Case Report of a Veterinary Cancer Patient Treated with LDN Oil-Based Oral Suspension

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Introduction

Naltrexone is commercially available and it has historically been used as an opioid receptor antagonist. It was later found that in small doses - LDN (Low Dose Naltrexone) – it may increase endorphin production, regulate the immune function, and reduce inflammation. Research also suggests that LDN may inhibit cancer cell growth through its effects on the Opioid Growth Factor receptor. Its use has expanded into veterinary medicine for immune-related conditions and common cancers, typically dosed at 0.1 mg/kg daily. Since LDN is not commercially available, it may be prepared by compounding pharmacies to be administered orally as solid dosage forms (tablets and capsules) or liquid dosage forms, which allow for flexible dosing and titration throughout treatment.

Case Report

BB Leigh, a female 16-year-old Pitbull Lab Mix shown in Figure 1, was diagnosed with urothelial carcinoma (Transitional Cell Carcinoma, TCC), the most common urinary tract cancer in dogs. The tumor, located in the bladder, was identified by ultrasound and confirmed using the Cadet BRAF Urine Test. Despite conventional cancer interventions and treatments, the cancer persisted and the patient continued to experience haematuria, as well as urinary frequency and urgency. She also paced and whined frequently during the night.

Figure 1. Photo of BB Leigh at the park.

Compounded Treatment

BB Leigh's specialist veterinarian sought a novel treatment to improve the patient's quality of life and to potentially extend her life expectancy based on the TCC prognosis. After consultation with a compounding pharmacist, the patient was prescribed a customized LDN oil-based oral suspension formulated in PCCA Fixed Oil Suspension Vehicle. The prescribed dose was 0.45 mL of naltrexone HCl 10 mg/mL orally once daily, based on her weight of 52 lbs. The formula for this veterinary customized medication is detailed in Table 1. Naltrexone hydrochloride USP (dihydrate) may have a limit of total solvents up to 11% (and up to 5% for the anhydrous form) and an assay of 98 – 102% calculated on the anhydrous and solvent-free basis. The final physical description is golden yellow, translucid, uniform suspension, as shown in Figure 2. Because the preparation is a nonaqueous compounded oral liquid, it was assigned an estimated beyond-use date of 90 days according to USP <795> guidelines.

Results & Discussion

The specialist veterinarian was very pleased with the outcome of the LDN compounded treatment. BB Leigh was exposed to regular ultrasounds, and the tumor showed some evidence of shrinkage. The urinary frequency and urgency improved, and the patient's hematuria was almost completely resolved as there was rarely any visible evidence of blood in the urine. The patient lived just short of two years after the TCC diagnosis, which is perceived as much longer than the median survival time. The specialist veterinarian is convinced that the LDN compounded treatment was of significant benefit to the patient's longevity and quality of life, and she has recommended the same treatment to several patients with TCC following the success of this case study.

Testimonial

We started this study not only to advance the profession, but to improve the quality of life for our patients. Most of us have all interacted with pets in some form in our lives, and we all know the joy that they can bring us. They're there at the door waiting after a bad day at work, they come in to snuggle when we are sad, and for most people they are a best friend that is always there for us.

This study has shown us that we can indeed give them extended quality time with us when other treatments have failed. That means more treats, more pup cups, and ultimately more memories that we get to cherish forever.

Figure 2. LDN compounded medication. *Table 1.* Detailed formula for the LDN compounded medication.