Spring 2023

AVHTM Newsletter

A 501(c)(3) nonprofit professional association

Volume 7, Issue 1

Special Events of Interest:

- **ACVECC 2023 Post-Graduate Review**
  April 13 - 14, 2023
  (Virtual)
- **ECVECC**
  June 1 - 3, 2023
  Porto, Portugal
- **ACVIM**
  June 15 - 17, 2023
  Philadelphia PA
  (AVHTM Track and SIG on June 16th)

Welcome to the Spring AVHTM Newsletter

Hello and welcome to our Spring 2023 newsletter. We are sadly reporting the passing of Nicholas Gallo, a very influential figure in veterinary transfusion medicine who was a major progressive force in our field. Many of the technologies he developed are now part of the standard of care in veterinary transfusion medicine. His obituary tells us about both his professional and personal life and shows how much he achieved in his life.

In happier news, we have our usual round up of upcoming events and recent literature which may be interesting to you. Of particular note is the AVHTM Special Interest Group (SIG) at ACVIM in June. It's free for you to attend as a member and we'd love to see you there. We also have a really interesting article on hemoglobin based oxygen carriers from the CEO of Hemoglobin Oxygen Therapeutics, Zaf Zaferilis. He asks why you've never heard of them, but perhaps like me you've been practising for a while and have actually used them, albeit quite a few years ago! Marta Garcia-Arce and Melissa Claus also have written great overviews of their 2022 publications which helped push forward research in transfusion medicine. We hope you enjoy the read.

Nicholas Gallo
1941 - 2023

DMS Laboratories Inc

An Obituary for Nicholas Gallo
Suzanne Reese

We are deeply saddened to let it be known that Nicholas A. Gallo, President of DMS Laboratories, Inc., died last month at age 82. He received a BS in Chemical Engineering from Princeton University, a Juris Doctorate from Yale University, and many other legal accolades in the USA and Europe. Nicholas began his career at Johnson & Johnson as legal counsel, specializing in intellectual property and international trade. He also held executive positions within Ortho Diagnostics and Ortho Pharmaceuticals during the time when the RhoGAM® vaccine, which helps prevent Rh immunization, was introduced, and served ultimately as a President of Ortho Instruments, Inc.

Upon leaving, he began a consulting business with former colleagues which dealt with international problems in the field of health care. That business gave rise to other opportunities and business ventures. Nicholas recognized unaddressed needs in veterinary medicine, and, in 1993, founded DMS Laboratories, Inc. He was among the first to get involved with veterinary transfusion medicine and developed the first commercial kits for canine and feline blood typing under the RapidVet® brand name. Those and other veterinary hematology products, including kits for crossmatching, are still commonly used worldwide.

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An Obituary for Nicholas Gallo

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Nicholas was the driving force behind DMS, being involved in all aspects of development, production and quality control. In addition to his decades of devotion to comparative transfusion medicine (and law practice as a partner in the law firm of Gallo & Darmanian, Esqs.), Nicholas loved classical music, particularly opera (in which he was an expert and avid promoter to friends and colleagues), the theater, traveling, and fine food (he was an expert chef). He leaves behind his wife of 55 years, Cynthia Jacob, also a lawyer, whom he met at Yale, and his beloved DMS staff of many years who will continue his work and goal of serving the veterinary profession. Suzanne Reese has been designated as President of DMS Laboratories, Inc.

Nicholas was known to many in the veterinary community as he took an active role in all aspects of DMS's diagnostic kits. While not a veterinarian, he was highly familiar with the technologies of blood typing and crossmatching and engaged in any advancement to optimize blood safety in clinical practice. We will miss Nicholas dearly.

Participating in the AVHTM Google Group is a benefit of membership. Members whose memberships have lapsed have a 30-day grace period to renew their membership before they are removed from the group. Be sure to keep your membership active to continue participating in our interactive online discussions!

Click here to JOIN/RENEW

Upcoming Events

- ACVECC 2023 post-graduate review April 13-14, 2023 (virtual).

  Day 1 is focused on Advances in Extracorporeal Therapies will be presented by Cathy Langston DVM, DACVIM, DACVN and Jiwoong Her, DVM, MS, DACVECC.

