The Corner Informer

The Newsletter of The Southeastern Michigan Veterinary Medical Association

Volume 24 Issue 4 December 2018

Our President's Address

Happy Holidays everyone!

Hope these next few months are safe and joyous to all.

Norman Bayne

I am going to write about something near and dear to my heart this month - how we treat our friends, relatives, coworkers, and acquaintances. My mother always impressed upon our family how you treat others is vital. Maybe vital to your success in life. She borrowed a quote from Maya Angelou that goes like this...."People will forget what you said, people will forget what you did, but people will never forget how you made them feel."How true that is indeed.

This is the thing I remember best from growing up with my mother. Doesn't everyone have a burning desire to feel special? I think so. Let me ask a question....Who is the most important person in a veterinary clinic? A lot of veterinarians will stand up and say, the veterinarian is the most important. I truly believe the most important person in a veterinary clinic is the CLIENT! They are the ones that make all the decisions and enable your practice to be a success. It goes a long way when everyone in the clinic makes the client feel special. How special is it when you greet the client with a huge smile and a kind greeting? Or when you give another client a firm hug during a tender moment?

I will go so far to say that not only does the recipient of this kind treatment love it; you will love it too. It makes everyone feel great and gives a warm feeling in our hearts. The world out there sure can use some kind words and gentle treatment to our fellow men and women, don't you agree?

This also transcends to the animals we treat. By approaching the next dog or cat with a smile on your face and in your heart, you can melt even the hardest patient many times. Many of the patients we see in the exam room are terrified. Not all, by any means. A huge percentage are however. A methodical approach with a positive mindset goes a long way for sure.

Try doing this today and tomorrow with everyone you meet. It might just make for a very pleasant day for you and everyone around you.

So during the hustle and bustle, the stress, tears and fears of the coming Holiday Season, share just an ounce of extra effort to make others feel special. It will make both their day and yours.

– *Norm*

Southeastern Michigan Veterinary Medical Association

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Barb Locricchio
Administrative Secretary

SEMVMA Veterinary Continuing Education Program

02/27/2019 – Dr. Mark Smith: Dentistry
Sponsored by Patterson Lab & Virbac

03/27/2019 – Dr. Tamara Grubb: Anesthesia & Pain Management
Sponsored by Aratana Therapeutics

SEMVMA Technician Continuing Education Program

02/27/2019 – Melissa Spooner, LVT, VTS (Behavior), KPA-CTP: Behavior

03/27/2019 – Dr. Tamara Grubb: Pain Management

For each SEMVMA member in your practice, one technician or staff member can attend each of the seminars at no expense. The cost for additional staff members or for the staff of non-SEMVMA members is our regular charge of $35. You must RSVP to ensure a meal and proceedings.

Seminars will be held at the Management Education Center

Management Education Center
811 West Square Lake Road
Troy, MI
(248) 879-2456
http://www.mectroy.com/

For more details, please visit our website at www.semvma.vet.

Member Spotlight

Drs. **Heather Robertson**, **Jill Duncan**, **Shelby Motoligin**, **John Krieger** and **Dan Hughes**, all of **Animal Emergency Center** just enjoyed a great day of FUN in Hell, Michigan. They ran the Dances with Dirt 100K race. Each ran 10 to 15 miles and it took a little over 10 hours to complete. It was a beautiful day for walking or climbing up super steep hills, running through the mud that went up to your thighs and crossing the river several times. Fun was had by all. A few pairs of shoes met their demise. No one broke anything and no poison ivy rashes have been discovered thus far. Doesn't that sound like fun! Please look for TEAM AEC at other races throughout the year.

Dr. **Tari Kern** and the team of **Pawsitive Steps Rehabilitation & Sports Medicine** are pleased to announce that Dr. **Nicole Nelson** has joined the practice. Dr. Nelson is a 2018 MSU, CVM graduate who discovered her passion for rehabilitation early. She is certified in rehabilitation and medical acupuncture.

