AMVS Event Updates!

So far we have had a scorching summer! We hope all your companion animals are keeping cool and safe as we move into August. Last month's events were quite a success and we thank all of you who attended.

The artwalk of Longmont was our best kid centered event yet, lots of Longmont locals and four legged friends loved the "Make Your Own Bracelet and Matching Pet Collar" craft provided by AMVS. There was live music, face painting and art all around.

In addition to our regular ER hours, AMVS provides emergency and critical care services to your patients Fridays, all day CALL
303-678-8844

AMVS is: PACE certified, LEED certified, and
Upcoming Events!

Our next event is Saturday, August 18th at 9:00 am, AMVS will be at the Paws Across the Rockies Event at Stanley Park, in Estes Park CO.

Paws Across the Rockies is a National Cancer Foundation dog walk for a cure. Our very own Oncology Specialists Jim Perry, DVM, PhD, DACVIM will also be giving a small talk.

"Lace up your walking shoes, grab the leash and walk with your best friend around Lake Estes"

Upcoming CE's

AMVS and Pfizer Pharmaceuticals are teaming up to provide you, the vet with the ultimate outdoor CE experience:
The Outdoor CE in Lyons, CO which includes your choice of Mountain Biking, Hiking, Fishing and Road Biking!
For More Info Call 303.678.8844 and ask for Alyssa

Immune-Mediated Thrombocytopenia: Beyond Prednisone
By: Louisa Poon, DVM

Practice Points

- The various treatment options available in management of IMT in our veterinary patients, although most of which have not been investigated in clinical studies.
- In human patients with ITP, first-line therapies include corticosteroids, intravenous immunoglobulin, platelet transfusions, anti-D immunoglobulin, and vinca alkaloids.
- Many dogs with IMT are refractory to steroid-only therapy. Other adjunctive therapy might be helpful.
- Prognosis for dogs with both IMT and IMHA (Evans syndrome) is worse than for dogs with IMT alone.

Immune-mediated thrombocytopenia, IMT, is a fairly common cause of bleeding in small animals, especially in dogs. And like immune mediated hemolytic anemia, many different disease processes may initiate IMT. It may be a primary condition or secondary to known antigenic stimuli such as neoplasia, infectious diseases, or drugs. The ultimate goal of therapy of IMT is to minimize the risk of bleeding due to severe thrombocytopenia by increasing platelet count.

In human patients with ITP (immune thrombocytopenia), first line therapy includes corticosteroids, IV immunoglobulin, anti-D immunoglobulin, platelet transfusions and administration of vinca alkaloids such as
vincristine. How do these treatments translate into treatments for our veterinary patients with IMT?

Corticosteroids are the standard initial treatment for people with ITP as well as in veterinary patients. In veterinary patients, prednisolone and prednisone are used most frequently, although dexamethasone therapy has been reported as well. Comparison studies of different types or doses of corticosteroids in the management of IMT in veterinary patients have not been published.

Vincristine is the vinca alkaloid most commonly used in the dog. The vinca alkaloids have both mild immunosuppressive (impairment of MPS function, and inhibition of humoral and cell-mediated immunity) and thrombocytotic (stimulation of transient megakaryocyte platelet release) properties. Intravenous vinca alkaloids induce transient platelet number increases in many IMT patients: circulating platelet life-span may be prolonged following treatment, suggesting that the increased platelet number is due to decreased destruction as well as enhanced megakaryocyte platelet release. A prospective study comparing the use of prednisone and vincristine to prednisone alone in the treatment of primary IMT in dogs found a significantly more rapid increase in platelet numbers and a shortened duration of hospitalization of dogs treated with both medications (Rozanski et al., 2002). Vincristine 0.02mg/kg administered IV can be given once weekly. Administration should be discontinued once platelet count is >50,000ul. Vincristine is inexpensive and usually well tolerated by patients, however, it is extremely corrosive if extravasated, extra care must be taken during administration. There are also some concerns over the function of platelets produced in response to vincristine. In one study (Mackin et al. 1995) in vivo platelet function is not altered by vincristine in clinically normal dogs, whereas another study showed abnormal in vitro platelet function in dogs with lymphoma treated with vincristine (Grau-Basses et al. 2000). Platelet function in dogs with IMT receiving vincristine has not been studied.