  Day 2 is focused on Endocrine Diseases will be presented by Chen Gilor, DVM, PhD, DACVIM and Amie Koenig DVM, DACVIM, DACVECC

- EVECC Congress Porto 1-3 June: Rising to the Challenges of Emergency Medicine
- ACVIM Forum Philadelphia, PA, June 15-17 with the AVHTM Special Interest Group (SIG) on June 16th, see below.

Click here to RSVP to AVHTM's SIG on June 16.

RSVP HERE

Or go to https://www.avhtm.org/avhtm-rsvp/

The AVHTM SIG at ACVIM: To Crossmatch or not to Crossmatch?

On Friday June 16th we will be having our AVHTM special interest group meeting at Maggiano's Little Italy (12th & Filbert) in Philadelphia between 6 and 9pm. We are delighted to have Drs. Marie-Claude Blais and Anne Hale speaking about the dilemma that is crossmatching. Based on clinical cases, their presentation aims to generate discussions on the controversies and issues surrounding the assessment of blood compatibility in dogs and cats, asking what is the gold standard in veterinary medicine, when should we start crossmatching our patients, how to explain the poor agreement between crossmatch tests, which factors contribute to false positive and negative results, can we address the subjectivity in interpretation both in the clinic and in a research context, is this Coombs' phase necessary? They also ask what you can do practically for your incompatible anemic patient?

We'd love to see you there share your expertise and experience and also to meet old friends and make new ones. You can register here for free as an AVHTM member: https://www.avhtm.org/avhtm-rsvp/. The talk, dinner and drinks are all included. Places are limited to 50 so do RSVP soon.

Where are Hemopure and Oxyglobin?

Zafiris Zafirelis Co-Founder/CEO **Hemoglobin Oxygen Therapeutics LLC**

zzafirelis@hbo2therapeutics.com

The most extensively studied hemoglobin-based oxygen carrier (HBOC) for human use is Hemopure, which apart from its molecular weight is the identical drug to its veterinary counterpart Oxyglobin (250 vs. 200 kD, respectively). Oxyglobin® solution for infusion, is the only artificial oxygen carrier approved to treat canine anemia in the US, EU, and United Kingdom. Worldwide, Oxyglobin has been administered to more than 220,000 animals across 25 species. Over thirty years, hundreds of preclinical studies have been conducted to evaluate their utility across a wide range of human and veterinary indications. Hemopure has been the subject of more than 20 randomized clinical trials (>1400 patients), and is approved in South Africa for the treatment of adult surgical anemia. All this begs the question, where are they and why have you never heard of them?

Hemopure was originally developed with the lofty and ill-fated goal of being a "blood substitute" and competing with the gold standard of packed red blood cells (PRBC). Given its much lower hemoglobin concentration and shorter half-life, Hemopure is simply less efficacious in raising circulating total hemoglobin than PRBCs. In a Phase 3 orthopedic surgery trial with a PRBC control group, these differences resulted in the under-treatment of anemia in patients receiving Hemopure, leading to hypoxia-related cardiac adverse events with a clinical presentation similar to ischemic events secondary to severe vasoconstriction and resultant low blood flow. This confounded the attempted attribution of safety signals to under-treated anemia or product toxicity. Further studies were conducted, some designed in collaboration with the FDA, that aimed to reproduce the mechanism(s) for cardiac events and assess the impact of vasoactivity, and potential intrinsic toxicity on cardiac outcomes. The results of all these investigations strongly support the contention that Hemopure is not cardiotoxic, and that cardiac adverse events seen in the Phase 3 trial are better attributed to the under-treatment of moderate to severe anemia. Studies in patients undergoing cardiac revascularization procedures, suggest in fact that Hemopure may have a cardioprotective effect against ischemia.

