Dravet Syndrome Fact Sheet

What is Dravet Syndrome?

- Dravet syndrome is a severe and progressive genetic epilepsy characterized by frequent, prolonged and refractory seizures that usually begin within the first year of life.
- Dravet syndrome is classified as a developmental and epileptic encephalopathy due to the developmental delays and cognitive impairment, in addition to seizure activity, that stem from the genetic mutation that causes the disease.
- Children with Dravet syndrome do not outgrow their condition and the care required can severely impact quality of life for the individual and their family.[1]
- Dravet syndrome is not usually caused by an inherited mutation.
  - In 90% of these patients, the mutation is not found in the patient's parents.[1]
- Approximately 85% of those diagnosed with Dravet syndrome have a mutation of the *SCN1A* gene.[1]
  - The gene encodes the voltage-gated sodium channel type 1 alpha subunit $Na_V1.1$.[2]
- Genetic testing via an epilepsy panel, which tests for *SCN1A* and other genes commonly associated with epilepsy, should be considered with patients exhibiting specific symptoms.
- Dravet syndrome was first identified by French psychiatrist and epileptologist, Charlotte Dravet in 1978, however there are currently no treatments available that address the underlying cause of the disease.

Symptoms and Effects

- The effects of Dravet syndrome are not limited to seizures.[1]
- More than 90% of patients suffer from at least one non-seizure comorbidity, including:
  - Severe intellectual disabilities
  - Motor impairment
  - Autism
  - Sleep abnormalities
  - Severe developmental disabilities
  - Speech impairment
  - Behavioral difficulties

Early Death

- Dravet syndrome has a high rate of premature death due to the severity of this type of epilepsy. Up to 20% of children and adolescents living with Dravet die before adulthood, due to:[3,4,5]
  - Sudden Unexplained Death in Epilepsy (SUDEP)
  - Prolonged seizures
  - Seizure-related accidents
  - Infections

STOKE THERAPEUTICS

A Rare Disease

- Dravet syndrome affects an estimated 35,000 people in the United States, Canada, Japan, Germany, France and the UK. It is not concentrated in a particular geographic area or ethnic group.
- There are an estimated 20,000 people living with Dravet syndrome in the United States.
- About one in 16,000 babies in the United States is born with Dravet syndrome.[1]

Current Treatments for Dravet Syndrome Aim to Control Seizures. No Treatment Addresses the Underlying Genetic Cause of the Disease.

- Most treatments aim to reduce the frequency of seizures and do not address other effects of the disease.
- Despite available treatments, seizures are not adequately controlled in 90% of people with Dravet syndrome.
- Patients typically receive two to four drugs concomitantly, including:
  - Valproic acid (Depakote, Depakene)
  - GABA receptor agonists (Clobazam, Onfi, Frisium)
  - Glutamate blockers, such as topiramate (Topamax)
  - Stiripentol (Diacomit)
  - Cannabidiol (Epidiolex)

More Resources

- For more information about Dravet syndrome, visit:
  - The Dravet Syndrome Foundation: https://www.dravetfoundation.org/
  - NORD National Organization for Rare Disorders https://rarediseases.org/rare-diseases/dravet-syndrome-spectrum/
  - National Institute of Health: https://rarediseases.info.nih.gov/diseases/10430/dravet-syndrome.

REFERENCES

1. "What Is Dravet Syndrome?" Dravet Syndrome Foundation. Retrieved Aug 12, 2019, from www.dravetfoundation.org/what-is-dravet-syndrome/.
2. Escayg A, Goldin A. Sodium channel SCN1A and epilepsy: mutations and mechanisms. Epilepsia. 2010 Sep; 51(9): 1650–1658.
3. Shmuely S, Sisodiya SM, Gunning WB, Sander JW, Thijs RD. Mortality in Dravet syndrome: A review. Epilepsy Behav. 2016 Nov; 64(Pt A):69-74.
4. Cooper MS, Mcintosh A, Crompton DE, McMahon JM, Schneider A, Farrell K, Ganesan V, Gill D, Kivity S, Lerman-Sagie T, McLellan A, Pelekanos J, Ramesh V, Sadleir L, Wirrell E, Scheffer IE. Mortality in Dravet syndrome. Epilepsy Res. 2016 Dec;128:43-47.
5. "Dravet syndrome" NORD National Organization for Rare Disorders. Retrieved Aug 20, 2019, from https://rarediseases.org/rare-diseases/dravet-syndrome-spectrum/