

P49 / #393

Topic: *AS15 Infectious and emerging diseases*

DETECTION OF SARS-COV-2 IN HOUSEHOLD DOGS AND CATS LIVING WITH COVID-19 INFECTED OWNERS DURING DELTA AND OMICRON VARIANT WAVES IN IRAN

Baharak Akhtardanesh[1], Maziar Jajarmi[1], Mohammadreza Shojaei[2], Sina Salajegheh Tazerji[3], Maziar Khalilizadeh Mahani[1], Pouneh Hajipour[1], Rasha Gharieb[4]
[1]Veterinary Faculty, Shahid Bahonar University, Clinical Science Department, Kerman, Iran, [2]Golestan University of Medical science, Department Of Virology, Gorgan, Iran, [3]Faculty of Veterinary Medicine, Science and Research Branch, Islamic Azad University, Department Of Clinical Science, Tehran, Iran, [4]Faculty of Veterinary Medicine, Zagazig University, Department Of Zoonoses, Zagazig, Egypt

Introduction:

The animal origin of the novel coronavirus SARS-CoV-2 led to a discussion about the possible transmission of the disease to humans through animals.

Objectives:

The emergence of SARS-CoV-2 infection in dogs and cats in different countries worldwide, raises concerns that pets are at a higher risk for spreading or transmitting of SARS-CoV-2 to humans and other pets and increased the researches about the zoonotic aspects and natural routs of infection in companion animals.

Methods:

Detection of SARS-CoV-2 in household dogs and cats living with COVID-19 infected owners was done by Real-time reverse transcription polymerase chain reaction (RT-qPCR) from April 2021 to 2022 in Southeast of Iran, Kerman.

Results:

Deep oropharyngeal and rectal swabs were collected from 30 household pets (20 cats and 10 dogs) living with COVID-19 infected owners. Two household cats out of 20 examined (10%) were positive for SARS-CoV-2 and none of the examined dogs were positive for SARS-CoV-2.

Conclusions:

This study reported the presence of SARS-CoV-2 in household cats in close contact with COVID-19 infected owners during the circulation of new SARS-CoV-2 variants (Delta and Omicron) in Iran and suggested that the transmission may have occurred from owners to their cats. Therefore, infected owners should eagerly limit close contact with their pets during COVID-19 illness.

P50 / #448

Topic: *AS16 Internal medicine (other)*

GC-MS METABOLOMICS INVESTIGATION OF PLASMA SAMPLES FROM DOGS WITH IDIOPATHIC DILATED CARDIOMYOPATHY

Ivana Rubić[1], Alan Kovačević[2], Tomislav Mašek[3], Josipa Kuleš[4], Renata Barić Rafaj[4], Vladimir Mrljak[1]
[1]University of Zagreb, Faculty of Veterinary Medicine, Clinic For Internal Diseases, Zagreb, Croatia, [2]University of Bern, Department Fur Klinische Veterinarmedizin, Bern, Switzerland, [3]University of Zagreb, Faculty of Veterinary Medicine, Department Of Animal Nutrition And Dietetics., Zagreb, Croatia, [4]University of Zagreb, Faculty of Veterinary Medicine, Department Of Chemistry And Biochemistry, Zagreb, Croatia

Introduction:

The second most common cause of heart failure in dogs is idiopathic dilated cardiomyopathy (iDCM), which results in heart failure or sudden cardiac death due to arrhythmia. iDCM is a primary myocardial disease characterized by systolic dysfunction and eccentric hypertrophy primarily of the left or both ventricles at the same time. The prognosis of the disease is generally unfavorable.

Objectives:

The goal was to investigate novel metabolites and possible changes in the plasma metabolome of dogs with iDCM and healthy dogs using gas chromatography-mass spectrometry (GC-MS).

Methods:

Plasma of 20 dogs with iDCM were analysed in the retrospective study. Metabolite extraction were performed using the GC-MS metabolomics sample preparation protocol. In short, the plasma samples were extracted with extraction solvent, incubated, centrifuged and evaporated to dryness using a speedvac concentrator (Thermo Fisher Scientific). Instrumental analysis was carried out on a Shimadzu single quadrupole GCMS-QP2010 gas chromatograph-mass spectrometer (Shimadzu). Metabolites were identified using a commercially available GC-MS Metabolite Mass Spectral Database (Shimadzu).

Results:

GC-MS metabolomics analysis identified 25 metabolites in plasma samples from 20 dogs. The data processing determined that 10 of them were amino acids, 8 were organic acids, 3 were carbohydrates, 3 were fatty acids, and sugar alcohol. Statistical analysis showed that lactic acid, citric acid and alanine were more abundant in dogs with iDCM compare to the healthy dogs.

Conclusions:

Investigation of plasma samples from dogs with iDCM distinguishes significantly from healthy dogs. The GC-MS metabolomics revealed potential novel metabolites in the canine plasma metabolome.

P51 / #383

Topic: *AS16 Internal medicine (other)*

INTRA-ABDOMINAL GOSSYPIBOMA (TEXTILOMA) IN TWO DOGS AND A CAT.

Alexis Berrocal
Laboratorio Patología, Private Laboratory, Heredia, Costa Rica

Introduction:

Gossypiboma is a term used to describe a granulomatous inflammatory response against surgical swabs or sponges left in the body after surgery. This pathology is well known in human medicine, however, in veterinary medicine it is considered uncommon. It has been reported mainly in dogs and a few cases in cats, mostly associated with previous ovariohysterectomy.

Objectives:

To present the findings in two dogs and one cat that developed intra-abdominal masses several months after an abdominal surgery

Methods:

A computer database search was done in a span period of fourteen years. with keywords of textiloma or gossypiboma.

Results:

Case 1: A 6-year-old spayed female mixed dog is presented due to skin problems. Grossly there was a 6.0 cm encapsulated mass. At cut surface it was filled with fibrin and yellow material and acellular yellowed deposition were also present.

Case 2: A 9-year-old spayed female mixed cat was examined because of a urinary tract infection. Radiological examination showed a mineralized mass near the spleen. The mass cut sections revealed a cavity filled with caseous material.

Case 3: A 2-year-old neutered male Irish setter. Macroscopically, it was a 5.0 cm nodule totally surrendered by omentum adipose tissue. The mass lumen was fully occupied by filaments of gauze sponge fluid.

The microscopically, changes were very similar. There was necrosis mixed with longitudinal and transversal acelular, positive polarized material mixed with histiocytic cells.

Conclusions:

Intra-abdominal masses are infrequently reported in dogs and cats, with two main etiologys identified; a neoplastic process or inflammatory as occurred in these three cases.

P52 / #447

Topic: *AS16 Internal medicine (other)*

ANALYSIS OF PLASMA METABOLOME FROM DOGS WITH IDIOPATHIC DILATED CARDIOMYOPATHY BY TARGETED METABOLOMICS APPROACH

Ivana Rubić[1], Alan Kovačević[2], Josipa Kuleš[3], Renata Barić Rafaj[3], Vladimir Mrljak[1]
[1]University of Zagreb, Faculty of Veterinary Medicine, Clinic For Internal Diseases, Zagreb, Croatia, [2]University of Bern, Department Fur Klinische Veterinarmedizin, Bern, Switzerland, [3]University of Zagreb, Faculty of Veterinary Medicine, Department Of Chemistry And Biochemistry, Zagreb, Croatia

Introduction:

The second most common cause of heart failure in dogs is idiopathic dilated cardiomyopathy (iDCM), which results in heart failure or sudden cardiac death due to arrhythmia. iDCM is a primary myocardial disease characterized by systolic dysfunction and eccentric hypertrophy primarily of the left or both ventricles at the same time. The prognosis of the disease is generally unfavorable.

Objectives:

To discover changes in canine plasma metabolome we applied targeted metabolomics approach using liquid chromatography coupled to mass spectrometry.

Methods:

Plasma was collected from 8 dogs with iDCM and 12 healthy dogs in the retrospective study. Metabolite extraction were performed using the Absolute IDQ p400 kit (Biocrates) a commercially available kit for targeted metabolomics analysis of up to 408 metabolites distributed into 11 metabolite classes. Plasma samples were analyzed on the Dionex Ultimate 3000 UHPLC system (Thermo Fisher Scientific) coupled to a Q-Exactive Plus Orbitrap mass spectrometer (Thermo Fisher Scientific). The data analysis was performed according to the manufacturer's guidelines using the Biocrates MetIDQ software.

Results:

Targeted metabolomic analysis resulted in a total of 199 metabolites, which were used for further statistical anaylsis. The univariate metabolomics analysis identified 14 metabolites with significantly different concentrations ($p<0.05$) between healthy dogs and dogs with iDCM. Amongs them, identified metabolites included amino acids, biogenic amines, acylcarnitines, triglycerides, diglycerides, and sphingomyelin.