In 2008 a controversial and highly publicized meta-analysis published in the Journal of the American Medical Association (JAMA) concluded all HBOC solutions in development were intrinsically cardiotoxic. The meta-analysis release was timed to coincide with a major FDA/NIH workshop on future HBOC development. The ramifications of that single article and the ensuing fearmongering, resulted in the cessation of all ongoing clinical trials, and brought the entire field of HBOC development to a halt, bankrupting the developers. Even now, years later after the methodology and conclusions made by that meta-analysis have been widely discredited, Hemopure remains under a cloud. Ownership rights to both products have changed hands twice since 2009. HbO2 Therapeutics has, since 2014, redirected the human clinical development program to focus on those patients with severe anemia who are unable to be transfused. Hemopure has been used extensively in the US under the FDA's Expanded Access program, treating patients with life-threatening

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anemia where blood transfusion is indicated, but not an option (rare blood types, auto or allo-immunized patients, or those refusing transfusion on religious grounds). Hemopure has also been approved for individual patients on an emergency ("compassionate") use basis for use in almost 100 hospitals. Hundreds of patients who had exhausted all available treatment options received Hemopure, and lives were potentially saved.

Hemopure is also being investigated as a bridge to transfusion for patients in hemorrhagic shock prior to arrival in the hospital. South Africa has one of the highest injury load and injury-mortality rates in the world and it also faces significant challenges to its blood supply. The US Department of Defense awarded a multimillion-dollar contract to the University of Stellenbosch to oversee a consortium of medical centers conducting a Phase 3 pre-hospital resuscitation study of Hemopure in trauma victims. The trial is expected to commence later this year.

Hemopure clinical development has expanded into organ transplantation. A liver transplant can be life-saving for a patient with end-stage liver disease, but a shortage of suitable donor organs means mortality on the waiting list is high. Increasingly, this has resulted in ''extended-criteria donor'' (ECD) organs of suboptimal quality being used for transplantation. Devices performing "normothermic machine perfusion" can reduce ischemic injury and enable viability assessment of donor organs prior to transplantation but require a physiologic oxygen supply because organs are metabolically active at 37^{o}C.

A number of publications have resulted from this work, most notably a prospective study published in the Annals of Surgery, where transplant surgeons evaluated a novel machine perfusion solution using Hemopure, that was successfully used in the resuscitation, viability assessment and subsequent transplantation of high-risk donor livers.
Today, HbO_2 Therapeutics continues in its efforts to raise capital to complete its cGMP manufacturing facility. Until this is achieved, the future of Hemopure development and commercial availability of Oxyglobin is in question.

Join us for our Annual SIG at the ACVIM Forum 2023

June 16 2023, 6:00 pm

Maggiano's Little Italy

1201 Filbert St

Philadelphia

Pennsylvania

SAVE THE DATE!

RSVP is OPEN at avhtm.org

Effect of leukoreduction on inflammation in critically ill dogs receiving red blood cell transfusions: A randomized blinded controlled clinical trial

Melissa A. Claus, Denise Poh, Lisa Smart, Sarah L. Purcell, Corrin J. Boyd, Claire R. Sharp

Our study, affectionately known to enrolling clinicians as ICY POLE (Inflammatory CYtokines Prevented with blOod Leukoreduction), arose as the natural progression from our previous research where we found that leukoreduction attenuated the accumulation of cytokines within bags of stored canine red blood cells.[1,2] We wondered whether this might translate to decreased post-transfusion inflammation in critically ill dogs, similar to the effect seen with leukoreduction in a pre-clinical trial of healthy dogs transfused autologous stored blood.[3]