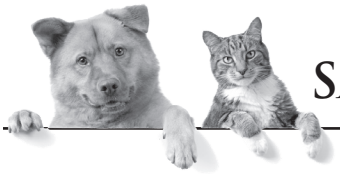
WE WANT TO HEAR FROM YOU! Our goal of this section is to let members know what is occurring in our lives outside of veterinary medicine. Please notify us of your recent family additions, graduations, honors, achievements, fund raising activities, civic group associations, outdoor activities and the like. Please call us at 248-651-6332 or email us at adminsemvma@semvma.com

Membership Committee Report

Please join us in welcoming the following new members to SEMVMA…

Dr. Abby Dunlap, (Ohio State, 2007) Cherry Hill Animal Clinic, Westland, MI
Dr. Janelle Konstam, (MSU, 1979) North Main Animal Hospital, Royal Oak, MI
Dr. Jessica Anderson, (Ross University, 2018) North Main Animal Hospital, Royal Oak, MI
Dr. Lauren Switzer, (MSU, 2018) Southpointe Veterinary Hospital, Allen Park, MI
Dr. Martin Mlynarek, (MSU, 1984) Veterinary Emergency Services, Plymouth, MI
Dr. Kayla Wade, (MSU, 2018) Bay Animal Hospital, Essexville, MI
Dr. Erinn Williams, (MSU, 2006) Banfield The Pet Hospital, Chesterfield, MI
Dr. Zoe Launcelott, (Atlantic Veterinary College, 2013) Oakland Veterinary Referral Services, Bloomfield Hills, MI
Dr. Jacklynn Holifield, (MSU, 2017) Oakland Veterinary Referral Services, Bloomfield Hills, MI
Dr. Kaitlin Lonc, (MSU, 2014) Oakland Veterinary Referral Services, Bloomfield Hills, MI

The 2018 membership committee is composed of 3 members: Tari Kern, DVM, (Chair) (tkerndvm@yahoo.com), Tim Duncan, DVM, (duncan@oaklandanimal.com), and Steve Bailey, DVM (bailey@exclusivelycatsvet.com). Please feel free to contact any of us if you have any questions. If you know of a veterinarian in the area who is not a member but may be interested in joining, please contact any member of the membership committee of the SEMVMA office and we will be happy to send them information.



Save These Dates! Upcoming Activities

JANUARY 9 2019

SEMVMA Membership Celebration
Join us for dinner as we appoint our new board and council members.
The Townsend Hotel, Birmingham, MI at 6:00 PM
This event is free to attend for members and a guest.

February 9 2019

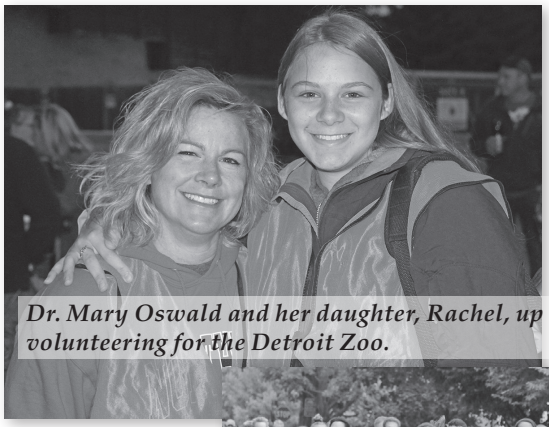
Beginner/Intermediate Ultrasound Lab
Macomb Community College 9 AM - 5 PM
with Anthony Pease, DVM, DACVR
See the insert for more details!

May 1 2019

SEMVMA Practice Management Session
Finding Your Unique Path Toward Sustainability in Veterinary Medicine
with Dr. Kimberly Pope-Robinson, 1 Life Connected
www.1lifecc.com

Run Wild

Run Wild for the Detroit Zoo 2018 was held on Sunday, September 9th. Nearly 4,000 runners and walkers laced up their running shoes to participate in the 5K, 10K, 5K+10K combo, and a 1.5 mile Fun Walk. Participants set a record, raising $100,00 in net revenue and making it the most successful Run Wild in its more than 20 year history. This is the first time that the 5K and 10K races ended inside the zoo. The annual event raises funds for the Ruth Roby Glancy Animal Health Complex and veterinary care for the animals at the Detroit Zoo and Belle Isle Nature Center.



Dr. Mary Oswald and her daughter, Rachel, up at 6 am, volunteering for the Detroit Zoo.

Dr. Norman Bayne with his technician, Donna, and her granddaughter, Alyssa, course marshall volunteers.

10K runners in Huntington Woods before heading back into the zoo

SEMVMA Academy

The Southeastern Michigan Veterinary Medical Association developed the SEMVMA Academy to celebrate the commitment of veterinarians to the continual improvement of their professional knowledge and competence achieved through continuing education. There are many reasons to apply for Academy membership. Members are listed on the SEMVMA Academy web page for the current year and there is a link for members of previous years. The Academy web page listings show up on web searches when clients search an Academy member's name. Membership in the academy is free to members, and the application process is simple. To qualify, you must demonstrate 50 hours of CE during the prior year; this can include web based learning, self-study, and more (see SEMVMA.com/academy for more information). We would like to see every member's name on this list. Visit our website at www.semvma.com/academy to download your application. Applications must be submitted by February 15, 2019.

