



## AAN 72<sup>nd</sup> ANNUAL MEETING ABSTRACT

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**Abstract Title:** Keep Off the Grass: Artisanal Versus Pharmaceutical Cannabidiol in Pediatric Refractory Epilepsy Patients

**Press Release Title:** Study Finds Artisanal CBD Not as Effective as Pharmaceutical CBD for Reducing Seizures: Not All Medical Cannabis Is the Same

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**Objective:** We hypothesize that cannabidiol (CBD) levels will be higher in patients taking pharmaceutical versus artisanal CBD and higher CBD levels will be associated with increased side effects and decreased seizure frequency.

**Background:** CBD is a neuroactive Cannabis-derivative with antiseizure properties. Pharmaceutical CBD was FDA-approved for the management of seizures associated with Lennox-Gastaut syndrome (LGS) and Dravet syndrome in June 2018 but artisanal CBD has utilized in various preparations since the late 1970s. These CBD preparations have varying manufacturing techniques and contain variable amounts of CBD/THC. It is our practice, when appropriate, to encourage transition from artisanal to pharmaceutical CBD.

**Design/Methods:** This is an IRB-approved retrospective chart review. We included patients with epilepsy treated with artisanal and/or pharmaceutical CBD who had serum CBD levels. Patients were identified by treating neurologists.

We recorded name, medical record number, date of birth, gender, epilepsy diagnosis, artisanal CBD dosage/concentration, pharmaceutical CBD dose, serum CBD level, seizure history, response to medication (percent reduction in motor seizures), and reported side effects.

**Results:** 31 patients met inclusion criteria, 48% female, mean age 10.1-years-old (range 3-20-years-old). Epilepsy syndromes were LGS 32%, Dravet 6%, and other epilepsy syndromes 62%. This includes 22 patients participating



in a pharmaceutical CBD expanded access program from 9/2017-3/2019. Mean serum CBD level was 30.1 ng/mL in artisanal group and 124 ng/mL in pharmaceutical group. At last follow-up (median follow-up 11.8 months (IQR 3.6-17.5 months), patients on artisanal CBD had 70% increase in overall seizures, while prescription CBD group had 39% reduction. 11 patients reported adverse effects (somnolence, emesis, diarrhea, diminished appetite), 6 of whom discontinued CBD due to side effects (all were in the prescription CBD group).

**Conclusions:** Pharmaceutical CBD achieves higher serum CBD levels and achieves better seizure control than artisanal CBD in refractory pediatric epilepsy patients. This group also reported increased adverse side effects.