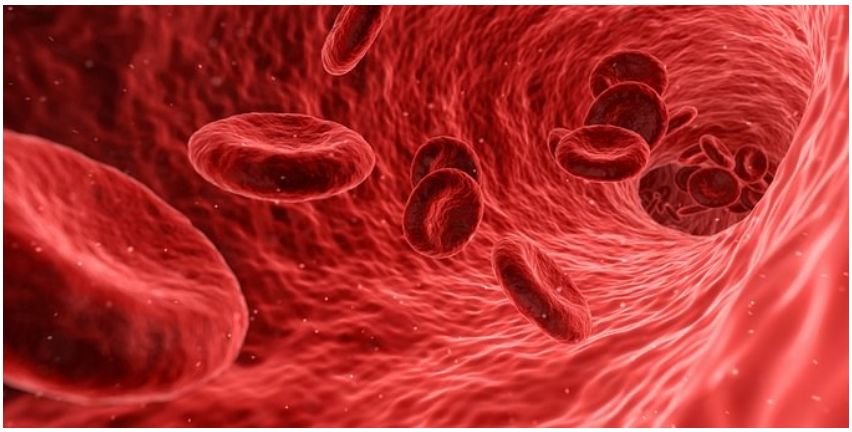
When we were designing our trial, we prioritised making the patient enrolment process as smooth as possible for our busy clinicians. We also wanted the study design to closely align with our current blood bank protocols, particularly the 'first in, first out' mandate to transfuse the oldest compatible blood in the bank. We didn't want to prioritize randomization group over bag age for blood bag choice, as that risked wasting blood products. It was through these requirements, coupled with the clinical equipoise of transfusing LR or non-LR blood and the commercial availability of identical LR and non-LR bags that we settled on randomizing the blood bags into groups rather than randomizing the patients. Using this randomization method, the clinicians who were enrolling patients found it less onerous to obtain owner consent. There were no daunting questions to field about the 'experimental blood' or the 'control blood' because the patients were always going to get the oldest bag of blood in the fridge. The owners just had to consent to have slightly larger samples of blood taken at times when blood was going to be collected anyway. Randomization of the bags rather than the patients ensured there were always both LR and non-LR bags in the bank, which meant after patients were enrolled in a group, they could continue to receive blood bags from that group as required within the 24-hour study window. Finally, blinding of the ECC clinical team was easily maintained, as the bags were created in a separate area of the hospital by people not involved with patient care, and were identical in appearance following processing.

While the wide variation in our population's baseline inflammation prevented our study from having adequate power to detect a difference between groups, we can use our data to begin to plan a future clinical trial. Using the 24-hour mean C-reactive protein (CRP) results and the standard deviation of 50 mg/L from the NLR group, we calculated that a clinical trial with 150 patients per study group would give 80% power to detect a difference in CRP between NLR and LR at $\alpha=0.05$. Employing the randomisation protocol we used, and measuring CRP as the primary biomarker of post-transfusion inflammation, we believe a multicenter trial would be feasible to continue to investigate the question of whether leukoreduction abrogates post-transfusion inflammation.

1. Purcell SL, Claus M, Hosgood G, Smart L. Effect of leukoreduction on concentrations of interleukin-8, interleukin-1β, and tumor necrosis factor-α in canine packed red blood cells during storage. Am J Vet Res. 2015;76:969-974.
2. Purcell S, Claus M, Hosgood G, Smart L. Interleukin-8, interleukin-1β and tumour necrosis factor-α in sequential units of packed red blood cells collected from retired racing Greyhounds. Aust Vet J. 2017;95:26-32.15.
3. McMichael M, Smith S, Galligan A, Swanson K, Fan T. Effect of leukoreduction on transfusion-induced inflammation in dogs. J Vet Intern Med. 2010;24:1131-1137.

Evaluation of the utility and accuracy of body fluids containing red blood cells to determine canine and feline blood type

Marta Garcia-Arce, Craig R. Breheny, Alisdair M. Boag and Efa A. Llewellyn



Red blood cell transfusion can be lifesaving for critically ill patients with severe anaemia. Dog erythrocyte antigen 1 blood typing for recipient dogs and A/B typing for recipient cats are recommended prior to blood product administration in order to avoid acute haemolytic transfusion reactions and to optimize RBC survival.

Several methods are used to identify canine and feline blood types including point-of-care assays such as the immunochromatographic cartridge (ICC). Although only a small amount of blood is needed to obtain a patient's blood type using the ICC, it may not always be possible to obtain a sample via venepuncture (e.g. severe anaemia, small patient size, unstable patients where venepuncture could cause stress and decompensation) but a sanguineous or serosanguineous body fluid (SBF) may be available (e.g. surplus effusion from abdominocentesis, thoracocentesis, and pericardiocentesis).

