Laser Therapy vs NSAIDs: Rethinking the Approach for Pain Management in Chronic OA

By: Ashton Thompson, DVM, CCRP, cVMA

DREAMS DO COME TRUE

It is unheard of in the veterinary industry to have 100% of survey respondents agree how to best practice medicine. When Companion Animal Health polled 600 veterinarians if they would prefer to start with a side effect-free treatment for pain if efficacy is the same, the response was unanimous: YES. The time to reconsider our approach to pain management has come. Thanks to a 2022 study published in AJVR where dogs with hip osteoarthritis were treated with either photobiomodulation (laser therapy) or NSAIDs, this survey is no longer a pipe dream.[1]

AN UNCHALLENGED CONTENDER

NSAIDs have long been the best friend of veterinarians. Their ability to decrease inflammation and ease of administration have made them an effective treatment for osteoarthritis pain. However, the rise in using combination drug therapy and development of drugs targeting new pain pathways has made it clear, we want more for our patients. So, what more can we do? We must ask ourselves two critical questions: What are we doing to target the injury site, and how are we impacting the disease process long-term? The inclusion of non-pharmacological modalities such as laser therapy as part of our initial treatment plan allows us to answer these questions with confidence. Laser therapy is a non-invasive treatment that not only addresses the progression of disease in the tissues themselves (something medications are not providing), but it also modulates pain and inflammation - in many cases, better than NSAIDs.

THE MATCHUP

In a randomized double-blinded controlled trial, the effectiveness of photobiomodulation (PBMT) was compared to an oral NSAID for treating moderate to severe hip osteoarthritis in working police dogs. Dogs received either daily meloxicam + SHAM laser or PBMT + placebo pill over a period of 21 days. The clinician and dog handlers were blinded. Treatment group dogs received PBMT at a dose of 14-20J/cm^2 applied on contact to the hip joint(s). Six PBMT treatments were administered over the three weeks (3-2-1). Outcome measures, including several validated pain and function scoring systems, as well as joint range of motion, digital thermography, and gait evaluation, were evaluated at multiple time points throughout the three month-long follow up period. Results showed that PBMT reduced pain levels and improved clinical findings (including functional scores) in dogs with moderate to severe hip osteoarthritis and had significantly better scores then those in the control (NSAID) group. Joints in the PBMT group had longer-lasting results with the mean number of days to return to baseline values in the PBMT group being significantly higher than the control (NSAID) group. The PBMT group also had lower values recorded in both thermographic views of joints and improved joint range of motion, sometimes out to 90 days after discontinuing treatment.[1]

Results of this study reiterate findings of another published in 2018 where dogs with naturally occurring elbow OA were treated with a similar dose (10-20J/cm^2), resulting in not only significantly better pain and lameness scores compared to the control group, but with 82% of the dogs in the PBMT group being able to reduce their NSAID dose by at least 50%.[2]

Both of these studies validate the need for appropriate dosing when treating osteoarthritis but equally important, they show veterinarians a path to better pain control for their patients and an opportunity to use less medications.

WHY CHANGE?

In past years, clinics reserved laser therapy for chronic pain and wound cases. Due to a library of evidence and clinics' need for in-house services, laser therapy's use for acute inflammatory conditions such as otitis has become standard. Having evidence that PBMT can provide the same level of relief as NSAIDs leaves us little reason not to utilize it as a first-line treatment with traditional therapies. This includes benefitting conditions such as cystitis, feline asthma, or enteritis. A recent study showed that dogs with large bowel idiopathic diarrhea treated with PBMT were 4.5x less likely to experience a diarrhea event than a control group, even showing improvement after one treatment.[3] Using less than five minutes of staff time, patients can have less pain and inflammation (or even less diarrhea) before leaving the clinic—something most medications cannot provide. This sets clients up for success at home, optimizes treatment plans, and minimizes complications. It also provides the opportunity to decrease or potentially avoid the use of medications. With millennials now being the largest demographic of pet owners, clients are seeking out non-pharmacological options and they want results fast. While it is important that we listen to our clients, we must be confident that we are offering validated and effective treatments. Laser therapy checks these boxes, and our clients are depending on us to provide this best care practice.

[1]Alves, J.C.,et al. (2022). A randomized double-blinded controlled trial on the effects of photobiomodulation therapy in dogs with osteoarthritis. Am J Vet Res. 83(8).

[2]Looney, A.L., et al. (2018). A randomized blind placebo-controlled trial investigating the effects of photobiomodulation therapy (PBMT) on canine elbow osteoarthritis. Can Vet J. 59(9), 959–966.

[3]Alves, J.C., et al. (2021). The effect of photobiomodulation therapy on the management of chronic idiopathic large-bowel diarrhea in dogs. Lasers Med Sci. 37(3), 2045–2051.

CompanionAnimalHealth.com // 302-709-0408 // info@companiontherapy.com