Conclusions:

The research of plasma samples of dogs with iDCM discovered potential metabolites significantly changed in canine plasma metabolome. Novel identified metabolites could be potentialy used in the diagnosis and prognosis of iDCM.

P53 / #6

Topic: *AS16 Internal medicine (other)*

RETROSPECTIVE STUDY: ASSESSMENT OF THE LIKELIHOOD OF HYPOTHYROIDISM IN DOGS DIAGNOSED WITH AND TREATED FOR HYPOTHYROIDISM AT PRIMARY CARE PRACTICES: 105 CASES (2016 - 2021).

Victoria Travail, Florence Juvet, Darren Kelly, Valerie Lamb
Southern Counties Veterinary Specialists, Internal Medicine, Ringwood, United Kingdom

Introduction:

There is a significant possibility that an incorrect diagnosis of hypothyroidism could be made in euthyroid patients, and the prevalence of hypothyroidism in the dog population remains controversial.

Objectives:

To retrospectively assess the percentage of dogs diagnosed with, and treated for, hypothyroidism at first opinion practice which are likely to be truly hypothyroid and require levothyroxine supplementation.

Methods:

The computerised databases of seven first opinion practices were searched, to identify dogs treated with levothyroxine supplementation. Three ECVIM-CA diplomates independently assigned one of four clinical assessments to each case as follows: confirmed or very likely hypothyroid, hypothyroidism suspected but not confirmed, hypothyroidism considered unlikely, and no reason to suspect hypothyroidism. They commented as to whether or not they thought levothyroxine supplementation was appropriate.

Results:

Serum total T4 concentration was measured in-house in 27 cases. The measure of total T4 was not specifically requested by the veterinarian in 33 cases. Of these 33 cases, Clinicians 1 and 2 considered levothyroxine supplementation not indicated in respectively 66,7%, and 63,6%. The clinical assessments of ‘confirmed or very likely hypothyroid’; 'Hypothyroidism suspected but not confirmed’; 'Hypothyroidism considered unlikely’; and ‘No reason to suspect hypothyroidism’ was assigned respectively by Clinician 1 to 38,1%, 5,7%, 4,8%, and 51,4% of cases, and by Clinician 2 to 48.5%, 22.9%, 21.9%, 6,7% of cases. Clinicians 1 and 2 considered levothyroxine supplementation not indicated in 57% and 52% of the 105 cases, respectively. Clinician 3's results are pending

Conclusions:

These results support the concern that hypothyroidism might be overly and incorrectly diagnosed in first opinion practice.

P54 / #283

Topic: *AS16 Internal medicine (other)*

ANICTERIC GALLBLADDER RUPTURE SECONDARY TO NECROTISING CHOLECYSTITIS IN A DOG.

Victoria Travail[1], Florence Juvet[1], Claudio Motta[2], Beatriz Moreno-Aguado[3], Lucia Torres-Canto[4]
[1]Southern Counties Veterinary Specialists, Internal Medicine, Ringwood, United Kingdom, [2]southern counties veterinary specialists, Surgery, ringwood, United Kingdom, [3]southern counties veterinary specialists, Diagnostic Imaging, ringwood, United Kingdom, [4]southern counties veterinary specialists, Anaesthesia, ringwood, United Kingdom

Introduction:

A 4-years-old female Cocker spaniel was presented for investigation of acute onset of vomiting and lethargy.

Objectives:

Pyrexia, abdominal discomfort, and distension was detected during clinical examination. Clinicopathological findings revealed mild neutrophilia (with band neutrophiles suspected). Biochemistry showed a mild hyperalbuminemia, mild elevation of ALT. CT scan of the abdomen raised suspicion of gallbladder wall rupture.

Methods:

Cause of the rupture was attributed to necrotising cholecystitis, marked peritoneal effusion, cholangitis and duodenitis associated to regional peritonitis. An exploratory laparotomy was performed, and thorough abdominal lavage and cholecystectomy performed.

Results:

Histopathology revealed a necrotising gallbladder wall and culture of the abdominal free fluid confirmed the presence of a septic exudate with growth of E. Coli. The patient was treated with co-amoxicillin clavulanic and clinical signs resolved.

Conclusions:

This case report should raise awareness that acute abdomen biliary tract rupture could occur without concomitants suggestive serum biochemistry findings.

P55 / #379

Topic: *AS17 Nephrology and Urology*

CURRENT DIAGNOSIS AND MONITORING OF FELINE CHRONIC DISEASE IN PORTUGAL: A QUESTIONNAIRE-BASED STUDY

Tomás Magalhães[1,2,3], Ana Lourenço[2,4,5], Ronald Corbee[6], Felisbina Queiroga[1,2,5,7]
[1]University of Trás-os-Montes and Alto Douro, Department Of Veterinary Sciences, Vila Real, Portugal, [2]University of Trás-os-Montes and Alto Douro, Animal And Veterinary Research Centre (cecav), Vila Real, Portugal, [3]University of Trás-os-Montes and Alto Douro, Centre For The Research And Technology Of Agro-environmental And Biological Sciences (citab), Vila Real, Portugal, [4]University of Trás-os-Montes and Alto Douro, Department Of Animal Science, Vila Real, Portugal, [5]University of Trás-os-Montes and Alto Douro, Associate Laboratory For Animal And Veterinary Sciences (al4animals), Vila Real, Portugal, [6]Utrecht University, Department Of Clinical Sciences - Faculty Of Veterinary Medicine, Utrecht, Netherlands, [7]University of Porto, Center For The Study Of Animal Sciences, Ceca-iceta, Porto, Portugal

Introduction:

Chronic kidney disease (CKD) is one of the most common metabolic diseases and a leading cause of death in senior cats.

Objectives:

To characterize how the diagnosis and clinical monitoring of cats with CKD are being performed in Portugal.

Methods:

All veterinarians working in small animal practice in Portugal and who had diagnosed at least 1 case of feline CKD in the last year were asked to fill out a questionnaire using Google Forms®.

Results:

A total of 258 veterinarians answered the questionnaire, with the majority (n=133; 51.6%) diagnosing 2 to 5 cases per month. For that purpose, blood tests are the most used (n=255; 98.8%), followed by urinalysis (n=230; n=89.1%) and abdominal ultrasound (n=220; 85.3%). International Renal Interest Society (IRIS) guidelines are applied by 91.5% (n=236) and the majority (n=142) uses creatinine and SDMA for staging. The systolic blood pressure (SBP) is rarely (< 25% of the cases; n=38; 14.7%) or never measured (n=39; 15.1%). The most routinely used parameters for monitoring are creatinine and urea (n=255; 98.8%), followed by urinary protein-to-creatinine ratio (n=198; 76.7%) and complete blood count (n=150; 58.1%). The ideal frequency of monitoring was considered by most (n=182; 70.5%) to be every 2 to 3 months or less in a stable phase of the disease, however only 35.3% (n=91) can actually maintain this periodicity due to owner's economic and time constraints.

Conclusions:

From our data, it became clear the need to improve systematic measurement of SBP and to promote owners' awareness regarding the importance of frequent monitoring in these patients.

P56 / #206

Topic: *AS18 Neurology/Neurosurgery*

STUDY OF NEUROLOGICAL SIGNS COMMON TO CHIARI-LIKE MALFORMATION AND SYRINGOMYELIA IN CAVALIER KING CHARLES SPANIEL DOGS IN BRAZIL

Beatriz Oliveira[1], Eduardo Bondan[1,2]
[1]University Paulista, Graduate Program In Environmental And Experimental Pathology, São Paulo, Brazil, [2]University Cruzeiro do Sul, Veterinary Medicine Department, São Paulo, Brazil

Introduction:

The Cavalier King Charles Spaniel breed presents many reports of Chiari-like malformation and syringomyelia. The Chiari-like malformation occurs due to an alteration in the caudal fossa, which leads to herniation of the cerebellum. The most accepted theory for syringomyelia associated with Chiari malformation is that cerebellar herniation interrupts the cerebrospinal fluid flow, inducing the formation of syringes in the spinal cord.

Objectives:

This study aims to carry out a survey of neurological signs associated with Chiari-like malformation and syringomyelia in Cavalier King Charles Spaniel dogs in Brazil, signs that have been already described in publications from other countries, but whose prevalences remain unknown in the Brazilian canine population.

Methods:

The investigation consisted of an online form made available to tutors of dogs of the breed in Brazil, containing questions regarding the main clinical signs of these changes.

