

Animal Emergency Center Memorandum

To: Referring Veterinary Hospitals

From: Rebecca Kirby, DVM *RK*

Date: April 10, 2007

Re: CE Fax Series – Pamidronate

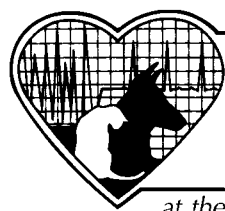
I am pleased to present you with the next installment in the CE fax series provided by the specialists at the Animal Emergency Center.

Pamidronate: A New Weapon Against Bone Pain and Hypercalcemia has been prepared by our staff oncologist, Dr. Rachel Reiman*. Dr. Reiman has found this new medication to be most beneficial for her canine patients with osteosarcoma. Please feel free to call her or her oncology nurse, Katie, with any questions about this new medication or to discuss any questions regarding your medical oncology patients.

The oncology service is anxious to try pamidronate on cats with oral squamous cell carcinoma with bone involvement. Should you have any clients with cats with this diagnosis that you would like to enter the study, Dr. Reiman would provide a medical oncology consultation to that client at no cost to discuss the treatment and potential benefits.

As always, we welcome your input and feedback regarding the CE Fax series or any other aspect of services provided to you and your clients by the staff of the Animal Emergency Center. Please contact Ms. Christina Matthews at 414-540-6710. This and other CE fax series articles can be found and downloaded from our website at www.animalemergencycenter.com.

*Dr. Reiman has successfully completed her ACVIM board examination in medical oncology and is pending acceptance of her publication to be able to display her ACVIM credentials.



Pamidronate

A New Weapon Against Bone Pain and Hypercalcemia

Rachel Reiman, DVM

Practice Limited to Medical Oncology

Pamidronate has proven useful in veterinary medical oncology for the treatment of osteosarcoma and other tumors involving bone. Pamidronate is an injectable bisphosphonate which inhibits osteoclastic activity. Osteoclasts are responsible for the resorption of hydroxyapatite from bone which results in bone breakdown/remodeling to maintain calcium levels in the body. Currently, bisphosphonates are used in people to treat osteoporosis and pain from cancer metastasis to bone.

Pamidronate has been shown to provide pain relief from osteosarcoma in animals. It is given as a slow intravenous drip infusion (usually over 1-2 hours) every 28 days. This medication has allowed many dogs to keep their osteosarcoma affected leg longer. There is some evidence to suggest that the use of pamidronate may also provide a survival advantage to those dogs receiving it. Early evidence shows that dogs given pamidronate may take longer to develop metastasis from osteosarcoma than dogs not receiving the drug. However, further research is needed and is ongoing.

Pamidronate also has the ability to decrease total and ionized calcium levels in the blood stream. It has been used with success for the treatment of hypercalcemia of malignancy (such as due to non-resectable anal gland adenocarcinoma), idiopathic hypercalcemia due to renal failure and hypercalcemia due to vitamin D toxicosis.

Currently pamidronate is being investigated for use in cats with oral squamous cell carcinoma. Many times this aggressive form of cancer invades and destroys the bones of the maxilla and/or mandible. The hope is that pamidronate can be used for pain relief in this setting as well, thereby increasing the quality of life for those cats affected by this horrible disease.

Caution does need to be used when administering pamidronate. Hypocalcemia can develop resulting in twitching, facial rubbing, and seizures during and after administration. Renal damage has also been reported with the use of pamidronate, necessitating monitoring of renal function and concurrent fluid therapy during administration.

References and suggested reading

- Evaluation of intravenous pamidronate administration in 33 cancer-bearing dogs with primary or secondary bone involvement. *J Vet Intern Med* 2005 Jan-Feb; 19(1):74-80.
- Uses and effectiveness of pamidronate disodium for treatment of dogs and cats with hypercalcemia. *J Vet Intern Med* 2005 Jan-Feb; 19(1):29-33.
- Investigation of the effect of pamidronate disodium on the in vitro viability of osteosarcoma cells from dogs. *Am J Vet Res* 2005 May; 66(5):885-891.
- Bisphosphonates and cancer. *J Vet Intern Med* 2004 Sep-Oct; 18(5):597-60.