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PRELIMINARY STUDY REGARDING THE HEPATIC PARAMETERS IN DOGS TREATED WITH CBD OIL

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Abstract: *The potential therapeutic applications of cannabinoids have garnered the attention of human healthcare professionals, leading to growing interest among pet owners regarding their use in veterinary medicine. Some cannabinoids found in oils have raised concerns about possible side effects, particularly hepatic issues with prolonged use. This preliminary study aimed to highlight changes in liver enzymes in dogs experiencing anxiety or pain treated with CBD oil over a three-month period. The study involved five dogs with various conditions, each administered 0.22 mg/kg of CBD twice daily for three months. Three of these dogs received additional "For liver" treatment one month after stopping CBD. The findings indicated that all dogs showed improvements in daily activity and mobility. However, liver enzyme levels increased in 3 out of 5 cases (with elevations in AST and ALP), and one case showed an increase in gamma-glutamyl transferase (GGT), while alkaline phosphatase (ALP) rose in 4 out of 5 cases by the end of the treatment. These results of the preliminary study with limited sample size, suggest that CBD oil may affect the studied enzymes, indicating a potential hepatotoxic effect, particularly in older patients.*

• Introduction

• CBD is a biologically active, non-psychoactive compound found in the *Cannabis sativa* plant, which has seen a significant rise in popularity in recent years. Despite its potential health benefits, there is increasing evidence linking CBD to higher rates of adverse effects and hepatotoxicity [Kobayashi et al., 2020, Moore et al., 2023]. Therefore, this study aims to present preliminary data on changes in liver enzymes following three months of CBD oil usage.

• Material and method

The five participants in the study received CBD oil, 100% cannabidiol oil was utilized in varying concentrations (20%, 10%, and 5%) to accommodate the different sizes of the animals. The dogs received CBD oil orally at a dosage of 0.22 mg/kg, administered twice daily for three months in their owners' homes.

In the fourth month, CBD oil was withdrawn from the dogs' diets to assess its effects over the previous three months and to determine whether there was a trend toward recovery in enzyme levels after its cessation. Dogs 1, 3, and 5 were given a liver support supplement in the fourth month.

For the biochemical analysis of alkaline phosphatase (ALP), alanine aminotransferase (ALT), aspartate aminotransferase (AST), and gamma-glutamyltransferase (GGT), 2 ml of blood was aseptically drawn from each participant via the cephalic vein. Liver enzyme measurements were performed using the RxDaytona+ multiparametric analyzer (Randox Laboratories Limited) through wet chemistry specific kits.