Results:

Tutors from 101 dogs (56 males and 45 females) answered if the animals presented or not neurological disorders. The most described signs were rubbing the face on furniture (39.6% 40/101), phantom itch (37.62%, 38/101), back pain (7.92%, 8/101), difficulty in climbing on furniture (8.91%, 9/101), fly catcher`s syndrome (6.93%, 7/101) and muscle tremors (6.93%, 7/101). Forty-one dogs from 101 animals presented some neurological complaint (40.59%). Few tutors took their animals to a veterinary neurologist (9.90%, 10/101) and only 7 (6.93%) had diagnostic confirmation of the condition.

Conclusions:

We can conclude that there is a low demand from Brazilian tutors for veterinary neurologists, although there are several animals of this breed with clinical signs suggestive of neurological changes.

P57 / #472

Topic: *AS18 Neurology/Neurosurgery*

EVALUATION OF CEREBROSPINAL FLUID LACTATE CONCENTRATIONS IN CATS WITH AND WITHOUT STRUCTURAL CENTRAL NERVOUS SYSTEM (CNS) DISEASE AS A POTENTIAL BIOMARKER FOR CNS DISEASE.

Roberto Palma
Dogwood Veterinary Referral Center, Neurology, Farmington, United States of America

Introduction:

Cerebrospinal fluid (CSF) lactate concentrations have been evaluated in dogs using point-of-care analysers with an established reference range, and maybe useful as a potential rapid biomarker for dogs with central nervous system (CNS) disease, but has not yet been investigated in cats for a reference range or as a potential biomarker for structural CNS disease.

Objectives:

We suspect that cats will have a similar reference range as dogs, and that cats with structural CNS disease will not have significantly elevated CSF lactate concentrations when compared to cats without structural CNS disease.

Methods:

This was a prospective case series, evaluating CSF lactate concentrations in 16 cats, 8 cats with structural CNS disease and 8 cats with normal MRI findings.

Results:

The range of CSF lactate concentrations for the normal group was 1.5 - 2.4 mmol/L, similar to the normal canine reference range (1.02 - 2.49 mmol/L). The CSF lactate concentration range in the abnormal group was 1.5 - 2.5 mmol/L, with no statistical difference compared to the normal group (P=0.35). Tentative diagnosis in the normal group included idiopathic epilepsy and idiopathic vestibular dysfunciton, and in the abnormal group suspected diagnosis included neoplasia, meningoencephalitis, hydrocephalus and cysts.

Conclusions:

The study revealed there is no significant difference between CSF lactate concentrations in cats with structural CNS lesions and cats without CNS lesions. The reference range for normal cats was similar to the reference range in normal dogs. CSF lactate concentration measurements are not likely to be helpful as a biomarker for structural CNS disease in cats.

P58 / #408

Topic: *AS19 Nutrition*

EFFECT OF IMMUNE-MEDIATED DISEASES ON REDOX INDICES IN AKITA INU DOGS: PRELIMINARY RESULTS

Paola Cagnoli[1], Alessia Candellone[2], Watanya Jarriyawattanachaikul[3], Vittorio Saettone[4], Paola Badino[3], Flavia Girolami[5], Rosangela Odore[5]
[1]LP, Free Lance, Feletto, Italy, [2]University of Turin, Dept. Of Veterinary Science - Nutrito Vet Srl, Grugliasco, Italy, [3]University of Turin, Dept. Of Veterinary Science, grugliasco, Italy, [4]White Bridge Pet brands, R&d, Genova, Italy, [5]University of Turin, Dept. Of Veterinary Science, Grugliasco, Italy

Introduction:

The Akita Inu dog breed (AI) is affected by several immune-mediated diseases (IMD), including sebaceous adenitis (SA), inflammatory bowel disease (IBD), and uveodermatologic syndrome (UV). Among the many hypotheses proposed for the pathogenesis of these disorders, oxidative stress-mediated alterations leading to autoimmunity have been the most widely speculated. However, antioxidant status in AI dogs with IMD have been poorly investigated

Objectives:

To evaluate redox indices in AI dogs diagnosed with IMD and to compare their redox burden with healthy AI and non-AI patients

Methods:

10 AI dogs newly diagnosed with IBD, SA and UV; 25 healthy AI patients and 15 control cases belonging to dog breeds other than AI have been enrolled. dROMs, OXY-Adsorbent test and the Oxidative Stress index (OSi) were selected as redox indices. Data were compared by one-way ANOVA with Kruskal-Wallis test correction

Results:

dROMs of AI suffering from IMD were significantly higher ($p=0.003$) than those of the healthy AI and non-AI dogs.The OXY-Adsorbent test results in IMD cohort were significantly lower than those in healthy non-AI dogs but higher as compared to healthy patients belonging to the same breed ($p=0.0008$). Moreover, the Osi value in diseased group was significantly higher ($p=0.01$) than that of healthy AI and non-AI cases

Conclusions:

AI dogs diagnosed with IMD are characterized by an increased redox burden as compared to healthy subjects. Moreover, healthy AI patients showed a greater physiological impairment of antioxidant defences. These findings support the rationale for the antioxidant supplementation in such a breed to likely reduce the risk of IMD

P59 / #387

Topic: *AS20 Oncology*

PERIANAL MELANOCYTIC TUMORS IN THIRTEEN DOGS.

Alexis Berrocal
Laboratorio Patología, Private Laboratory, Heredia, Costa Rica

Introduction:

Perianal adenoma, adenocarcinoma, and apocrine gland adenocarcinoma of the anal sacs are the most reported tumors of the perianal area in dogs. On the contrary, perianal melanocytic neoplasias are infrequently reported as this type of neoplasia is more common in other in locations such as skin, oral cavity and subungual.

Objectives:

To present a group of 13 dogs with a melanocytic tumor all of them originated from the perianal region.

Methods:

A retrospective computer search was carried out in span of 10 years with three key words: Melanocytic, Dogs, Perianal.

Results:

Twelve cases were obtained from biopsies samples. They were processed routinely for histopathological examination. Eleven were classified as malignant neoplasias, one case was benign. Moreover, one case was a fine needle aspiration with malignant features. Signalment: There were 13 dogs, (5 mixed breed, 4 Doberman, 2 Schnauzers, 1 American Staffordshire Terrier and 1 Rottweiler). The age was between 7 to 16 years (13 median). There were 9 males and 4 females. The reason the pet was presented to the clinic was a mass causing discomfort or bleeding after ulceration.From the 11 cases classified as malignant only in 4 the follow-up was available. 2 out 4 dogs had via pelvic lymph node abdominal invasion(metastasis).

Conclusions:

Reviewing the literature, only a few isolated melanocytic neoplasias from the perianal region have been published. To our knowledge this is first report of a group of thirteen cases.

P60 / #207

Topic: *AS20 Oncology*

B CELL LYMPHOMA INFILTRATION INTO MULTIPLE JOINTS OF AN IRISH WOLFHOUND

Charlotte Lea[1], Oliver Coldrick[2], Andrea Di Bella[1]
[1]Southern Counties Veterinary Specialists, Internal Medicine, Ringwood, United Kingdom, [2]VPG Exeter, Veterinary Diagnostics, Exeter, United Kingdom

Introduction:

Lymphoma is one of the most common neoplasia in veterinary medicine. Lymphoma has been reported in several anatomical locations, but, we report the first case of B cell lymphoma infiltration into multiple joints in a dog.

Objectives:

Case history:

A three-year old female neutered Irish wolfhound was diagnosed with B cell multicentric lymphoma based on cytology and immunocytochemistry. Chemotherapy with a CHOP protocol was initiated. At week four of treatment, neutropenia was noted. This progressed to pancytopenia, and the dog developed acute onset lameness on all four limbs. Lymphoma infiltration into the bone marrow, or chemotherapy toxicity were the main differentials for pancytopenia. Immune-mediated polyarthritis or lymphoma infiltration in the joints were the main differentials for joint pain and swelling. Bone marrow biopsy and joint taps of both carpi, elbows, tarsi and stifles were performed. Bone marrow biopsies indicated lymphoma infiltration. Joint tap cytology indicated the presence of blast cells on aspirates of both stifles, the right tarsus and the left elbow, indicating lymphoma infiltration here also. The dog received rescue therapy with L-asparginase, but due to uncontrollable pain, she was later euthanised.

Methods:

N/A (case report)

Results:

N/A (case report)

Conclusions:

Infiltration into the joints should be considered in any dog with lymphoma and concurrent lameness. A diagnosis can be made based on joint tap cytology. Our case report also demonstrates that joint infiltration of lymphoma can cause severe pain, negatively impacting the quality of life of patients.