-2017 Academy Members-

Steve Bailey, DVM, DABVP – Exclusively Cats Veterinary Hospital
Julie Cappel, DVM – Warren Woods Veterinary Hospital
Michelle Carter, DVM – Gasow Veterinary Hospital
Grace Chang, DVM – Southfield Veterinary Hospital
Kathy Christy, DVM – Oakland Hills Veterinary Hospital
Jayme Cicchelli, DVM – Warren Woods Veterinary Hospital
Jill Crisp, DVM – VCA Beech Road Animal Hospital
Lauren Demos, DVM, Hons, BSc – Exclusively Cats Veterinary Hospital
Melissa Doolin, DVM – Serenity Animal Hospital
Ashley Elzerman, DVM, MS – Oakland Veterinary Referral Services
Marj Field, DVM – Furever Friends Veterinary Services
Melissa Holahan, DVM, DACVECC – Oakland Veterinary Referral Services
Tari Kern, DVM, CCRP, CVMA, CVSMT – Pawsitive Steps Rehabilitation & Sports Medicine
Nathan Kleefisch, DVM – Animal Emergency Center
Laura Kulinski Masell, DVM – Levan Road Veterinary Hospital
Molly Lynch, DVM – Country Cat Veterinary Hospital
Michelle Meyer, DVM – Serenity Animal Hospital
Karen Michalski, DVM – Serenity Animal Hospital
Kathy Murphy, DVM – Nucci Veterinary Clinic
John Parker, DVM – Briarpointe Veterinary Hospital
Heather Robertson, DVM – Animal Emergency Center
Julie Sherman, DVM – Serenity Animal Hospital
Dave Smith, DVM – Leader Dogs for The Blind
Sandy Smith, DVM – Animal Health Clinic
Emily Socks, DVM – Oakland Hills Veterinary Hospital
Stephen Steep, DVM – Oxford Veterinary Hospital
Laura Van de Grift, DVM - Warren Woods Veterinary Hospital
Kelly Wilson, DVM – Leader Dogs for The Blind
Caralyn Zalewski, DVM – Forest Veterinary Clinic
Andrea Zelten, DVM – Jeffrey Animal Hospital

47th Annual Holiday Party for the SE Michigan Veterinary Community

Tari Kern, DVM, CCRP, CVMA, CVSMT
Holiday Party Coordinator

The annual holiday festivities went off with a bang on November 17th at the San Marino Club in Troy without a snowstorm or sleet in the forecast! This longstanding tradition to support camaraderie and thanksgiving has become a staple within the southeastern Michigan veterinary community for 47 years, held each year by the Macomb County Veterinary Association with generous support of Southeastern Michigan Veterinary Medical Association. The evening started with hors d'oeuvres and cocktails as very well-dressed veterinary colleagues, staff and guests arrived for the celebration. A plated dinner, followed by a charity raffle, led up to dancing and kicking up the heels a bit until midnight.

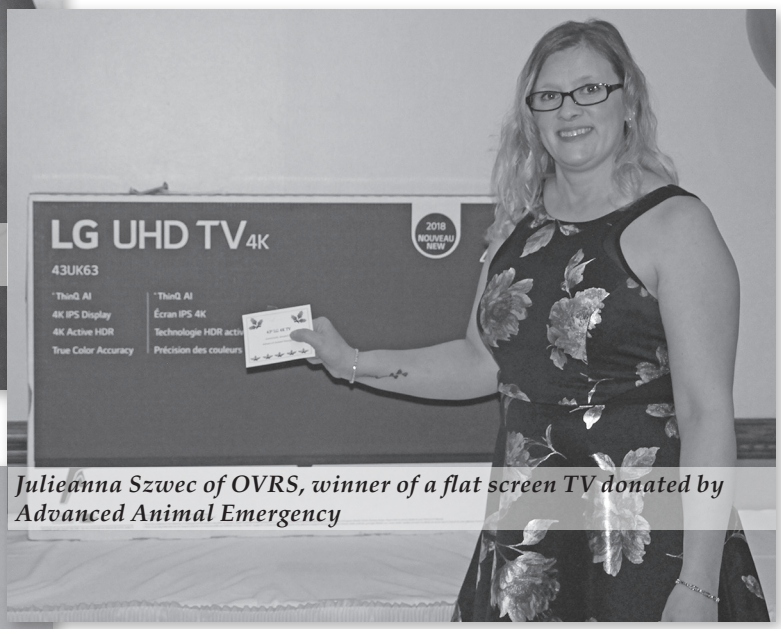
A wide selection of fabulous prizes highlighted the evening's annual charity raffle. Each raffle prize was generously donated by our familiar veterinary industry representatives and local businesses below. The Michigan State Animal Response Team (MiSART) has been the recipient of the raffle proceeds over the last several years. MiSART receives little financial support overall, so our annual charity fundraiser continues to be their largest form of support for their work. Dr. Gail Phelps represented MiSART this year and provided an update for party guests on the current status of the group. Dr. Tari Kern and the staff of Pawsitive Steps Rehabilitation & Sports Medicine kept the raffle moving along through the long line of donated prizes. Dr. Grace Chang took photographs throughout the night to commemorate the occasion. We are pleased to announce that MiSART received $3,800 in proceeds from the event this year.

