The Use of Cannabidiol in Patients with Low Back Pain Caused by Lumbar Spinal Stenosis: An Observational Study

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INTRODUCTION:
Spinal stenosis is a degenerative narrowing of the spinal canal with encroachment on the neural structures by surrounding bone and soft tissue. This chronic low back condition can cause restrictions in mobility, impairment of daily activities, opioid dependence, anxiety, depression, and reduced quality of life. Spinal stenoses can be treated through surgical and nonsurgical methods, but neither has proved consistently reliable. Cannabidiol (CBD) is the second most prevalent component of cannabis (marijuana) after Δ⁹-tetrahydrocannabinol (THC). Unlike THC, CBD is non-intoxicating and has been seen to have few side effects making it safe at high doses. CBD has also been observed to have anxiolytic, anti-inflammatory, antiemetic, and antipsychotic behaviors. CBD may provide greater nonsurgical treatment options for the pain associated with spinal stenosis while minimizing the need for opioids; an observational study was undertaken to assess CBD’s effects for patients suffering from chronic spinal stenosis.

METHODS:
This IRB-approved observational study was investigator-initiated and designed to determine the effect of hemp-derived CBD gel caps for patients with spinal stenosis related to low back pain and leg pain relative to patient outcomes, medication utilization, and quality of life outcome measures. Inclusion criteria included a history of neurogenic claudication or radicular leg symptoms with confirmatory radiographic imaging showing lumbar spinal stenosis at one or more levels. A total of six physician visits would be required where a set of surveys would be filled out each four weeks apart. There were seven surveys used at each visit; Pain Numeric Rating Scale, The Roland-Morris Low Back Pain and Disability Questionnaire, The Inventory of Depression and Anxiety Symptoms Second Version (IDAS-II), Brief Inventory of Psychosocial Functioning (B-IPF), Pittsburgh Sleep Quality Index (PSQI), The Daily sessions, Frequency, Age of Onset, and Quantity of Cannabis Use Inventory (DFAQ-CU), and a Medical and Psychiatric Treatment Receipt. ANOVA testing was performed to calculate the p values for continuous data and Chi-Square testing was used for categorical data. Following the descriptive tables, a set of regressions are also presented. Each regression focused on the four different pain scores as the main dependent outcome.

RESULTS:
The study population consisted of 48 patients. The patient population's age ranged from 63 to 95 years and was normally distributed, with a mean age of 75 ± 7.13 years. The sex distribution was 33% male and 67% female patients. The pain was broken down between the six visits for each of the four questions: pain right now, usual pain level during the week, best pain level during the week, and worst pain level during the week. Usual pain levels (P < 0.001) and worst pain levels (P < 0.005) demonstrated statistically significant improvement over time, while pain right now (P > 0.05) and best pain level (P > 0.05) stayed consistent throughout the without statistical significance (Figure 1, Table 1). Several variables relating to sleep quality also improved significantly, including maintaining normal sleep habits (P < 0.05), feeling less exhausted (P < 0.005), having less trouble falling asleep (P < 0.05), waking up at a normal hour (P = 0.001), waking up less during the night (P < 0.05), reporting sleeping better (P < 0.05), and ability to concentrate better (P < 0.05).

DISCUSSION AND CONCLUSION:
This open-label, prospective, observational study found that treatment with hemp-derived CBD gel caps was associated with significant improvements in pain scores and several quality-of-life measures for patients with lumbar spinal stenosis. The CBD gel caps were not associated with any adverse effects. Using CBD to help alleviate pain in spinal stenosis is supported by the evidence in this study. While the first of its kind, this study supports the evidence that cannabis products can be a safe and effective treatment option for managing chronic pain.