P61 / #468

Topic: *AS20 Oncology*

VETERINARY PALLIATIVE CARE: ACCORDING TO THE PERCEPTION OF TUTORS OF DOGS AND CATS WITH CANCER

Ketlyn Martins[1], Beatriz Paz[1], Viviane Morelli[1], Marília Albuquerque Ferreira[2], Milena Magrin[1], Andrigo Barboza De Nardi[1]
[1]Unesp - Universidade Estadual Paulista, Department Of Clinics And Surgery, Jaboticabal, Brazil, [2]Universidade Federal do Vale do São Francisco, Department Of Clinics And Surgery, Petrolina, Brazil

Introduction:

Palliative care in veterinary medicine aims to improve the quality of life of animals with chronic, degenerative and incurable diseases, considering their physical, emotional and social well-being and that of their tutors.

Objectives:

To assess the owner's perception of dogs and cats with cancer who received palliative veterinary care (VPC).

Methods:

With the approval of the Ethics Committee on the Use of Animals (nº 4260/20), the questionnaire “Assessment of Care in Veterinary Palliative Care” (ACVPC) was applied to 83 owners of dogs and cats with cancer who received VPC in a public higher education institution.

Results:

Of the 83 participating owners, 38 (44.6%) responses to the form were obtained, 37 (97.4%) participants declared they support VPC for pets, they said they did not regret (97.4%) the treatment and who would treat another pet in the same service (97.4%). As well as 27 (71%) declared they were happy to have chosen to treat their animals with VPC. In relation to the severity and discomfort generated by the patient's symptoms, 12 (31.6%) stated that the symptoms reduced a lot, 11 (28.9%) very much and 10 (26.3%) a little.

Conclusions:

It is concluded that the VPC was satisfactorily accepted by the tutors, who described improvement in the symptoms experienced by their animals, highlighting the importance of the application of VPC with cancer patients.

P62 / #350

Topic: *AS20 Oncology*

LONG-TERM SURVIVAL AS A TREATMENT BENCHMARK IN STAGE III ORAL MALIGNANT MELANOMA: LATEST RESULTS AND CLINICAL IMPLICATIONS OF MRB-CFI-1 NANO-IMMUNOTHERAPY

Noelia Talavera Guillen[1], Milena Magrin[1], Alexandra Fantinatti[2], Gabriel Carra[1], Beatriz Paz[1], Rodrigo Horta[3], Gleidice Lavalle[3], Bruna De Sena[3], Pedro Pimentel[3], Nelson Duran[2], Andrigo Barboza De Nardi[1], Wagner Fávaro[2]
[1]Sao Paulo State University, School Of Agricultural And Veterinary Sciences, Jaboticabal, Brazil, [2]University of Campinas, Laboratory Of Urogenital Carcinogenesis And Immunotherapy, Campinas, Brazil, [3]Federal University of Minas Gerais, School Of Veterinary, Belo Horizonte, Brazil

Introduction:

Patients with advanced oral malignant melanoma (OMM), stage III-IV, have few options to achieve long-term survival. Historically, the median overall survival for patients with stage III and IV melanoma is 163 and 80 days, respectively. Immunotherapy has become a promising cancer therapy, improving the prognosis of patients with melanoma, and offering the possibility for long-term survival.

Objectives:

This study evaluated the efficacy of MRB-CFI-1 nano-immunotherapy in patients with stage III OMM.

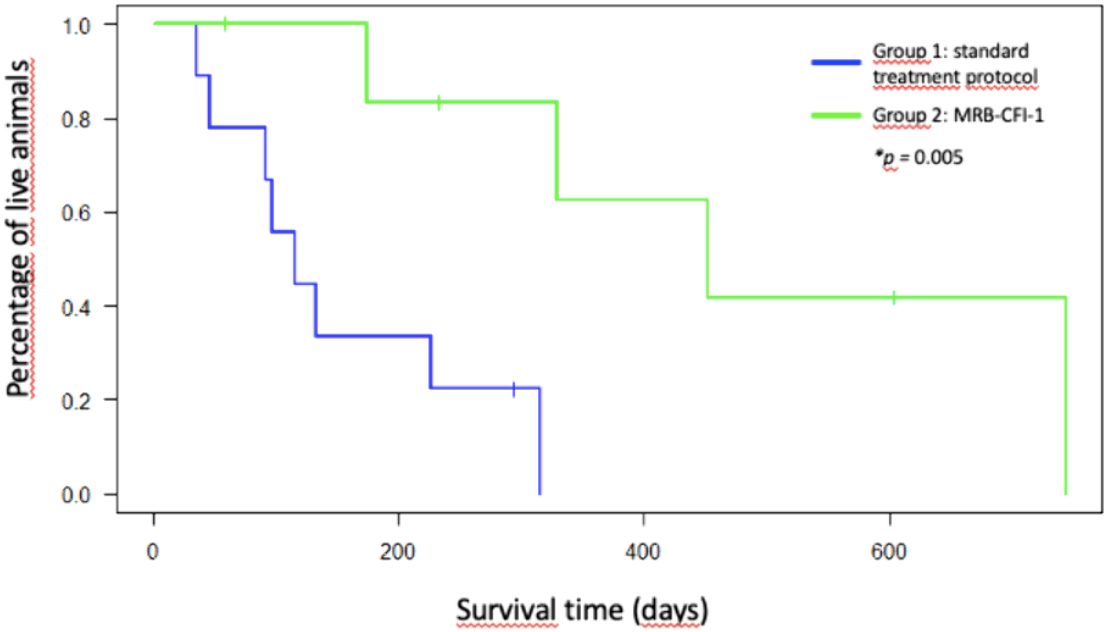
Methods:

We carried out a prospective, multicenter study (protocol number 4861-1/2018) in 16 (4 male, 12 female) consecutive dogs with stage III OMM. The patients were divided into 2 groups: Standard treatment protocol (G1 group, n=09): patients were submitted to surgery and/ or electrochemotherapy associated to chemotherapy (Carboplatin: 250—300 mg/m^2— intravenous); MRB-CFI-1 immunotherapy associated to standard treatment protocol (G2 group, n=07): in addition to the standard treatment, the patients received intramuscular MRB-CFI-1 immunotherapy (22 mg/mL) application twice per week for 3 months, followed by application, once every other week, until 1 year of treatment.

Results:

The median overall survival was significantly higher in the G2 group (329 days) versus G1 group (115 days) (p = 0.005). Based on iRECIST criteria, complete response rate was 22.2% in

the Group 1 versus 40.0% in the Group 2; partial response rate, 30.0% versus 55.6%; progressive disease rate, 22.2% versus 10.0%.



Kaplan-Meier curve for stage III oral malignant melanoma. Median overall survival between G1 group (115 days) versus G2 group (329 days) (p = 0.005).

Conclusions:

In this, favorable long-term survival among study patients suggests that MRB-CFI-1 immunotherapy seems an effective treatment option for patients with advanced oral melanoma.

P63 / #454

Topic: *AS21 One health*

GIANT KIDNEY WORM IN TWO STRAY BITCHES SUBMITTED TO OVARIOHYSTERECTOMY – A WARNING SIGN FOR DIOCTOPHYMA RENALE INVESTIGATION IN ENDEMIC AREAS.

Camila Amaral[1], Paulo Sérgio De Andrade Jr.[2]
[1]Universidade Federal Fluminense, Departamento De Patologia E Clínica Veterinária - Laboratório De Patologia E Clínica Veterinária (lapv-uff), Niterói - RJ, Brazil, [2]Instituto Federal do Espírito Santo, Coordenação Geral De Gestão De Campo - Clínica Veterinária - Ifes, Rive-Alegre ES, Brazil

Introduction:

Dioctophyma renale, the giant kidney worm, is considered endemic in South America. It commonly affects stray dogs and is considered zoonotic. Infection occurs by paratenic host ingestion from riparian areas. Adult worms are found in the right kidney but ectopic location is common.

Objectives:

This report aims to describe two cases of D. renale infection in stray bitches submitted to ovariohysterectomy for populational control, to highlight the importance of diagnostic surveillance in endemic areas of this emerging zoonosis.

Methods:

Two young adult stray bitches were submitted to ovariohysterectomy before adoption. Pre-operative hemogram was performed. Neither dogs presented signs of any urinary disease.

Results:

Castration protocol included minimal abdominal incision (≤ 3,0 cm) with surgical hook use. During surgery, an inflamed omentum was observed and, being from a Brazilian Southeast endemic area, dioctophymosis was suspected. At the time, no free worm was identified. Ovariohysterectomies went on without intercurrence and both dogs recovered well. After that, abdominal ultrasonography was performed to confirm clinical suspicion. In one bitch, only right kidney was affected. The other one presented a free worm in abdominal cavity, without renal lesion. Nephrectomy and exploratory laparotomy, respectively, were performed afterwards for nematode removal. Both patients recovered without further problem.