In people, anti-D immunoglobulin is effective only in blood-type Rh D-positive non-splenectomized patients. The antibody binds to the erythrocyte D antigen, so that the antibody-bound erythrocytes are preferentially phagocytosed by the monocyte-macrophage phagocytic system, leaving the antibody-coated platelets alone. Main side effect of anti-D immunoglobulin therapy is hemolytic anemia. This therapy has not yet been used or studied in canine or feline IMT patients.

Human IV immunoglobulin (hIVIg) is a sterile immunoglobulin preparation that contains IgG and trace
amounts of IgM, IgA, CD4, CD8, and human leukocyte antigen molecules from a healthy human donor population. A prospective, randomized, double-blind, placebo-controlled study of hIVIg for acute management of presumptive primary IMT in dogs found that a single hIVIg infusion at 0.5g/kg over 6-12 hours was safe and was associated with a significant decrease in platelet-count recovery time and duration of hospitalization (Bianco et al. 2009). However, no difference in survival time was noted between the two groups. The optimal dose for hIVIg for treatment of dogs with IMT remains to be identified. A wide range of doses have been reported, ranging from 0.28g/kg to 1.30g/kg. hIVIg can be obtained from human hospital but its administration in veterinary patients is likely impractical as it is usually cost prohibitive and availability is limited.

Results of platelet transfusions in dogs with IMT are not well documented. In people, transfusion of multiple units of platelets is needed due to rapid destruction of the transfused platelets in ITP cases. Platelet transfusions in veterinary patients are usually impractical due to cost, limited availability, and immediate destruction of transfused platelets.

Other immunosuppressive drugs such as azathioprine, cyclosporine, and mycophenolate mofetil, have been used in conjunction with corticosteroids in veterinary patients with IMT. Azathioprine at 2mg/kg can administered once daily and then tapered along with corticosteroids to every 48 hours. However, studies evaluating effectiveness of azathiopirine in dogs with IMT are lacking. Common side effects of azathioprine therapy are gastrointestinal disturbances, myelosuppression, pancreatitis, and hepatopathy. Cyclosporine, another common immunosuppressive drug, can be administered 15-30m/kg once daily. Adverse side effects of cyclosporine in dogs include vomiting, diarrhea, anorexia, gingival hyperplasia, weight loss, alopecia, hirsuitism and papillomatosis. Mycophenolate at 10mg/kg twice daily has been used in the management of various immune-mediated diseases in dogs and in 1 dog with IMT. A larger study to evaluate the safety and efficacy of mycophenolate in dogs with IMT is lacking at this time. Gastrointestinal upset is the main side effect of mycophenolate.

Management of IMT in our veterinary patients can be frustrating especially when they are non-responsive to corticosteroid therapy. Some of these patients might require administration of crystalloid solutions, packed red blood cells, or fresh whole blood due to hypovolemia or anemia from hemorrhage.

References:

Bianco D, Armstrong PJ, Washabau RJ. A prospective, randomized, double-blinded, placebo-controlled study of human intravenous immunoglobulin for the acute management of presumptive primary immune-mediated thrombocytopenia in


Whats New At AMVS??

AMVS has recently invested and implemented Cubex systems with the help of MWI Veterinary Supply’s team members, Nicole and Jacob. We thank you both and appreciate all of your help during this extensive change.

The Cubex System helps to manage supply order to maximize efficiency through the use of technology. With these new improvements AMVS can provide faster, proficient solutions to everyday issues from ordering and tracking inventory to the rising cost of supplies, providing better overall care for our patients.

Check out the picture below for more info on how the Cubex System works!
You can also learn more by visiting their website: 

**Cubex Website!!!**

Thank you for your continued support!

-Aspen Meadow Veterinary Specialists

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