This prospective study included 30 dogs and 8 cats which had a blood type test performed utilising blood from a peripheral sample and a SBF (e.g., peritoneal, pleural, or pericardial effusion, haematuria, epistaxis, liquid haemorrhagic faeces). No type B cats were available to be included in the study. Median PCV was 34% (range: 14%–66%) and 28% (range: 14%– 48%) for dogs and cats, respectively. Reference blood types for dogs were as follows: 14 of 30 DEA 1 negative, 9 of 30 DEA 1 positive, and 7 of 30 DEA 1 weak positive. Median PCV of SBF was 6% (range: 0.5%–70%) and 9.5% (range: 0.5%–19%) for dogs and cats, respectively. When the SBF blood type was compared to the blood type obtained using peripheral blood, concordant results were obtained for 13/ 14 DEA 1 negative dogs, 4/10 DEA 1 positive dogs and 4/6 DEA 1 weak positive dogs. Six DEA 1 positive dogs were incorrectly classified as DEA 1 weak positive by the SBF blood type and 2 DEA 1 weak positive dogs were classified as being DEA 1 negative by the SBF blood type.

All SBFs with discordant peripheral blood type to fluid blood type results had a PCV equal to or below 2%. Three canine SBF samples with low PCV and discordant results between peripheral blood type and SBF blood type were centrifuged, and a concentrated fluid sample was obtained. The PCVs obtained after concentrating the samples were all at least 8%. All concentrated SBFs were retyped and subsequently the SBF blood type matched the peripheral blood type.

In this study, body fluids containing RBCs successfully determined the blood type of dogs and type A cats by use of a species-specific ICC. Although matching blood type results were obtained for all the cats independently of the SBF PCV, some canine fluid samples with a PCV equal to or below 2% gave discordant results. However, following centrifugation to form a concentrated sample, concordant results were obtained.

To Crossmatch or not to Crossmatch?

June 16, 2023 6:00 pm

RSVP is OPEN at avhtm.org

There's an exciting lineup of Hematology / Transfusion-related topics at the ACVIM Forum

AVHTM Sessions
Friday, June 16, 2023

8:00 – 9:00 AM
The Future of Transfusion Medicine: Platelet Particles, Synthetic Blood
Erin Long Mays

9:15 – 10:15 AM
Anemias Caused by Hereditary Erythrocytic Disorders
Urs Giger

11:00 AM – 12:00 PM
Crossmatching Controversies
Marie-Claude Blais

On demand:
Immune Thrombocytopenia: Lessons from Human Medicine
James Bussel, MD

ePoster Presentations

Defining the Platelet Transcriptome in Dogs – Jennifer Weng

Comparison of C-reactive Protein Measurement on Three Assays and Following Storage – Amanda Garrick

Validation of the Calibrated Automated Thrombogram Using Low Plasma Volumes in Dogs – Erin Phillips

Effectiveness of Clopidogrel in Preventing Post-operative Hypercoagulability in Dogs Undergoing Splenectomy for Splenic Masses – Joong-Hyun Song

Assessing the Reliability of Blood Samples Collected from Peripheral Intravenous Catheters – Chia-Chen Wu

Oral Hematology Abstracts
Thursday, June 15, 2023

4:30 – 4:45 PM
HM01 - Sample Collection Effect on Canine Fecal Occult Blood Testing and Utility of Hemoglobin Immunochemical Tests
Kelly Chappell

4:45 – 5:00 PM
HM02 - Leukocyte and Platelet Ratios in Dogs Diagnosed with Non-associative Immune-mediated Hemolytic Anemia
Antoine Duclos

5:00 – 5:15 PM
HM03 - Neutrophil-lymphocyte Ratio, Platelet-lymphocyte Ratio and Mean Platelet Volume as Prognostic Biomarkers in Critically Ill Dogs
Francisco De Membiela

5:15 – 5:30 PM
HM04 - β1-tubulin mutations in non-Cavalier King Charles Spaniel dogs with macrothrombocytopenia
Elizabeth A. Luciani

5:30 – 5:45 PM
HM05 - Red Blood Cell Indices Performance to Detect Reticulocytosis in Anemic and Non-anemic Dogs in Taiwan
Kimberly S. Yore