Conclusions:

Canine populational control is an important worldwide public health measure. However, in dioctophymosis endemic areas, ultrasonographic examination plays a relevant role in diagnosing this disease in stray dogs for adoption. Eggs and worm identification, followed by

surgical intervention, not only prevent further renal and peritoneal damage but also interrupts nematode zoonotic cycle.

P64 / #434

Topic: *AS21 One health*

DIOCTOPHYME SP. RENAL INFECTION IN A DOMESTIC DOG FROM THE PERUVIAN AMAZON BASIN

Luis Baselly[1], Claudia Maguiña-Molina[2], Jesus Lescano[3]
[1]Universidade Estadual Paulista, Faculdade De Medicine Veterinária E Zootecnia, Sao Paulo, Brazil, [2]Universidad Nacional Mayor de San Marcos, School Of Veterinary Medicine, Lima, Peru, [3]Universidad Peruana Cayetano Heredia, School Of Public Health And Administration, Lima, Peru

Introduction:

Dioctophyme sp. is a big sized nematode with a complex life-cycle associated with aquatic ecosystems. It can cause infection in wild and domestic mammals, including humans, that consume the infectious larvae within fish or amphibians' tissues. The adult parasite commonly infects the renal parenchyma and causes severe damage in such organ.

Objectives:

To describe the finding of Dioctophyme sp. in a dog from the Peruvian Amazon basin.

Methods:

A 6-month-old female mixed-breed dog was referred to a private veterinary clinic for evaluation in Iquitos city (Loreto, Peru). The patient was recently rescued stray dog, and its previous alimentary habits were unknown. During physical evaluation the dog showed depression, hematuria, fever, and left-side lumbar pain. Hematological tests, urinalysis, and ultrasound examination were performed.

Results:

Hematological examination showed anemia and microcytosis. Abdominal ultrasonography revealed renal asymmetries. Right kidney had an atypical topography, abnormal dimensions (nephromegaly), and severe lost of differentiation in the corticomedullary architecture. Additionally, hyperechogenic structures were observed inside this organ. Left kidney had normal appearance and size. Urinalysis showed eggs compatible with Dioctophyme sp. Hence, nephrectomy was performed to remove the affected kidney. After surgery, a red nematode measuring 26cm length was found inside the left kidney. Its appearance agreed with previous descriptions of the genera Dioctophyme.

Conclusions:

To the authors´ knowledge, this is the first report of Dioctophyme sp. infecting a domestic dog from the Peruvian Amazon basin. Dioctophyme sp. infections should be included in the differential diagnosis for animals and humans with infectious renal disease in this geographic area.

P65 / #415

Topic: *AS21 One health*

THE UNIVERSAL HUMAN-ANIMAL BOND: NEW INTERNATIONAL RESEARCH LINKING STRONG BONDS TO BETTER VETERINARY CARE

Steven Feldman[1], Michael Mcfarland[2]
[1]Human Animal Bond Research Institute (HABRI), Executive Leadership Team, Washington, United States of America, [2]Zoetis, Executive Leadership Team, Parsippany, United States of America

Introduction:

HABRI and Zoetis conducted the largest-ever international human-animal bond survey, reaching pet owners and veterinarians across 9 countries. The data provides a detailed understanding of how the human-animal bond impacts the practice of small animal veterinary medicine.

Objectives:

–Gain an understanding of the perceptions and experiences of the human-animal bond among dog and cat owners and small animal veterinarians.

–Understand how the strength of the human-animal bond impacts human health.

–Explore the connection between the human-animal bond and use of veterinary services.

–Learn practical ways to gauge the strength of the human-animal bond among clients and identify ways to infuse the human-animal bond into the practice of veterinary medicine.

Methods:

18,145 dog and cat owners and 1,357 small animal veterinarians from the UK, USA, Germany, Spain, France, Brazil, China, Japan and Mexico were surveyed. Samples were nationally-representative (gender, age, region).

Results:

Results of this quantitative research study offer strong evidence that pets positively impact their owners' health. The research shows how stronger human-animal bonds are connected to measurable increases in veterinary treatment and care. The data also shows a correlation between stronger bonds and increased knowledge of human-animal bond science, suggesting that efforts to increase this knowledge are important to building the bond and achieving increased use of veterinary services.

Conclusions:

The human-animal bond is universally experienced across cultures, and has a positive impact on pet and human health. The data demonstrates that efforts to strengthen the human-animal bond have the potential to positively transform veterinary medicine.

P66 / #397

Topic: *AS21 One health*

CANINE SALIVA: A POSSIBLE INTERSPECIES TRANSPORT MEDIUM FOR MOBILE ANTIMICROBIAL RESISTANCE GENES

Adrienn Tóth[1], Imre Tóth[2], Bernadett Rózsa[3], Eszter Kovács[1], Attila Dubecz[4], Árpád Patai[5], Tibor Németh[6], Selcuk Kaplan[7], László Makrai[8], Norbert Solymosi[1]
[1]University of Veterinary Medicine Budapest, Centre For Bioinformatics, Budapest, Hungary, [2]Borsod-Abauj-Zemplen County Hospital, Department Of Thoracic Surgery, Miskolc, Hungary, [3]Western College of Veterinary Medicine, Department Of Small Animal Clinical Sciences, Saskatoon, Canada, [4]Paracelsus Medical University, Department Of Surgery, Nuremberg, Germany, [5]Semmelweis University, Department Of Surgery, Transplantation And Gastroenterology, Budapest, Hungary, [6]University of Veterinary Medicine Budapest, Department And Clinic Of Surgery And Ophthalmology, Budapest, Hungary, [7]Tekirdag Namik Kemal University, Department Of Genetics, Tekirdag, Turkey, [8]University of Veterinary Medicine Budapest, Department Of Microbiology And Infectious Diseases, Budapest, Hungary

Introduction:

Standards and behaviors associated with keeping companion animals has undergone an evolution in the past decades. The process has even been accelerated by the COVID-19 pandemic. Visits at small animal veterinarians and clinical intervention, including the administration of antibiotics, turned relatively regular. In the meantime, the coexistence of pets and their owners has become physically proximate. Companion animals often sleep with their owners, lick them, and unfortunately, sometimes also bite them.

Objectives:

Our aim was to determine the bacterial composition, the antimicrobial resistance gene (ARG) content and the mobile genetic element (plasmid, bacteriophage, integrative mobile genetic element) associated ARG set of metagenomic datasets deriving from canine saliva samples.

Methods:

Bioinformatic metagenome analysis was performed on 26 new generation sequencing canine saliva datasets from 2020 and 2021. The datasets were reposited in NCBI SRA (Short Read Archive) by the 10,000 Dog Genome Consortium and the Broad Institute within Darwin's Ark project.

Results:

Besides the identification of possibly pathogenic bacteria that are often isolated from dog bite infections, ARGs against aminoglycosides, carbapenems, cephalosporins, glycylcyclines, lincosamides, macrolides, oxazolidinone, penams, phenicols, pleuromutilins, streptogramins, sulfonamides and tetracyclines were identified. Many of these ARGs were predicted to be mobile, including ones against amoxicillin-clavulanate, the most commonly applied antibiotic agent by dog bite infections.

Conclusions:

Canine saliva is rich in ARGs. As many of these ARGs are potentially mobile, their chance of being transferred to bacteria colonizing humans is relatively high. Consequently, canine saliva may contribute to the interspecies spread of antimicrobial resistance.

P67 / #273

Topic: *AS22 Ophthalmology*

SHORT TERM COMPARATIVE EFFICACY OF TWO TOPICAL VISCOELASTIC AND CYCLOSPORINE FOR TREATMENT OF DRY EYE IN DOGS EVALUATED BY A NONINVASIVE IMAGE ANALYZER SYSTEM.

Felipe Wouk[1], Joao Kleiner[2], Daniela Pereira[3], Flavio Stipp[1,4]
[1]Federal University of Parana, Veterinary Medicine, Curitiba, Brazil, [2]Vetweb Oftalmologia, Veterinary Ophthalmology, Curitiba, Brazil, [3]Daniela Pereira, Veterinary Ophthalmology, Americana, Brazil, [4]Federal University of Parana, Ophtalmology, Curitiba, Brazil

Introduction:

Cyclosporine (CsA), Chodroitin sulfate (CS) and Sodium Hyaluronate (HA) eyedrops have been reported to produce tear stability and quantity in dogs. As viscoelastic tear substitutes, CS and HA have diffrent rheological properties.

