**Background**

Cyclin-dependent kinase-like 1 (CDKL5) deficiency disorder (CDD) is a developmental and epileptic encephalopathy characterized by global developmental impairment and early-onset seizures. Ganaxolone, a neurosteroid and positive allosteric modulator that targets both synaptic and extrasynaptic GABA_A receptors, is FDA approved for the treatment of seizures associated with CDD in patients 2 years of age and older.

**Objective**

To assess the clinical features of patients being prescribed ganaxolone by reviewing the clinical data obtained from ganaxolone patient enrollment forms submitted to a specialty pharmacy for patients with CDD.

**Methods**

A retrospective analysis was conducted using de-identified patient enrollment form clinical data from a single specialty pharmacy in the United States. Patients included in the analysis had CDD (ICD-10 G40.42) and were prescribed ganaxolone between July 2022 and February 2023.

Collected clinical data included epilepsy-related ICD-10 codes, age at seizure onset, previous and concomitantly utilized medications, additional seizure interventions, and current seizure burden.

**Results**

Data from 114 patients were included in the analysis.

**Seizure Burden and History**

- Reported seizure burden demonstrated that 54% of patients (n=62) were experiencing daily seizures (≥30 seizures/month), 28.9% (n=33) were experiencing weekly seizures (4-29 seizures/month), and 6.1% (n=7) had monthly seizures (1-3 seizures/month) while the remaining 11.1% (n=13) had experienced seizures associated with CDD in patients 2 years of age and older.

- Prior to receiving ganaxolone, the most common medications discontinued prior to ganaxolone prescription were levetiracetam (n=59), topiramate (n=46), phenobarbital (n=41), and valproate (n=41), with concomitant use of a mean of 4.46 prior seizure medications.

- The three most frequent seizure-related ICD-10 diagnoses beyond CDD (G40.42) were "Lennox-Gastaut Syndrome" (G40.81x), "epilepsy, unspecified" (G40.9xx), and "other generalized epilepsy syndromes, intractable" (G40.41x).

**Non-pharmacological Interventions**

Additional non-pharmacological interventions included a total of 31 patients on the ketogenic diet and a vagal nerve stimulator; 11 patients were utilizing a combination of the two options.

Two patients reported utilizing a Modified Atkins Diet.

- ACTH, adrenocorticotropic hormone
- Brivaracetam
- Felbamate
- Gabapentin
- Lamotrigine
- Levetiracetam
- Perampanel
- Phenobarbital
- Perinlimid
- Pregabalin
- Rufinamide
- Vigabatrin
- Zonisamide
- Clonazepam
- Clonidine
- Clobazam
- Brivaracetam
- Felbamate
- Gabapentin
- Levetiracetam
- Perampanel
- Phenobarbital
- Perinlimid
- Pregabalin
- Rufinamide
- Vigabatrin
- Zonisamide
- Clonazepam
- Clonidine
- Clobazam

**Conclusions**

- These data provide insights into real-world utilization of ganaxolone in the treatment of CDD-associated seizures, including use in patients with highly refractory epilepsy.

- Dosing information supports both the intention of providers to titrate according to label and to utilize titrations that are slower or achieve a lower initial goal dose compared to label.

- Such data may inform clinical decision-making in the treatment of CDD.

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