The dance floor, bar and photo booth were busy until the end of the night. Yard games came inside again this year to add a little fun competition for the non-dancers in the group to enjoy! If you didn't make it this year, watch for it next fall!

A huge thank you goes out to all of the veterinary offices and companies who donated items to the charity raffle: Advanced Animal Emergency, Affiliated Veterinary Emergency, Animal Emergency Center, Animal Surgical Center of Michigan, Antech Diagnostics, Aratana Therapeutics, Blue Pearl Veterinary Partners, Boehringer Ingelheim/Merial, Faithful Companion, Henry Schein Animal Health, Heska/Cuattro, Macomb Community College Veterinary Technology Program, Macomb County Veterinary Association, MedVet Commerce (previously Animal Neurology Center), Merck Animal Health, Oakland Veterinary Referral Services, Partridge Enterprises, Patterson Veterinary Supply, Ralph Wilson Agency, Pawsitive Steps Rehabilitation & Sports Medicine, and Southeastern Michigan Veterinary Medical Association. When you see their representatives, please pass along a thank you for their continued support of this wonderful charity event.

Kim Schur, the lucky winner of a Karaoke machine donated by the Macomb County Veterinary Association.

Dr. Michael Wolf, MedVet, presents donated gift basket to winner, Melanie Silva of MedVet.



Julieanna Szwec of OVRS, winner of a flat screen TV donated by Advanced Animal Emergency

Jim Thompson, OVRS, presents the Roomba to winner Sasha Oza of Harvey Animal Hospital

Colleagues enjoying a night of dancing.

FEEDING THE VOMITING PATIENT

Melissa L. Holahan, DVM, DACVECC
Oakland Veterinary Referral Services, Bloomfield Hills, MI, USA

The diagnostic approach to the vomiting patient is well beyond the scope of these proceedings. However, regardless of the underlying disease (e.g. severe pancreatitis, acute kidney injury, hepatobiliary disease, parvoviral enteritis, etc.), the approach to feeding these patients is identical in nature. In general, goals of therapy include (1) addressing the underlying cause if possible (i.e. foreign body obstruction), (2) correcting fluid, electrolyte, and acid-base abnormalities (3) controlling vomiting and most importantly (4) providing adequate nutritional support. We will be focusing on antiemetics and various adjunct therapies and providing adequate nutritional support.

Antiemetics

Antiemetic therapy is warranted (1) when the vomiting is frequent or severe enough to make the animal uncomfortable; (2) persistent vomiting places the animal at risk for aspiration pneumonia or acid-base and electrolyte disturbances; and (3) the animal is not suffering from gastrointestinal (GI) obstruction. Efforts should be made to treat nausea and vomiting quickly as earlier voluntary food intake is more likely if nausea is controlled. Maropitant citrate (Cerenia®, Zoetis, Florham Park, NJ) is the only veterinary FDA-approved antiemetic for use in dogs (>8 weeks old) and cats (>16 weeks old). Maropitant is a neurokinin-1 (NK1) receptor antagonist that acts in the central nervous system by inhibiting Substance P, the key neurotransmitter involved in vomiting. Maropitant suppresses both peripheral & centrally mediated emesis. It has also been shown to lower MAC requirements of sevoflurane and reduces visceral pain in dogs. Maropitant does not affect gastric emptying times or intestinal transit times. Subcutaneous (SC) injection is FDA-approved for the prevention & treatment of acute vomiting (dogs) and for the treatment of vomiting (cats). However, pharmacokinetic studies evaluating the safety of intravenous (IV) administration at a dosage of 1-2 mg/kg for 2 consecutive days in healthy dogs found no adverse side effects. The IV route may be considered in those patients were the SC route may be contraindicated (patients with a coagulopathy or thrombocytopenia). Though metoclopramide has been widely used in veterinary patients for its antiemetic and GI motility properties, its efficacy and safety in different species have not been evaluated in controlled studies. Metoclopramide's antiemetic effects are thought to be due to dopamine (D2) antagonism, which is likely why these effects are more pronounced in dogs. Gastric prokineitic effects can be seen in both species, however, the distal esophageal motility effects are greater in cats. Due to the lack of efficacy, Metoclopramide it is recommended as an adjunct therapy and not a single or first line drug. If vomiting persists, Ondansetron (Zofran), a 5-HT3 receptor antagonist can be added. Ondansetron's oral bioavailability is low, (32% vs. 75% in cats when given subcutaneously), therefore the SC and IV routes (in-hospital) are preferred. Dolasetron (Anzemet), another 5-HT3 receptor antagonist is often preferred over Ondansetron since it only requires once daily administration.