5:45 – 6:00 PM
HM06 - Heparin Induced VCM Tracing Changes Compared to aPTT and Anti-Xa Activity in ex-vivo Canine Blood
Gina K. Dinallo

6:00 – 7:00 PM
ACVIM Meet & Greet Wine & Cheese Party

More Hematology / Transfusion-related topics at ACVIM

Other Presentations of Interest

On Demand

Thrombolysis in Acute Feline Aortic Thromboembolism
Julien Guillaumin

Wednesday June 14th, 2023

8:00 – 9:15 AM
Opening Lecture: Ethical and Legal Implications of A.I. in Veterinary Medicine
Eli B. Cohen

9:30 – 10:30 AM SOTA:
The Future of RNA and DNA Vaccines in Veterinary Medicine
Deborah H. Fuller

Thursday June 15th, 2023

10:00 – 11:00 AM
Clinical Applications of Immunothrombosis and 'Omics in Sepsis
Robert Goggs

11:15 – 12:15 PM
Neutrophil Extracellular Traps as Novel Treatment Targets in Infectious and inflammatory disease. Kandace Gollomp, MD

11:15 AM – 12:15 PM
Selecting a Targeted Therapeutic based on Molecular Diagnostics: Pharmacologic and Clinical Path Factors
G. Sylvester Price et al.

1:45 – 2:45 PM
Consensus Statement: Leptospirosis: Diagnosis, Epidemiology, Treatment, and Prevention
Jane E. Sykes et al

1:45 – 2:45 PM
Consensus Statement: Controlling Zoonotic Infections in Veterinary Personnel
Brandy A. Burgess et al

3:00 – 3:30 PM
Evaluation of Hematologic Parameters in Dogs with Epilepsy
Yoonhoi Koo

Friday, June 16th, 2023

2:45 – 3:45 PM
Histiocytic Destruction of Red Blood Cells in the Bone Marrow: A Case-Based Approach
Joanne Messick

Saturday, June 17th, 2023

11:30 AM – 12:30 PM
Acute Traumatic Coagulopathy: ATC is not DIC
Lori Waddell

Wellbeing Presentations

by Marie K. Holowaychuk, AVHTM member

Thursday, June 15th, 2023

4:05 – 4:30 PM
Combating Perfectionism

Friday, June 16th, 2023

12:15 – 1:20 PM
Work-life Balance, Blend, or Bleed:
Which Strategy Works for Veterinary Specialists?

4:30 – 6:00 PM
Workshop: Put on Your Own Oxygen Mask First:
Self-care for Specialty Teams

Special thank you to Urs Giger for compiling the ACVIM Forum topic information!

