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Popular Article

Canine Health: Galliprant vs Meloxicam in Mesotherapy Treatment Outcomes

Dr. Diva Dhingra

M.V.Sc. Scholar, Dept. of Veterinary Surgery & Radiology
NDVSU

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Abstract

Canine osteoarthritis (OA) is a prevalent degenerative joint disease-causing pain and reduced mobility in affected animals. Mesotherapy, an emerging minimally invasive technique, offers a promising avenue for managing OA symptoms. This article describes the efficacy of mesotherapy using two commonly prescribed nonsteroidal anti-inflammatory drugs (NSAIDs), meloxicam and galliprant, in alleviating pain and improving joint function in dogs with OA.

Keywords: Osteoarthritis, mesotherapy, NSAIDs, meloxicam, galliprant

Introduction

Galliprant (grapiprant) and Meloxicam represent two significant pharmacological options in managing canine osteoarthritis, pain, and inflammation, catering to the growing concern for pet health and well-being. Galliprant, a chewable tablet, is positioned as a newer, targeted treatment option, leveraging the piprant class's benefits to mitigate the risks associated with traditional non-steroidal anti-inflammatory drugs (NSAIDs). Comparatively, Meloxicam offers treatment in oral suspension and injectable forms, marking its prevalence in veterinary practices for managing similar conditions. The dialog around Galliprant vs Meloxicam in the context of dogs underscores a pivotal shift towards more specialized and safer treatment modalities for canine osteoarthritis. This comparison not only highlights the advances in veterinary medicine but also sets the stage for a detailed examination of mesotherapy as a promising treatment framework.

Understanding Mesotherapy

Definition and Mechanism

Mesotherapy is defined as a minimally invasive procedure that involves the local administration of pharmaceuticals in microdeposits within the dermis. This technique provides a rapid onset of action, prolonged local effect, and minimizes the overall use of drugs, reducing systemic exposure.

Historical Background

The technique was pioneered in 1960 by Dr. Michel Pistor at the Ecole Nationale Veterinaire d'Alfort and has since been incorporated into veterinary medicine, particularly for treating animals like dogs and horses.

Applications in Canine Medicine

In veterinary practices, mesotherapy is utilized for a variety of canine conditions including cataracts, deafness, lumbar neurodermatitis, neuralgia, neuritis and painful joints. It involves injecting small amounts of medication into the 'mesoderm' or deeper layers of the skin, which directly affects the nerves responsible for pain perception.

Procedure

The procedure entails performing injections at the level of the lesion and extending caudally, with three to four rows of injections on each side of the affected area. This targeted approach helps in delivering the medication precisely where it's needed, enhancing the therapeutic outcomes while minimizing side effects.

Broad Spectrum of Use

Besides its use in treating musculoskeletal issues, mesotherapy has also been employed for cosmetic conditions in dogs, such as unwanted fat removal and skin rejuvenation, showcasing its versatility.

Current Research and Future Directions

While mesotherapy is already a popular treatment modality for canine musculoskeletal-related pain, ongoing research is crucial to fully establish its efficacy and optimize protocols for broader applications.

Mesotherapy vs. Traditional Treatments for Canine Osteoarthritis

Comparative Analysis of Treatment Protocols

1. Traditional NSAID Treatment:

- Meloxicam, a common NSAID, targets cyclooxygenase enzymes (COX-1 and COX-2) to provide anti-inflammatory and analgesic effects in dogs suffering from osteoarthritis.



- Traditional treatments often involve systemic medications like meloxicam, which, despite their effectiveness, might lead to adverse effects or be contraindicated due to other comorbidities.

2. Mesotherapy Approach:

- A study explored a mesotherapy protocol involving 30 dogs with hip osteoarthritis, where dogs were treated with injections of lidocaine, piroxicam, and thiocolchicoside at intradermal points across seven sessions.
- The mesotherapy group (MG) showed significant improvement in pain and mobility scores at various intervals (+15, +30, +60, and +90 days) compared to the control group (CG) receiving meloxicam.

Efficacy and Outcomes

1. **Clinical Metrology Instruments:** The effectiveness of treatments was assessed using tools like the Canine Brief Pain Inventory, Liverpool Osteoarthritis in Dogs, and Canine Orthopedic Index, which helped quantify the improvements in conditions of the dogs undergoing different treatment protocols.
2. **Case Study Insights:** In a specific instance, a dog with osteoarthritis treated with mesotherapy around the right elbow joint exhibited a significant reduction in pain, as measured by the Canine Brief Pain Inventory.

Research and Documentation

Systematic Reviews: A systematic review covered 24 complementary and alternative veterinary medicine therapies, including mesotherapy and traditional treatments, highlighting a lack of high-quality scientific documentation to conclusively determine their clinical effects.

This comparative analysis underscores the potential benefits of mesotherapy as a viable alternative to traditional systemic treatments, offering a targeted approach that may reduce systemic side effects while effectively managing pain and improving mobility in dogs with osteoarthritis.