Anti-emetics – listed in order of preference for disease severity	
Drug	Commonly Used Dosage
Metoclopramide (Reglan)	1-2 mg/kg/24 hour CRI
Maropitant citrate (Cerenia)	1 mg/kg IV or SC Q24hr (Veterinary FDA approved) 2 mg/kg PO Q24hr (Veterinary FDA approved)
Dolasetron (Anzemet)	0.6-1 mg/kg IV, SC or PO q24hrs (extra-label)
Ondansetron (Zofran)	0.5-1 mg/kg IV, SC, IM or PO Q6-12hr (extra-label)

Promotility Agents

Several therapies may be used to help promote GI motility in those patients with reduced or absent GI motility (assessed by auscultation of the gut, persistent gastric distention, or abdominal ultrasound evidence). Remember that prokinetic drugs should not be given to patients unless a foreign body or gastric

obstruction has been ruled out. Metoclopramide (Hospira Inc., Lake Forest, IL) has variable promotility effects in cats and dogs. It has a short half-life (60–90 minutes) in dogs, and is not as effective at preventing vomiting in cats. It is best given as a constant rate infusion for maximal effect (1-2 mg/kg/day). Cisapride (Dogs: 0.5-1mg/kg PO q8-12hrs; Cats: 2.5-7.5mg PER CAT PO q8hrs) increases lower esophageal peristalsis and sphincter pressure and accelerates gastric emptying. Cisapride has been taken off the human market but is available at compounding pharmacies as both a tablet and suspension. The proposed mechanism of action is enhanced release of acetylcholine. Other prokinetic drugs that may be considered in severe cases of ileus or gastric atony include: Erythromycin and Bethanechol Chloride. By inducing antral contractions, gastric emptying is enhanced. Erythromycin (Dogs/Cats (extra-label): 0.5-1 mg/kg PO q8hrs) is a macrolide antibiotic that when used at sub-antimicrobial doses, mimics the effects of motilin (in cats) or 5-HT3 (suspected mechanism in dogs) and can stimulate GI motility. It has also been reported to increase lower esophageal pressure (in cats) and stimulate colonic activity (in dogs). Bethanechol (2.5 – 25mg PER dog PO q8hrs or 1.25 – 7.5mg PER cat PO q8hrs) directly stimulates the cholinergic receptors (primarily muscarinic activity). The pharmacologic effects include: increased esophageal peristalsis and lower esophageal sphincter tone, increased tone and peristaltic activity of the stomach and intestines, increased gastric and pancreatic secretions. While Lidocaine is an effective pro-kinetic agent in humans and horses (10-30mcg/kg/min), the pro-motility effects have not been studied in cats and dogs. Raniditine has not been shown to have an effect on GI transit times in research models.

Gastric Antacids

Gastric mucosal integrity can be compromised by a variety of mechanisms including GI hypoperfusion, decreased gastrin secretion associated with renal failure, and administration of anti-inflammatory medications. In addition, conditions resulting in increased endogenous cortisol release including hyperadrenocorticism and persistent critical illness have the potential to induce gastritis. Gastroprotectant therapy has become almost universal in the critical care setting despite a lack of efficacy partly due to the largely benign nature of therapy. Traditionally, H2-receptor antagonists (Famotidine, Ranitidine, Cimetidine) were the first line of antacid therapy but current research has proven them to be largely ineffective. The recent literature indicates that twice-daily administration of proton pump inhibitors (PPIs) is more efficacious at reducing gastric acid production in cats and dogs; if fact it's the only regimen that has even approached the therapeutic efficacy for acid-related disease when assessed by criteria used for people. The increasing availability and declining price of an injectable PPI, pantoprazole sodium (Protonix® 1mg/kg IV Q12 hours; Wyeth Pharmaceuticals Inc., Philadelphia, PA) coupled with strong evidence in both human and veterinary patients have made PPIs the first-line agent for GI protection in dogs and cats. Omeprazole is also available over the counter (Prilosec OTC®; Procter & Gamble, Cincinnati, OH), or as a paste and can be given at a dose of 1mg/kg PO Q12 hours (rounding up if needed). Based on current research, clients can use fractionated enteric-coated tablets (i.e. ¼ tablet) in cats for easy dosing. In people, H2-receptor antagonists are administered at night in conjunction with PPIs to help minimize nocturnal acid breakthrough. PPIs should be given approximately 30 minutes prior to a meal.