Recently Published Articles

- Large Animal Models for Simulating Physiology of Transfusion of Red Cell Concentrates-A Scoping Review of The Literature. Berndt M, Buttenberg M, Graw JA.Medicina (Kaunas). 2022 Nov 27;58(12):1735. doi: 10.3390/medicina58121735.
- Incidence of acute haemolysis in cats receiving canine packed red blood cells (xenotransfusions). Tinson E, Talbot CT, Humm K.J Feline Med Surg. 2022 Dec;24(12):e628-e635. doi: 10.1177/1098612X221140152.
- Production and characterization of a murine anti-dal monoclonal antibody for blood typing in dogs. Corrales Mesa CL, Gottschalk M, Lacouture S, Blais MC.Vet Immunol Immunopathol. 2022 Dec;254:110516. doi: 10.1016/j.vetimm.2022.110516.
- Alloimmunization in dogs after transfusion: A serial cross-match study. Herter L, Weingart C, Merten N, Bock N, Merle R, Kohn B.J Vet Intern Med. 2022 Sep;36(5):1660-1668. doi: 10.1111/jvim.16521.
- Letter: Crossmatch: Alloimmunization versus unspecific agglutination reactions? Urs Giger [1] J Vet Intern Med. 2023 Jan;37(1):10-11. DOI: 10.1111/jvim.16626
- Response to letter regarding "Alloimmunization in dogs after transfusion: A serial cross-match study". Herter L, Weingart C, Merten N, Bock N, Merle R, Kohn B.J Vet Intern Med. 2023 Jan;37(1):10-11. doi: 10.1111/jvim.16628.
- Laboratory Testing in Transfusion Medicine. Wardrop KJ, Davidow EB.Vet Clin North Am Small Anim Pract. 2023 Jan;53(1):265-278. doi: 10.1016/j.cvsm.2022.08.003.
- Effect of donor blood storage on gel column crossmatch in dogs. Thomas-Hollands A, Hess RS, Weinstein NM, Marryott K, Fromm S, Chappini NA, Callan MB.Vet Clin Pathol. 2023 Mar;52(1):30-37. doi: 10.1111/vcp.13188.
- Evaluation of the utility and accuracy of body fluids containing red blood cells to determine canine and feline blood types. Garcia-Arce M, Breheny CR, Boag AM, Llewellyn EA.J Vet Emerg Crit Care (San Antonio). 2023 Jan;33(1):47-51. doi: 10.1111/vec.13259.
- Acute kidney injury from presumptive intramural ureteral hemorrhage secondary to diphacinone rodenticide exposure in a dog. Oliver N, Rizzo K, Press S, Istvan S.J Vet Emerg Crit Care (San Antonio). 2023 Jan;33(1):112-117. doi: 10.1111/vec.13256.
- Successful treatment of coagulation disorders and hypoalbuminaemia in a puppy with Infectious Canine Hepatitis. Polovitzer J, Guija-De-Arespacochaga A, Auer A, Künzel F.Tierarztl Prax Ausg K Kleintiere Heimtiere. 2022 Aug;50(4):302-307. doi: 10.1055/a-1907-0877.
- Ex vivo evaluation of a novel cell salvage device to recover canine erythrocytes. Kalmukov IA, Galliano A, Godolphin J, Ferreira R, Cardoso I, Norgate DJ, Bacon NJ.Vet Surg. 2022 Nov;51(8):1223-1230. doi: 10.1111/vsu.13875.
- Epidemiology of severe trauma in cats: An ACVECC VetCOT registry study. Lee JA, Huang CM, Hall KE.J Vet Emerg Crit Care (San Antonio). 2022 Nov;32(6):705-713. doi: 10.1111/vec.13229.
- Large-Scale Polymorphism Analysis of Dog Leukocyte Antigen Class I and Class II Genes (DLA-88, DLA-12/88L and DLA-DRB1) and Comparison of the Haplotype Diversity between Breeds in Japan. Miyamae J, Okano M, Katakura F, Kulski JK, Moritomo T, Shiina T.Cells. 2023 Mar 6;12(5):809. doi: 10.3390/cells12050809.