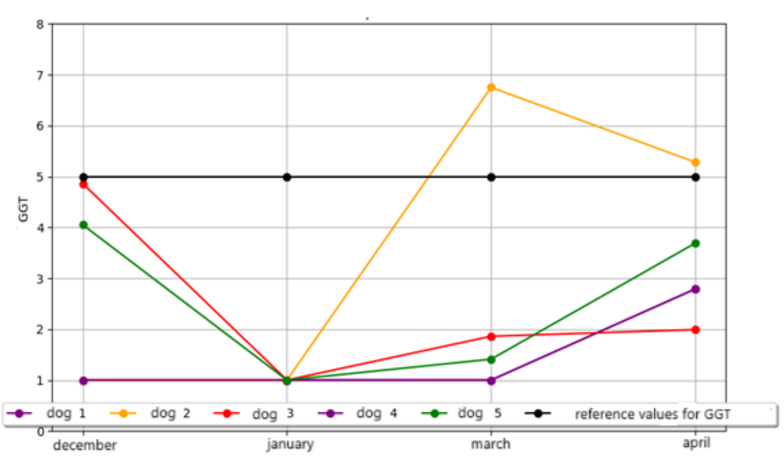

Figure 4. *GGT levels in dogs treated with CBD oil.*

• Results and discussions

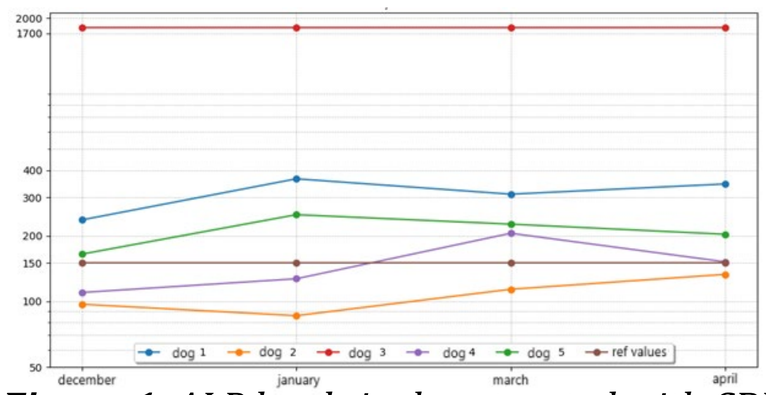

Figure 1. *ALP levels in dogs treated with CBD oil.*

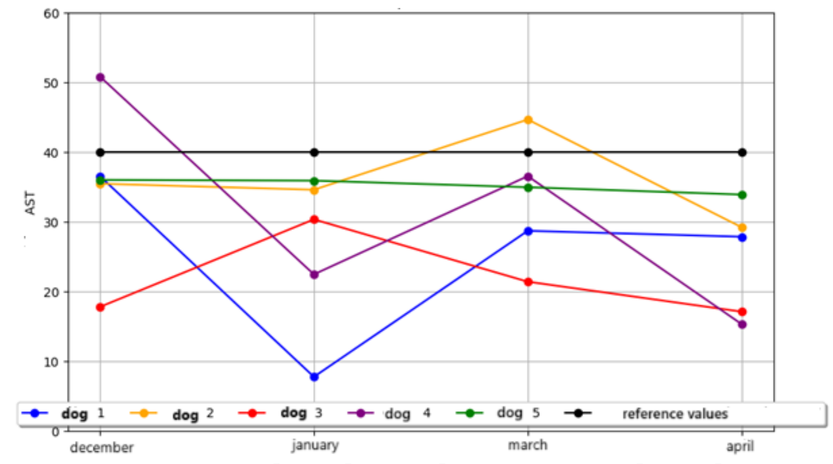

Figure 2. AST levels in dogs treated with CBD oil.

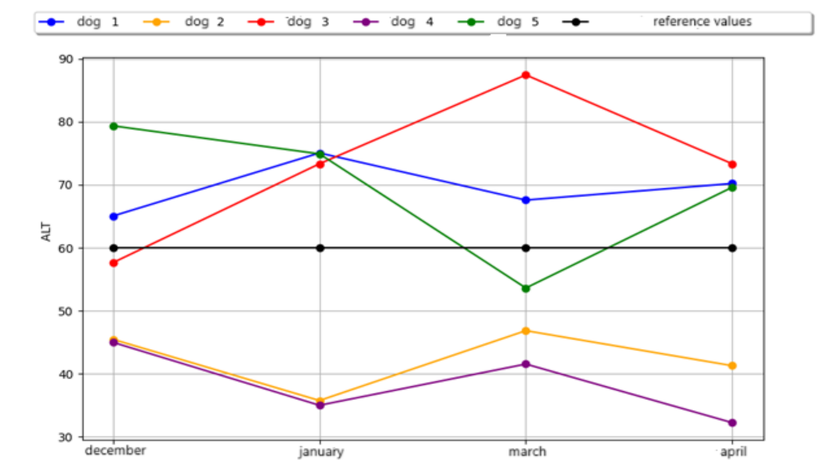

Figure 3. *ALT levels in dogs treated with CBD oil.*

Conclusions

The findings of this study suggest that CBD oil affects the enzymes AST, ALT, ALP, and GGT, thereby reinforcing research that highlights the potential hepatotoxic effects of CBD oil, particularly in elderly patients who may not experience rapid liver recovery. The current findings raise caution regarding potential hepatotoxicity, especially in older animals.

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