Analgesia Therapy

Pain is a common and often overlooked finding in the vomiting patient due to the GI pathology, spasm/cramping, and/or reflux esophagitis secondary to persistent vomiting/regurgitation. Pain inhibits GI motility due to stimulation of sympathetic innervation of the GI tract. Pain may be manifested as discomfort on abdominal palpation, decreased activity, altered mentation, changes in vital signs, and continued emesis. Pain control can improve patient comfort, decrease vomiting, and potentially decrease the length of hospitalization. Buprenorphine is effective for visceral and soft tissue pain, and is a good choice in patients with mild to moderate pain. Methadone, hydromorphone, and constant-rate infusions of fentanyl may be considered to ameliorate moderate to severe pain associated with GI diseases. Methadone appears to cause less sedation and less vomiting than other mu agonists. While, maropitant may have adjunct analgesic properties, it should not be used alone for pain management. Remember that while analgesia is often warranted in many vomiting patients, one should be conscious of the possible side effects and select the least potent option and proactively decrease analgesic therapy as the patient recuperates. Multimodal

analgesia including CRIs containing lidocaine and ketamine should be considered to maximize analgesia while decreasing the amount of opioids required as they can inhibit GI motility.

Nutritional Support

Once adequate perfusion has been reached (i.e patient is hemodynamically stable – adequate peripheral perfusion means adequate gut perfusion) the preferred route of nutrient administration is by oral or enteral feeding. Enteral feeding is the safest, simplest, and least expensive route and should be utilized whenever possible. In animals that are anorexic or hyporexic, enteral feeding can be accomplished by one of several techniques: voluntary consumption, coaxed feeding, appetite stimulation, or tube feeding.

Withholding food and water (NPO) while correcting dehydration can successfully manage most patients with acute, self-limiting vomiting. Animals with intractable vomiting should be held NPO until vomiting ceases for a 12-hour period. Afterwards, water and food can be slowly reintroduced. Feeding small meals frequently will minimize gastric distention and gastric acid secretion. For dogs, a digestible, bland diet that is high in carbohydrates but relatively restricted in protein and fat is ideal. In dogs, protein rich diets increase gastric acid secretion, and those high in fat can decrease gastric emptying, resulting in gastric distention. For dogs, cooked rice, cottage cheese, lean boiled ground beef, skinless chicken, pasta or potatoes are suitable for a short time period (e.g. 1-2 weeks) until their normal appetite returns. Dietary fat content appears to play a smaller role in gastric emptying in cats. Cats do not require a carbohydrate source and are best managed with a single-protein source such as cooked chicken breast. A large variety of commercially available intestinal bland diets exist for managing dogs and cats with acute gastritis.

Appetite stimulants are mainly utilized in patients with partial anorexia. Commonly used drugs include cyproheptadine (cats), and mirtazapine (dogs/cats). While appetite stimulants may be beneficial in certain patients, they should not be solely relied on for nutritional support and are only appropriate for a 24-48 hour period. Force-feeding is not recommended and should be discouraged, as this technique is stressful for the patient, can precipitate food aversion, and lead to aspiration pneumonia. It should therefore be abandoned in favor of tube-feeding techniques if voluntary food intake does not fulfill the patient's caloric requirements. If a patient continues to be anorexic or hyporexic after 48 hours of therapy, the clinician should proceed with placement of a feeding tube in order to provide the nutrition that the patient is desperately lacking. In some cases, feeding tube placement may be warranted at time of presentation or shortly thereafter based on history and clinical picture.