Recently Published Articles - continued

- Molecular evidence of Ehrlichia canis, associated risk factors and hematobiochemical analysis in client owned and shelter cats of Pakistan. Abbas SN, Ijaz M, Abbas RZ, Saleem MH, Mahmood AK.Comp Immunol Microbiol Infect Dis. 2023 Mar;94:101959. doi: 10.1016/j.cimid.2023.101959.
- Haematological indices and immune response profiles in dogs naturally infected and co-infected with Dirofilaria repens and Babesia canis. Wężyk D, Romanczuk K, Rodo A, Kavalevich D, Bajer A.Sci Rep. 2023 Feb 4;13(1):2028. doi: 10.1038/s41598-023-29011-2.
- Simple and rapid detection of severe fever with thrombocytopenia syndrome virus in cats by reverse transcription-loop-mediated isothermal amplification (RT-LAMP) assay using a dried reagent. Ishijima K, Yokono K, Park E, Taira M, Tatemoto K, Kuroda Y, Mendoza MV, Inoue Y, Harada M, Matsuu A, Morikawa S, Fukushi S, Maeda K.J Vet Med Sci. 2023 Mar 1;85(3):329-333. doi: 10.1292/jvms.22-0523.
- Inflammatory phenotype, clinicopathologic variables, and effects of long-term methylene blue in dogs with hereditary methemoglobinemia caused by cytochrome b5 reductase deficiency. Jaffey JA, Wycislo KL.Am J Vet Res. 2023 Jan 19;84(2):ajvr.22.09.0155. doi: 10.2460/ajvr.22.09.0155.
- Clinical and Clinicopathologic Discriminators Between Canine Acute Monocytic Ehrlichiosis and Primary Immune Thrombocytopenia. Christodoulou V, Meletis E, Kostoulas P, Theodorou K, Saridomichelakis EN, Koutinas C, Mylonakis ME.Top Companion Anim Med. 2023 Jan-Feb;52:100750
- Evaluation of the neutrophil-to-lymphocyte and platelet-to-lymphocyte ratios in critically ill dogs. Dourmashkin LH, Lyons B, Hess RS, Walsh K, Silverstein DC.J Vet Emerg Crit Care (San Antonio). 2023 Jan;33 (1):52-58. doi: 10.1111/vec.13269.
- Effects of time delay and blood storage methods on analysis of canine venous blood samples with an Element point-of-care analyzer. Rincon AA, Wurlod VA, Liu CC, Smith MR.Vet Clin Pathol. 2023 Mar;52(1):22 -29. doi: 10.1111/vcp.13177.
- An investigation into an outbreak of pancytopenia in cats in the United Kingdom. Glanemann B, Humm K, Pegram C, Chan DL.J Vet Intern Med. 2023 Jan;37(1):117-125. doi: 10.1111/jvim.16615.
- Clinical and clinicopathological features and outcomes of cats with suspected dietary induced pancytopenia. Glanemann B, Humm K, Abreu M, Aspinall S, Buckeridge D, Carveth H, Darcy H, Florey J, Frowde P, Gajanayake I, Green K, Holmes E, Hrovat A, Jasensky AK, Jones BA, Lantzaki V, Lo EJ, MacDonald K, O'Brien K, Suárez-Bonnet A, Van den Steen N, Szladovits B, Willems A, Wilson H.J Vet Intern Med. 2023 Jan;37 (1):126-132. doi: 10.1111/jvim.
- EHBP1L1 Frameshift Deletion in English Springer Spaniel Dogs with Dyserythropoietic Anemia and Myopathy Syndrome (DAMS) or Neonatal Losses. Østergård Jensen S, Christen M, Rondahl V, Holland CT, Jagannathan V, Leeb T, Giger U. Genes. 2022 Aug 26;13(9):1533. PMID: 36140701; PMCID: PMC9498568.
- Methemoglobinemia, Increased Deformability and Reduced Membrane Stability of Red Blood Cells in a Cat with a CYB5R3 Splice Defect. Cells 2023, 12, 991. Jenni, S.; Ludwig-Peisker, O.; Jagannathan, V.; Lapsina, S.; Stirn, M.; Hofmann-Lehmann, R.; Bogdanov, N.; Schetle, N.; Giger, U.; Leeb, T.; Bogdanova, A.

AVHTM
ASSOCIATION OF VETERINARY HEMATOLOGY AND TRANSFUSION MEDICINE

We're on the web!

www.avhtm.org

AVHTM

PO Box 1234
Sahuarita AZ 85629-1004

AHVTM is an IRS approved 501(c)(3) nonprofit professional association composed of veterinarians, hematologists, academics, veterinary technicians, blood bankers, and interested public who desire to further scientific advances in transfusion medicine and veterinary hematology.

We engage in veterinary research, promote industry standards, develop guidelines for canine and feline blood collection and processing, and publish scientific research in peer-reviewed publications.

Visit us online to learn more about AVHTM!

MEMBERSHIP BENEFITS

As an AVHTM member, you are eligible for the following:

- Reduced IVECCS registration fee (veterinarians save $100 and technicians save $25!)
- Access the a "Members Only" section of the AVHTM website, which includes access to:
  - Other AVHTM profiles
  - PubMed articles
  - Forum for posting questions, cases, and research
- Ability to ask and answer questions posted to the AVHTM members-only Google group.

Please feel welcome to share this newsletter with interested colleagues and encourage them to become an AVHTM member!