Objectives:

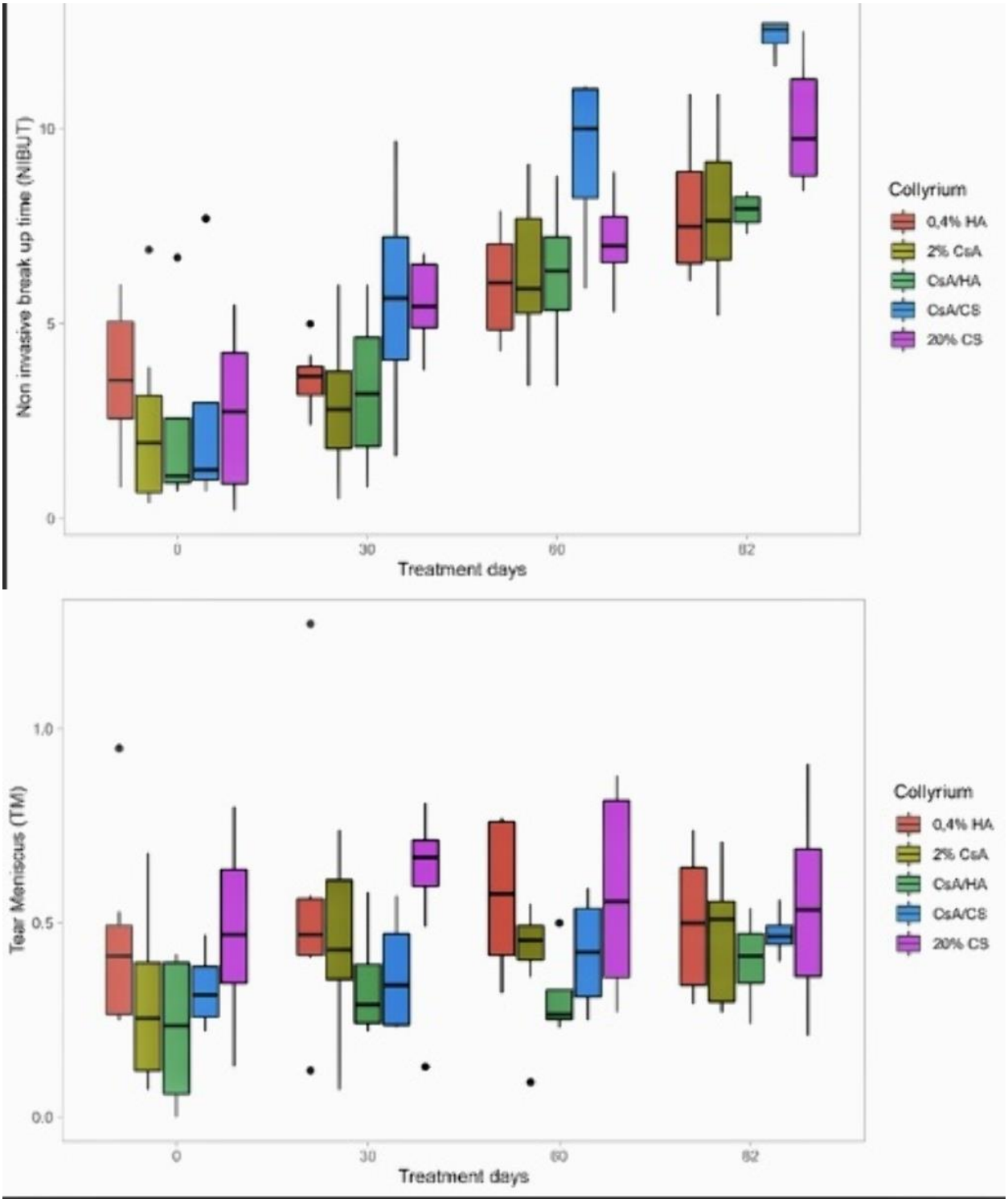
Compare in dogs with dry eye, the stability and volume of tears produced by topical 20% CS (Tears®) and 0,4% HA (Adaptis®), associated or not to 2% manipulated CsA eyedrops.

Methods:

In a randomized masked clinical study, 40 eyes of 20 dogs, 4 dogs as control, and 16 dogs with immune-mediated dry eye, were evaluated for a 12 week period using a noninvasive image analyzer system (OSA-VET®) considering the following parameters: noninvansive break up time (NIBUT), Schirmer Tear Test, Tear Meniscus and Meibomiography. Four groups with 4 dogs were treated with the following design for left and right eye in each animal: 1= CsA and HA; 2= CsA and CS; 3= CsA+HA and CsA+CS; 4= HA and CS.

Results:

All groups showed an improvement in all parameters during the study. In group HA/CS better results for all parameters (5% statistical difference) with CS, particularly NIBUT (fig.1). Considering all statiscal possible interactions between treatments, there was statistical difference for Tear Meniscus in favor of Chondroitin sulfate (fig.2)



Conclusions:

Comparing HA, CS and CsA eyedrops and associations, 20% CS eydrops promotes increased tear quantity and stability possibly due its rheological Newtonian properties.

P68 / #396

Topic: *AS22 Ophthalmology*

RETINAL GLIOSIS AND CHOROIDAL MICROTHROMBOSIS IN CATS WITH CORONAVIRUS INFECTION – ELECTRON MICROSCOPY STUDY

Natalia Ziółkowska[1], Bogdan Lewczuk[1], Hubert Ziółkowski[2]
[1]University of Warmia and Mazury, Histology And Embryology, Olsztyn, Poland, [2]University of Warmia and Mazury in Olsztyn, Pharmacology And Toxicology, Olsztyn, Poland

Introduction:

Feline coronavirus (FCoV) in cats causes panuveitis and chorioretinitis.

Objectives:

To determine ultrastructural changes in the retina of cats with FCoV-induced chorioretinitis.

Methods:

Eyes from two cats (Canadian sphinx) naturally infected with feline coronavirus (FCoV) were taken for light and electron microscopy. The eyes were fixed in 4% paraformaldehyde or in a mixture of 2.5% glutaraldehyde and 1% paraformaldehyde, then dehydrated and embedded in resin. Semi-thin sections (2µm) were stained with toluidine blue. Ultrathin sections (50nm) were contrasted with uranyl acetate (Sigma-Aldrich, G3893) and visualized with a transmission electron microscope (FEI). To confirm the presence of coronavirus antigen in ocular tissues, anti-FCoV antibody was used.

Results:

Multiple thick processes of glial cells containing intermediate filaments extended throughout almost all retinal layers. Mitotic figures were present in glial cells, and many lymphocytes were observed between neurons in the inner nuclear layer. The apical parts of the photoreceptor outer segments were vacuolized and deformed, and multiple platelets were present in choroidal veins.

Conclusions:

During FCoV infection, inflammatory cells (mostly lymphocytes) appear to enter retinal tissue from the retinal blood vessels. During FCoV induced retinitis, glial cells accumulate many intermediate filaments, suggesting that retinal gliosis is present. The presence of multiple platelets in choroidal veins suggests that there is microthrombosis in those vessels, which can cause deficits in retinal blood supply as a consequence of the inflammatory processes caused by FCoV. Support: This study was supported by research grant No. 010/RID/2018/19

P69 / #457

Topic: *AS23 Orthopedics*

INTRAARTICULAR CANINE ALLOGENEIC ADIPOSE-DERIVED MESENCHYMAL STEM CELLS AND HYALURONIC ACID AS A TREATMENT FOR ELBOW OSTEOARTHRITIS

Marta Montolío, Jordi Franch, David Herrera, Alicia O'Byrne, Katrin Rappe
Veterinary School. University Autonomous of Barcelona, Small Animal Medicine And Surgery, Bellaterra. Barcelona, Spain

Introduction:

Osteoarthritis (OA) is a degenerative disease affecting joint cartilage. It is one of the most prevalent diseases in dogs. So far, AO has been treated symptomatically and no regenerative therapy was easily available

Objectives:

The objective of this clinical case is to expose the management of a clinical case with elbow OA using intraarticular allogenic adipose-derived Mesenchymal Stem Cells (MSCs) together with Hyaluronic Acid (HA).

Methods:

Canine Allogeneic Adipose-derived MSCs were obtained from a healthy donor. Cells were cultured and expanded, and 12,5*10^6 MSCs were diluted with phosphate-buffered saline. Next 1,5mL of HA was mixed with 0,3mL of MSCs. A canine-castrated male, crossbreed, 6 years old, and 9,3kg presented for chronic lameness. The patient was diagnosed with elbow OA and treated with chondroprotective agents and NSAIDs, but after 6 months the patient was still painful. The injection site was prepared aseptically, 0,1mL of synovial fluid was extracted from the right and 0,4mL from the left elbow. Finally, 0,5mL of MSCs/HA were injected into each elbow.

Results:

In the clinical follow-up, no adverse effects were observed, and the elbow pain was relieved. On the Canine Pain Brief Inventory, an improvement in lameness and pain was evidenced.