Providing Early Enteral Nutrition (EEN)

The beneficial effects derived from the nutritional support of diseased human patients and experimental animal models include enhanced immune function, wound repair, response to therapy, recovery time, and survival. Despite these benefits, veterinarians frequently ignore or delay the nutritional needs of sick animals. In addition, the nutritional needs of critical patients are largely forgotten due to the intense focus on life-threatening medical and surgical problems. The use of EEN is an inexpensive, practical, and beneficial procedure. EEN should be incorporated into the treatment plan of any sick or traumatized patients (within 24-48 hours of hospital admission) that have been anorectic or hyporexic for three or more days, or is not expected to consume full caloric intake in the next 48-72 hours. In addition, patients that are hypoalbuminemic or that have conditions requiring increased nutrient demands, such as extensive trauma or burns, conditions causing increased nutrient loss (excessive GI or renal protein loss) are viable candidates for nutritional support. Early postoperative feeding after abdominal surgery has been proven in people and dogs to be safe without increased GI morbidities or other postoperative complications. EEN proven benefits in people includes faster recovery of bowel function, lower rates of infectious complications, and shorter hospital stay. Initial veterinary studies have shown similar results.

An estimate of the animal's nutrient requirements is needed to determine the minimum amount of food necessary to sustain critical physiologic processes. The following linear formula can be used to calculate the patients resting energy requirements (RER) [RER (kcal/day) = (BWkg x 30) + 70] can be used for the majority of patients (body weight > 2kgs). The practice of adding an illness factor should be discouraged

because of the recognized risks of overfeeding critical ill patients (metabolic/GI complications and hepatic dysfunction). The RER should be viewed as an estimate and it should be recognized that the caloric requirements of sick animals might be above or below the calculated RER. Close observation of the patient's body weight changes, ongoing losses (diarrhea, vomiting, exudative wounds, or third-spacing of fluids) and physical examination findings (decreased subcutaneous fat stores, muscle wasting, presence of edema or ascites) will help determine whether to increase or decrease the patient's caloric intake above or below the calculated RER.

Naso-enteric feeding tubes (NFT), which include either nasoesophageal and nasogastric tubes, are among the easiest and least expensive forms of feeding tubes available for use. A detailed description of placement techniques will be provided in other proceedings. Polyvinylchloride feeding tubes are ideal as they are pliable, radio-opaque and well tolerated after placement for short-term use. Red-rubber feeding tubes are a viable alternative (esp. for neonates where a smaller diameter feeding tube is required), although they are typically more reactive with the nasal mucosa and the proximal port tends to break after a few days of wear and tear. The author favors nasogastric tubes, since they can be placed for both EN and for gastric decompression in cases of gastric atony or severe ileus, as seen with severe parvoviral enteritis and pancreatitis cases. Gastric decompression of both air and residual fluid, if indicated, can be beneficial to the patient in a variety of settings: prior to anesthesia induction in patients with severe gastric distention (air or fluid), intra-operative placement, in the immediate post-operative period and in the first 24 hours of initial EN. The removal of residual fluid/air can decrease gastric distention, making the patient more comfortable, and decrease risk of emesis. If the gastric residual volume (GVR) is minimal the fluid should be slowly (over 5-10 minutes) delivered back to the patient. Patients with high GVRs (> 10mL/kg of gastric residual fluid) may benefit from removal (discard) of stomach contents. However, at this time there is no evidence to support that high GVRs correlate with a higher incidence of vomiting, regurgitation or aspiration pneumonia in veterinary patients. The volume of fluid should be quantified to help monitor fluid balance (ins/outs) and electrolytes should be carefully monitored if gastric secretions are being removed along with the introduced food/fluid.

Microenteral nutrition (microEN) can be accomplished by a low, continuous rate infusion of an electrolyte solution, oral recuperation fluid (containing nutrients and amino acids) or complete and balanced liquid diet. Feedings can be started at rates of 0.25–0.5 ml/kg/h (or 1/8th RER) to assess the patient's feeding tolerance. If tolerated, rates can be increased to 1–2 ml/kg/h (or by 1/8th RER every 12-24 hours). Candidates for microEN or "trickle feeding" includes those patients that are actively vomiting or regurgitating despite appropriate therapy, and those early in recovery from severe GI disease or GI surgery. MicroEN is commonly delivered by NFTs.

Total parenteral nutrition (TPN) or partial parenteral nutrition (PPN) is the administration of complete or partial energy and protein by intravenous infusion. Specific indications for the use of parenteral feeding include intolerance of enteral feeding as manifested by protracted vomiting/regurgitation (failed attempts at tolerating EN over a 48 hour period), severe malabsorption, or risk of aspiration if the patient is fed via the GI tract. ProcalAmine 3%, a commercially available amino acid solution, can be delivered through a peripheral catheter at a maintenance fluid rate (2ml/kg/hr), and provides approximately 0.25kcals/mL. At this fluid rate the patient will receive approximately 30% of their RER. Therefore, it's important to note that ProcalAmine is not intended to provide a complete nutritional support and is typically used in conjunction with NGT feedings until the patient can tolerate 100% EN. ProcalAmine should be delivered through a dedicated IV line and crystalloid fluid requirements should be adjusted accordingly. TPN should be delivered through a dedicated port on a centrally placed catheter due to hypertonicity. TPN formulations are composed of the three basic components: amino acid solutions, lipid emulsions, and dextrose (+/-vitamin, electrolyte and mineral supplementation). These formulations should be mixed in a specific order, under aseptic conditions and by trained individuals. The author suggests seeking out a local compounding pharmacy to provide this service when necessary.