Clinical Studies on Mesotherapy in Canines

Galliprant in Clinical Trials

Clinical studies have demonstrated that Galliprant treatment shows a positive response within just 7 days, with improvements continuing over the subsequent month. In trials, higher-than-necessary doses administered over 9 months showed no adverse effects on the kidneys or liver, and importantly, no gastric ulcers were reported. The most common side effects noted were transient intestinal



symptoms like mild diarrhea and occasional vomiting, which generally ceased with ongoing treatment and were infrequently observed.

Mesotherapy Protocols and Outcomes

1. **Study Design and Protocol:** A mesotherapy study involved 30 dogs with osteoarthritis, divided into a control group (CG) receiving Meloxicam and a mesotherapy group treated with lidocaine, piroxicam, and thiocolchicoside. The mesotherapy group underwent seven treatment sessions with intradermal injections at strategic points.
2. **Clinical Outcomes:** The effectiveness of the treatments was assessed using the Canine Brief Pain Inventory, Liverpool Osteoarthritis in Dogs, and Canine Orthopedic Index. Results indicated that dogs in the mesotherapy group experienced better outcomes in terms of pain reduction and mobility, with prolonged effects compared to the control group.

Applications in Veterinary Medicine

- Mesotherapy has been effectively used in veterinary medicine to manage pain in dogs with conditions like osteoarthritis, where significant reductions in pain scores were documented.
- The technique involves multiple injections, tailored to the dog's size, directly around the affected joints, with no sedation required and a short recovery period.
- Observations from these studies suggest that mesotherapy not only alleviates pain but also contributes to an enhanced quality of life for dogs, as reflected in improved Canine Pain Behavior Index scores.

Procedure and Protocols for Mesotherapy in Dogs

Mesotherapy Administration Protocol

1. **Pre-Treatment Guidelines:** Galliprant, utilized in mesotherapy for dogs, should be administered as a pork-flavored tablet once daily, at least 1 hour before feeding to ensure absorption on an empty stomach.
2. **Injection Procedure:** The mesotherapy involves administering multiple small-volume injections of an analgesic, typically NSAIDs, directly surrounding the painful area to target the affected tissues precisely.
3. **Post-Treatment Care:** After undergoing mesotherapy, animals are advised to engage in light activities for 3 days. Following this period, they may gradually resume their normal training routines.



Expected Outcomes and Follow-up

1. **Immediate and Long-Term Effects:** A significant improvement in the animal's condition is generally anticipated within 14 days post-treatment. If the response is incomplete, a subsequent session of mesotherapy may be scheduled 3-4 weeks later.
2. **Duration and Frequency of Treatment:** The effects of mesotherapy are expected to last between 6 to 12 months. In cases of chronic pain, it is recommended not to exceed two treatments per year to prevent potential complications.

Benefits and Limitations of Mesotherapy**Benefits of Mesotherapy**

1. **Immediate Effects and Outpatient Convenience:** Mesotherapy treatments are known for their rapid effectiveness and are typically conducted as outpatient procedures, allowing for minimal disruption to daily activities.
2. **Effective Pain Management:** Studies have shown significant reductions in pain scores, indicating mesotherapy's efficacy in managing conditions like canine osteoarthritis.
3. **Minimal Side Effects:** Compared to traditional treatment methods, mesotherapy is associated with fewer side effects, presenting a safer option for managing chronic conditions.

Limitations of Mesotherapy

1. **High Cost:** The cost for mesotherapy sessions can be substantial, which may not be affordable for all pet owners.
2. **Lack of Comprehensive Studies:** There is a notable deficiency in rigorous scientific studies that fully establish the efficacy and safety of mesotherapy, which could hinder its acceptance in mainstream veterinary practices.
3. **Regulatory and Insurance Challenges:** Many of the drugs used in mesotherapy are off-label, meaning they are not FDA-approved for the purposes they are used for in mesotherapy. This can lead to issues with insurance coverage and regulatory compliance.
4. **Uncertainty of Long-Term Effects:** The long-term local and systemic effects of mesotherapy remain largely unknown, which poses a risk when considering this treatment for chronic conditions.
5. **Temporary Pain Relief:** Although mesotherapy can significantly reduce pain, the effects are not permanent. Studies have noted that pain scores can return to near-baseline levels within six months, necessitating further treatment sessions.
6. **Need for Further Research:** To solidify mesotherapy's role in veterinary medicine, more extensive studies are required to confirm its long-term safety and effectiveness.



Future Perspectives and Conclusion

Throughout this article, we delved into the comparative merits of Galliprant and Meloxicam within the framework of mesotherapy, highlighting their roles in managing canine osteoarthritis and pain. The exploration underscored mesotherapy's potential as a minimally invasive, effective treatment method, offering a promising alternative to traditional systemic treatments. Through clinical studies and real-life applications, we observed how this technique alleviates pain and improves mobility in dogs, showcasing the advancements in veterinary pain management.

The broader implications for canine health are clear: with continued research and optimization of treatment protocols, mesotherapy could fundamentally change how we address chronic conditions in our canine companions. While acknowledging the need for further study to fully establish its efficacy and safety, the current evidence supports mesotherapy as a valuable tool in veterinary medicine. It invites a shift towards more targeted, safer treatment options, potentially improving the quality of life for dogs suffering from osteoarthritis and other painful conditions.

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