

# Targeting Trends

Reporting the latest news in Molecular Surgery



## Cancer Pain Relief in Pet Dogs has Direct Translation into Human Chronic Pain Conditions

Based on the recent publication by: *Brown DC, Agnello K. (2013) Intrathecal substance p-saporin in the dog: efficacy in bone cancer pain. Anesthesiology 119(5):1178-1185* and the October 2013 press release by the American Society of Anesthesiologists, "Man's best friends' chronic pain relieved with new treatment, study finds: Findings could be useful to human cancer patients."

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A single injection eased severe, chronic pain caused by late-stage bone cancer in dogs, according to a study in the November issue of *Anesthesiology*. Dogs with bone cancer that received a neurotoxin injection had significantly more pain relief than those that got standard care without the injection. "Dogs are part of the family and we do everything we can to relieve them of pain and discomfort when they are sick," said Dorothy Cimino Brown, D.V.M., School of Veterinary Medicine, University of Pennsylvania, Philadelphia. "In addition to sharing emotional attachments with our dogs, humans share many of the same ailments our pets suffer when fighting cancer. By studying the positive pain relief this treatment afforded dogs, we are hopeful it may also be effective for humans." The evolution of bone cancer pain in dogs parallels what occurs in humans, with the frequency and intensity of pain increasing over weeks and months. As the cancer advances, both canine and human patients experience life-altering pain, which greatly affects their daily activities and quality of life. The standard treatment for dogs with late-stage bone cancer can include opioids, steroids, and palliative radiation. All of these treatments can have negative side effects.



The positive pain-relieving effect that SP-SAP had was significant in the veterinary study in pet dogs with bone cancer. Not only does this provide promising data for canine patients suffering from cancer, it also gives credence to the successful use of SP-SAP for chronic pain control in humans. (See Clinical Trial update on Page 6).

The owners of 70 dogs enrolled their pets in this study. Half the dogs received an injection of a neurotoxin, called substance P-saporin (SP-SAP), as well as standard care. The other half (i.e., the control group) received standard care without the neurotoxin injection. The average age of the dogs was between 8 and 9 years and their average weight was 90 pounds. Multiple breeds participated in the study, including: Rottweilers, Labrador Retrievers, Golden Retrievers and mixed breeds.

Neurotoxins are historically known for the disease they can cause, such as botulism, according to Dr. Brown. More recently, however, scientists have learned to harness properties of neurotoxins for positive uses. For example, Botox is used to eliminate wrinkles and SP-SAP is used to decrease pain. The SP portion of the neurotoxin works by attaching to a pain-transmitting nerve and then the "SAP" part gets inside the nerve and causes it to die.

Within six weeks of beginning the study, 74 percent (26) of the dogs in the control group needed to be "unblinded" (in other words, their status in the study revealed) and their pain relief

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Denise Higgins, Editor