Adjunctive Treatment Modalities

In cases where vomiting/regurgitation is controlled, empirical administration of probiotics may be considered as an ancillary treatment. While, there is some limited evidence to support their use,

they have been shown them to be safe and well tolerated. Glutamine supplementation is a hot topic in veterinary nutrition. Glutamine is the preferred energy source in certain cells including enterocytes and is necessary for intestinal cell proliferation, intestinal fluid and electrolyte absorption, and response to growth factors. Glutamine deprivation can lead to enterocyte apoptosis. It is available as a powder and can be supplemented at a dose of 0.5 to 1 gram/kg/day (divided and given 2-3 times per a day or as a CRI). A fresh mixture should be prepared daily if mixed with water or food. Glutamine has been experimentally shown to decrease postoperative GI ileus in dogs. While there is little documentation for efficacy, adverse effects are unlikely. Acupuncture has been shown to improve gastric emptying in comparison with standard promotility drugs in people who are critical ill or develop postoperative gastroparesis syndrome after abdominal surgery. Acupoint stimulation, if available can be an inexpensive option with few side effects or contraindications. However, further studies regarding the benefits of these adjunct therapies in critically ill veterinary patients are warranted.

Conclusion

Adjusting a patients antiemetic therapies and EN is a very dynamic process. Close observation of the patient's body weight (weight changes often reflect fluid dynamics in the early period following injury), ongoing losses (diarrhea, vomiting, exudative wounds) and physical examination findings (decreased subcutaneous fat, muscle wasting, presence of edema or ascites) will help determine if the patient's caloric intake requires adjustment.

References available upon request.

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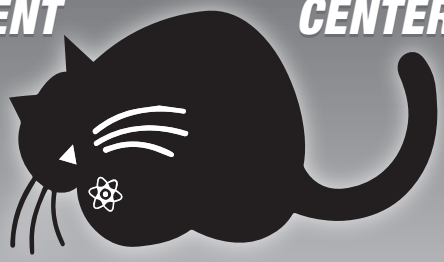

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NEWSLETTER ADVERTISEMENT POLICY

In order to preserve the educational and informative purpose of the SEMVMA newsletter, the SEMVMA council adopts the following policy regarding advertising. Ads should be submitted to Barb at adminsemvma@semvma.com

Practices or businesses with a common owner shall be treated as one business or practice for the purpose of this policy (referred to as "Common Owner Business or Practice"). A common owner is a person or entity which owns 5% or more of an entity or practice. Shareholders or sole proprietors of an entity or practice shall be considered an owner along with the entity that holds an interest in the business or practice.

Corporate ¼ page ads are limited to one business, owner or corporation for each issue of the SEMVMA newsletter. This is in the interest of having the newsletter inform the association and not overwhelm them with ads. The SEMVMA council may modify or waive the application of this policy on a case by case basis at the discretion of the council.

Ads will run only once unless a request is submitted to the Administrative Secretary to run longer. Classified ads are $15 for 60 words or less and $25 for 61–100 words. Corporate ¼ page ads are $135 per issue or $500 for four issues. Payment is due at the time of the initial ad placement.

SEMVMA Members interested in providing Relief Veterinary Services can advertise in the newsletter at no charge. The classified ads must follow the same guidelines regarding number of words and deadline restrictions as all other classified ads. If you are a SEMVMA member interested in placing a classified ad, please contact Barb at 888-SEMVMA-5 or www.adminsemvma@semvma.com.

Newsletters are published quarterly: on March 15th, June 15th, September 15th and December 15th. All ads should be submitted to the SEMVMA office by the 15th of the month preceding publication.

The Southeastern Michigan
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TO:

Southeastern Michigan Veterinary Medical Association 2019 Ballot

Southeastern Michigan Veterinary Medical Association members please complete the ballot and return to the SEMVMA office at 804 Spartan Drive, Rochester Hills, MI 48309. Ballots may also be faxed to (248) 651-6333 or scanned and emailed to: adminsemvma@semvma.com

Please return the ballot no later than December 31, 2018, 5:00 PM

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