## Introduction

- Osteoarthritis(OA) is a common chronic condition in dogs that leads to significant joint pain, stiffness, and reduced mobility. Several treatment options are available for managing this condition, including Nonsteroidal Anti-Inflammatory Drugs(NSAIDs). However, NSAIDs are often associated with adverse effects, such as gastrointestinal complications as well as liver and kidney damage. As a result of this, there is an ever growing interest in many types of alternative treatment options with one of these being cannabidiol(CBD). CBD is known to have anti-inflammatory and pain-relieving properties that could potentially benefit dogs with OA.
- Numerous studies have shown the potential of CBD as an alternative treatment option for OA in dogs. In a study by Gamble et al. (2018), CBD was found to significantly decrease pain and increase activity levels in dogs with OA. Additionally, it was reported that CBD had no adverse effects on liver function in dogs. Another study by Kogan et al. (2019) evaluated the use of CBD in dogs with OA and found that CBD was effective in reducing pain and improving mobility.
- The purpose of this study is to compare the efficiency and safety of CBD compared to that of Carprofen, a commonly used NSAID, in the treatment of dogs with OA. The primary objective is to evaluate the effect of both treatments on pain levels, mobility, and quality of life in dogs with OA. The secondary objective is to assess the safety of both treatments in terms of adverse effects and changes in laboratory parameters.

## Materials and methods

A randomized, double-blind study will be conducted to compare the efficiency and safety of CBD to carprofen in dogs with OA. Subjects will be selected via the Harrogate Hospital for Animals and look to obtain canines that have been diagnosed with OA based on clinical signs, radiographic findings, and physical examination. Note that the selection of the animals can expand beyond just Harrogate Hospital for Animals. 40 dogs will be randomized to receive either CBD or carprofen for 12 weeks. There will be 20 dogs in each group. Dogs will be relatively matched as closely as possible in terms of age and size. Dogs that have significant bloodwork changes will be excluded as the secondary goal is to look at the liver and kidney function before and after treatment. The dogs will be examined in their own home by their owners as well as a weekly visit to the clinic to check on each subjects' conditions. The control group will be the group that receives the carprofen as there is already sufficient evidence found about carprofen and its effects on dogs with OA. The primary outcome measures will be changes in pain levels, mobility, and quality of life as assessed by validated instruments, such as the Canine Brief Pain Inventory and the Helsinki Chronic Pain Index. The secondary outcome measures will include adverse events and changes in laboratory parameters, including liver and kidney function tests.

## Richard A. Gillespie College of Veterinary Medicine LINCOL NUMBORIAL UNVERSITY Veterinary Health Science

# Effectiveness and Safety of CBD Compared to Carprofen for Treatment of Dogs with Osteoarthritis

## **Anticipated Results**

In this study, we hope to find that CBD is a safer and/or more effective treatment for dogs that have been diagnosed with and have Osteoarthritis. Bloodwork will be done five days after treatment has finished to show if there has been any significant changes in liver and kidney function for both treatments. The main goal however is to find if CBD or carprofen is a better treatment for pain, increased mobility, and quality of life which will be assessed by the Canine Brief Pain Inventory and the Helsinki Chronic Pain Index.



Helsinki Chronic Pain Index and Canine Brief Pain Inventory



Medwayvet.com, 2018. "Dog with OA" https://medwayvet.com/osteoarthritisin-dogs/

#### Discussion

- The current treatment options for dogs with OA often come with adverse
  effects, which limit their long-term use. CBD has shown promise as an
  alternative treatment option for dogs with OA, with studies reporting its
  ability to decrease pain and improve mobility without adverse effects on
  liver function. However, there is a lack of comparative studies evaluating
  the efficacy and safety of CBD to traditional NSAIDs such as carprofen.
- This study aims to address this gap in knowledge by comparing the efficiency and safety of CBD to carprofen in dogs with OA. The results of this study could provide valuable insights into the potential of CBD as a replacement or adjunct therapy to traditional NSAIDs for managing OA in dogs. Additionally, it could provide a foundation for future research on the use of CBD in veterinary medicine.
- Limitations of this study include the potential for confounding variables, such as differences in disease severity and age, as well as individual variability in response to treatment. Additionally, the study is limited to a 12-week treatment period, which may not be sufficient to evaluate the long-term safety and efficiency of CBD and carprofen in treating dogs with OA.
- In conclusion, this study will contribute to the understanding of the potential of CBD as an alternative treatment option for dogs with OA. The results of this study could have significant implications for the treatment of OA in dogs, particularly for those that cannot tolerate traditional NSAIDs.

## Literature cited

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