Conclusions:

Autologous MSCs are being used to reduce inflammation and pain. Allogeneic MSC with HA could be a feasible treatment for canine AO. They can be used without additional interventions for obtaining the MSCs. This clinical case with a successful follow-up and without adverse effects indicates possible new treatments but further studies must be performed to confirm this effectiveness.

P70 / #339

Topic: *AS23 Orthopedics*

BILATERAL SLIPPED CAPITAL FEMORAL EPIPHYSIS IN A GOLDEN RETRIEVER. CLINICAL OUTCOME AND RADIOGRAPHIC COMPUTED TOMOGRAPHY AND BACK-SCATTERED SCANNING ELECTRON MICROSCOPY APPEARANCE.

Jordi Franch, Alicia O'Byrne, Marta Montolío, Katrin Rappe, David Herrera
Veterinary School. University Autonomous of Barcelona, Small Animal Medicine And Surgery, Bellaterra. Barcelona, Spain

Introduction:

Slipped capital femoral epiphysis (SCFE) is an infrequently observed disease in both human and veterinary medicine. It is a complex and multifactorial condition characterized by a nontraumatic, slow and progressive displacement of the proximal femoral metaphysis from the femoral epiphysis through the physis. The disease is more common in cats and very few cases have been described in dogs.

Objectives:

Description of a bilateral SCFE clinical case in a dog and provision of a non-previously published back-scattered scanning electron microscopy (BS-SEM) assessment of the disease

Methods:

A 10-month-old intact female Golden Retriever was presented with a bilateral hindlimb weakness that appeared with a gradual onset 2 months ago. At presentation, the animal had a clear weakness of the hindlimbs and an evident lameness in the left hindlimb with crepitus and painful manipulation.

Results:

Radiographic examination showed narrowing of the femoral neck, especially on the left side, and a ventral displacement of the femoral head. These signs were later confirmed by computed tomography and a diagnosis of SCFE was established. Surgical treatment consisted of a non-simultaneous bilateral femoral head and neck excision. The functional recovery of the patient was complete. The removed femoral heads and necks were treated in the laboratory for BS-SEM microscopy, which revealed an irregular growth plate with metaphyseal bone necrosis areas and an abnormal arrangement of the osteochondral trabeculae indicating an abnormal endochondral ossification

Conclusions:

SCFE is a rare condition in dogs but should be included in the differential diagnosis of hip pain and lameness in puppies.

P71 / #459

Topic: *AS23 Orthopedics*

NEW STRATEGIES FOR BONE HEALING ENHANCEMENT IN VETERINARY ORTHOPEDICS. CALCIUM PHOSPHATE GRANULES, 3D-PRINTED SCAFFOLDS, AND BIOACTIVE SCAFFOLDS

Jordi Franch[1], Alicia O'Byrne[1], Marta Montolío[1], David Herrera[1], Albert Barba[1], Katrin Rappe[1], Irene Lodoso[2], Maria Pau Ginebra[3]
[1]Veterinary School. University Autonomous of Barcelona, Small Animal Medicine And Surgery, Bellaterra. Barcelona, Spain, [2]Universitat Politècnica de Catalunya, Dept. Of Materials Science And Engineering, Barcelona, Spain, [3]Universitat Politècnica de Catalunya. BarcelonaTech, Department Of Materials Science And Engineering, Barcelona, Spain

Introduction:

Currently, fresh cancellous bone graft is still considered the gold standard to enhance bone healing, however, it is not exempt from disadvantages (increased surgical time, limited availability, iatrogenic damage, etc.) that have led to the development of bone substitutes such as those based on calcium phosphate

Objectives:

The objective of this work was to assess the effectiveness of different presentations of calcium phosphate biomaterials in a series of clinical cases.

Methods:

Three different bioceramic scaffolds were evaluated. 1.- β-tricalcium phosphate (β-TCP) granules that were applied in 23 clinical cases. 2.- 3D-printing β-TCP scaffolds which were applied in 5 clinical cases and 3.- Foamed-hard β-TCP scaffolds seeded with stem cells were applied in 2 clinical cases

Results:

All the clinical cases in which β-TCP granules were applied showed complete bone healing except in one case of an atrophic panmetacarpal non-union. 3D-printing scaffolds also facilitate bone healing in all clinical cases. These scaffolds are very effective in large bone defects, although they only provide an osteoconductive effect, so to ensure good bone healing, a biologically active environment or the addition of osteoinductive factors is necessary. Finally, β-TCP scaffolds seeded with stem cells assured the healing of the two challenging cases.

Conclusions:

The use of bone substitutes based on calcium phosphate is a very useful tool for enhancing bone healing in veterinary orthopedics. Stem-Cells-Seeded β-TCP scaffolds represent a powerful tool for bone healing enhancement in the future although more research must be performed to demonstrate its safety and efficacity

P72 / #351

Topic: *AS24 Other*

A COMPUTER VISION MODEL TO CLASSIFY CANINE FECES CONCISTENCY THROUGH IMAGE ANALYSIS

Andre Dourson[1], Robert Wiggall[2], Esther Bijsmans[2], Mathieu Montoya[3], Mark Parkinson[4]
[1]Mars, Mgs Digital Technologies, Hagenau, France, [2]Mars Pet Nutrition, Global Petcare R&d, Batley, United Kingdom, [3]Royal Canin, R&d, Aimargues, France, [4]Mars, Mgs Digital Technologies, Hackettstown, United States of America

Introduction:

Fecal consistency can be an indication of digestive health, and a standardized classification chart can be used to score from 1 (dry) to 5 (diarrhea). Traditional classification of feces consistency is done based on visual characteristics of the stool including levels of moisture, texture, and shape. This is time-consuming, has inherent variability and requires training.

Objectives:

To build a series of computer vision models that detect feces and classify the consistency through image analysis using a photograph.

Methods:

A large library of labelled images of dog feces from feeding trials performed at Mars Pet Centers globally was supplemented with crowd-sourced images to cover a variety of backgrounds, weather conditions, and lighting, and non-feces images as negative controls. Fecal quality was scored using a predetermined 1-5 quarter point classification scale by domain experts. Four Artificial Intelligence models were programmed and trained.

Results:

Function	Model	Number of images	Accuracy
Feces identification	Classification	23,776	99.8%
Background removal	Segmentation	6,333	95.4%
Fecal consistency scoring	Classification	11,846	90%
Blood detection	Classification	975	97.8%

The quality of predictions was validated at 92%. The sequence of models was deployed as an application programming interface (API).

Conclusions:

This sequence of models can accurately classify fecal consistency and provide information about (digestive) health. Implementation in the API can offer a convenient monitoring tool for pet owners.

P73 / #385

Topic: *AS24 Other*

INVESTIGATION ON THE RADIATION SAFETY MANAGEMENT OF ANIMAL HOSPITALS IN KOREA FROM 2016 TO 2021

Hae-Chul Park, Kyoung-Mook Kang, Hea-Jung Park, Ha-Yeong Nam, Yeon-Sub Lee, Seon-Jong Yun
Animal and Plant Quarantine Agency, Veterinary Pharmaceutical Management Division, Gyeongsangbuk-do, Korea, Republic of

Introduction:

In recent years, due to the increase in the number of animal hospitals in Korea, the use of radiation-generating devices for disease diagnosis is also constantly increasing and the safety of radiation workers is becoming more important. Therefore, Animal and Plant Quarantine Agency (APQA) has been managing the status of radiation-generating devices and the exposure doses of radiation workers since 2012.

Objectives:

It contributes to radiation safety management such as reducing radiation exposure of radiation workers by investigating the radiation safety management status of animal hospitals from 2016 to 2021.

Methods:

It investigated and analyzed the number of animal hospitals with radiation-generating devices reported by APQA by 2021. The exposure doses of radiation workers from animal hospital with weekly maximum operating load (8mA·min/week) analyzed on data reported by radiation exposure from 2016 to 2021.

Results:

The number of radiation-generating devices and radiation workers of animal hospitals increased from 2,632 to 3,384 and from 3,446 to 6,587 for five year (2016-2021). The number of general x-ray generator, CT, C-arm, portable and dental x-ray in 2021 were 2,384, 94, 176, 709, 21. The average exposure doses of radiation workers in 2021 were 0.21mSv in surface doses, 0.26mSv in depth doses. It was found to be the largest distribution of under 0.1mSv in the range of radiation exposure does.

Conclusions:

This study suggest that radiation safety management system of animal hospitals was generally good, and the average exposure doses of radiation workers was controlled under the 50mSv per years recommended International Commission on Radiological Protection (ICRP).

P74 / #317

Topic: *AS24 Other*

A GLOBAL SURVEY ON THE AVAILABILITY OF CORE ESSENTIAL MEDICINES FOR CATS AND DOGS WITH THE WORLD SMALL ANIMAL VETERINARY ASSOCIATION MEMBER ASSOCIATIONS

Paulo Steagall[1], Walt Ingwersen[2], Pedro Trindade[3]
[1]Université de Montréal, Clinical Sciences, Saint-Hyacinthe, Canada, [2]Boehinger Ingelheim, N/a, Burlington, Canada, [3]School of Veterinary Medicine and Animal Science, UNESP-Botucatu, Department Of Veterinary Surgery And Animal Reproduction, Botucatu, Brazil

Introduction:

The WSAVA Therapeutic Guidelines Group published the list of essential medicines to support animal health and welfare.

Objectives:

The aim of this study was to evaluate the availability of core essential medicines through a global survey with veterinarians.

Methods:

A survey was conducted with the WSAVA member association representatives. Each medicine was scored individually (1. Available in your country as a veterinary licensed product; 2. Available in your country as a human licensed product - but not legally allowed for veterinary used or not specified for veterinary use; 3. Available and sourced only through online pharmacies; 4. Not available or 5. Unknown). Statistical analyses were performed using multiple correspondence analysis (MCA) and logistic regression ($p < 0.05$).

Results:

A total of 61 associations completed the survey (n): Asia (10), Africa (7), Eastern Europe (15), Latin America (8), North America (4), Oceania (2) and Western Europe (15). MCA indicated that responses within Asia were more variable in relation to other regions. There was an interdependence of scores 4 for benzodiazepines, osmotic diuretic and KCl in Africa and for epinephrine and alpha-2 agonists/antagonists in Asia; scores 1 for opioids and benzodiazepines in Western Europe; scores 3 for alpha-2 antagonists in Latin America, but none with Eastern Europe or Oceania, among others. Opioids and benzodiazepines had a higher probability to be available as a veterinary product in Western Europe than Asia or Eastern Europe, respectively.

Conclusions:

This survey demonstrated variability on core medicine availability that may compromise animal welfare and minimum standards of veterinary practice.

P75 / #487

Topic: *AS26 Pharmacology*

ARE THERE SUBSTANDARD VETERINARY ORAL FORMULATIONS OF AMOXICILLIN/CLAVULANIC ACID IN MALAYSIA, THE UNITED KINGDOM, SERBIA AND THAILAND?

Ludovic Pelligand[1], Daniel Baker[2], Amilan Sivagurunathan[3], Zorana Kovačević[4], Namphung Suemanotham[5], Luca Guardabassi[6], Paulo Steagall[7]
[1]Royal Veterinary College (RVC), Clinical Services And Sciences, Hatfield, United Kingdom, [2]University of Hertfordshire, ., ., United Kingdom, [3]Wisma Medivet, ., ., Malaysia, [4]University of Novi Sad, ., Hatfield, Serbia, [5]Mahidol University,, ., ., Thailand, [6]University of Copenhagen, ., Frederiksberg, Denmark, [7]University of Montreal, ., ., Canada

Introduction:

Substandard quality of antimicrobial formulations has negative consequences on patient care due to lack of clinical efficacy as well as potential implications for the selection of antimicrobial resistance. Amoxicillin/clavulanic acid (AMC) is the most commonly used oral antimicrobial drug in companion animals worldwide.

Objectives:

The objectives of the study were to detect types and frequency of deficits in the quality of veterinary oral formulations of AMC in various countries.

Methods:

Prospective study with purposive sampling. AMC tablets formulations destined for canine use were collected from wholesalers or veterinary practice during 2021 and shipped to a central laboratory. Content assay (validated HPLC method with UV detection, according to United States Pharmacopeia) passed when verified in pre-specified 90-120% range of the labelled dose.

Results:

Twenty-one samples were collected from Malaysia(9), the UK(6), Serbia(4) and Thailand(2), yielding 17 different formulations (9 veterinary). Secondary packaging was present for 13/21 samples. Tablets size ranged from 250 to 675 mg. Amoxicillin trihydrate / Potassium clavulanate ratio was 4:1, except for 3 formulations (2:1). Median number of tablets per sample was 32.

Primary packaging integrity was always verified. All formulations contained each of the analytes. For amoxicillin, 2/21 samples were out of specifications (72.8% and 82.3% of labelled content). For clavulanic acid, 4/21 samples were out of specifications (46.9%, 80.0%, 84.3% and 86.5%). One formulation failed for both analytes.

Conclusions:

There was evidence of substandard formulations, especially for clavulanic acid. Sample size was too small to determine their prevalence in the countries sampled; larger and regionally focussed studies are required.

P76 / #449

Topic: *AS28 Reproduction, pediatrics*

EFFICACY OF MIFEPRISTONE AND CABERGOLINE IN THE MEDICAL MANAGEMENT OF BENIGN MAMMARY HYPERPLASIA IN FELINES

Shibu Simon, Anzeena Hind, Rinu Thomas, Bibin Becha, Omkar Kodange
Kerala Veterinary & Animal Sciences University, Animal Reproduction, Genecology & Obstetrics, Thrissur, India

Introduction:

Feline benign mammary hyperplasia/fibroepithelial hyperplasia, is a benign, often drastic enlargement of the mammary gland typically seen in younger cats. This condition has a rapid onset and is observed in both pregnant and non-pregnant unspayed females and rarely in spayed females and tom cats. In cycling queens, this condition is caused by progesterone stimulation of the mammary tissue and in cases where the mammary gland is severely infected or ulcerated, a mastectomy along with ovariohysterectomy may be required putting the animal into great suffering.

Objectives:

To assess the efficacy of mifepristone and cabergoline in medical management of benign mammary hyperplasia in felines.

Methods:

Two female Persian cats with hyperplasia of multiple mammary glands (Fig. 1) presented to University Veterinary Hospital, were treated with oral doses of mifepristone at 6 mg/kg and cabergoline at 5 µg/kg for 14-21 days along with antibiotic and supportive therapy. Serum progesterone levels before and after treatment were 5 ng/ml and 1.53 ng/ml, respectively.

Results:

Evident improvement in condition and reduction in size of the mass was noted within 7 days of treatment and an almost normal appearance by 14-21 days (Fig. 2, 3). The ulcerated mass was also healed and mastectomy and ovariohysterectomy were thus avoided.

Conclusions:

This study highlights the potential use of a novel protocol for the medical management of benign mammary gland hyperplasia in felines, thus avoiding unwanted suffering of the cat through painful mastectomy and routine spay apart from retaining its breeding potential.

P77 / #452

Topic: *AS28 Reproduction, pediatrics*

CRITICAL MANAGEMENT OF CANINE PREGNANCIES BY EARLY ULTRASONOGRAPHIC PREDICTION OF WHELPING DATE AND INDUCTION OF WHELPING WITH MIFEPRISTONE ON PREDICTION DAY

Shibu Simon[1], Niyas Emadudeen[1], Rinu Thomas[2], Anzeena Hind[1]
[1]Kerala Veterinary & Animal Sciences University, Animal Reproduction, Gynaecology & Obstetrics, Trichur, India, [2]Kerala Veterinary & Animal Sciences University, Animal Reproduction, Genecology & Obstetrics, Thrissur, India

Introduction:

Critical management of canine pregnancy envisages ensuring that conceptuses have attained but not exceeded their maximum gestational age (GA) at whelping.

Objectives:

Early prediction of whelping based on inner chorionic cavity diameter (ICC) and crown rump length (CRL)

Induction of whelping using mifepristone on the expected day of whelping (EDW) if the animal has not whelped or does not show signs of impending whelping

Methods:

The bitches included in the study were subjected to pregnancy diagnosis by ultrasonography on or before 24 days from the date of last breeding and those animals with GA ≤ 30 days from LH surge were selected for the study (n =124). GA and EDW (±1 day) were calculated based on ICC and CRL. Animals that had not whelped on EDW (n=38) were subjected to B- mode and Doppler ultrasonography to assess viability of the conceptuses. Whelping was induced by administration of mifepristone @ 3.5-5 mg/kg at 8-hour intervals and a caesarean was performed in non-responsive animals (n=4) after 36 h of induction.

Results:

Of the 124 animals, 86 whelped on the[Ma1] EDW (±1). Among the 38 animals that were given mifepristone 28 animals whelped within 24 h and 34 animals whelped within 36 h (6 of these animals had dystocia, managed medically) and caesarean section was performed on the remaining four animals. An overall neonatal survival rate of 87.54 per cent was observed.

Conclusions:

Critical ultrasonographic monitoring pregnancy along with timely medical intervention with mifepristone wherever necessary can optimize reproductive potential in canines besides ensuring good neonatal survival rates.