DRAVET SYNDROME

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Dravet syndrome is an intractable developmental and epileptic encephalopathy that begins in the infancy of the children and it significantly impacts the children throughout their lifetime. This is one of the rare diseases with an estimated incidence rate of 1: 15,700 and occurs due to the mutation of sodium channel gene SCN1A.

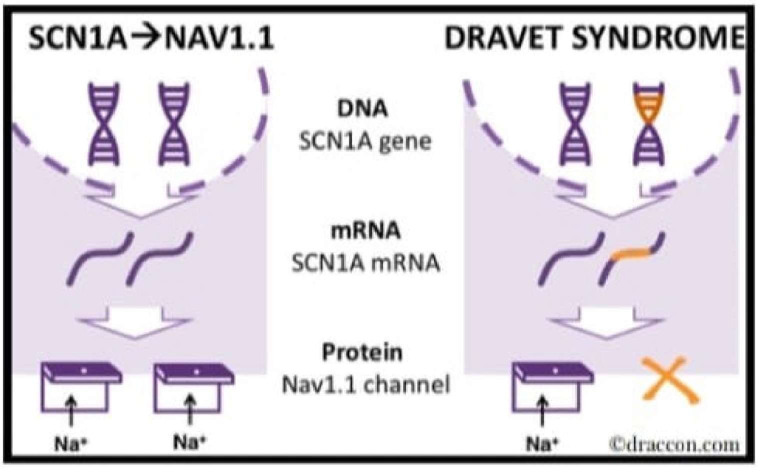
This condition is known as severe myoclonic epilepsy of infancy (SMEI). This condition is classified as developmental and epileptic encephalopathy (also known as DEE). This is a part of a group of severe epilepsies with frequent and difficult to treat seizures and significant developmental delays.

SIGNS AND SYMPTOMS:

Dravet syndrome is an epilepsy syndrome which begins in infancy or early childhood and can include wide range of symptoms from mild to severe. The children affected show focal or generalized convulsive seizures that start before they complete 1 year. (before 15 months of age). They are usually very prolonged involving half of the body and then they switch to another side of the body. The other seizure type emerges after 12 months of age and can be of varying types. In the first five years of life, status epilepticus may occur. These kids have normal development in the first few years of life.

As seizures increase, the developmental skills of the kid start to delay and they lag behind in comparison to their peers. The seizures are unable to be managed by current medications. The other co-morbidities that emerge in second or third year of life are developmental delays and abnormal EEGs. The febrile seizures can be classified into two categories -simple and complex. The febrile seizure lasting less than 15 minutes is termed as simple seizure and if the seizure is considered as complex if it has occurred within 24 hours of another seizure or lasts longer than 15 minutes.

- Prolonged seizures
- Frequent seizures
- Behavioural and developmental delays
- Movement and balance issues
- Orthopedic conditions
- Delayed language and speech issues
- Growth and nutrition issues
- Sleeping difficulties
- Chronic infections
- Sensory integration disorders.
- Disruptions of the autonomous
- Crouched gait
- Impaired dexterity



DIFFERENTIAL DIAGNOSIS

- Myotonic atonic epilepsy
- Lennox-Gastaut syndrome
- Myoclonic epilepsy of infancy
- Genetic epilepsy with febrile seizures plus
- Atypical febrile seizures
- Mitochondrial disorders
- Focal epilepsy
- PCDH19-associated epilepsy

Several genes including SCN2A, SCN8A, GARBA1, GARBARG2, STXBP1, PCDH19 and SCN1B have been reported in DS patients who tested negative for SCN1A mutations.

DIAGNOSIS:

This is mainly clinical diagnosis.

- The typical onset occurs in childhood between 1 to 18 months, most often <12 months.
- There are short and prolonged generalized tonic-clonic seizures or hemiconvulsive seizures.
- Myoclonic seizures appearing by age 2 years, followed by obtundation status, focal seizures with impaired awareness and atypical absence seizures.
- The trigger for these seizures mainly being hyperthermia.
- EEG: Diffuse slowing or generalized discharges
- MRI: Mild generalized atrophy or hippocampal sclerosis
- Genetic testing: SCN1A or other epilepsy related genes.

TREATMENT

The drug approved for DS patients less than 2 years of age is Epidiolex. The first line antoiseizure medications include clobazam and valproate. The second line treatments include stiripentol, topiramate and ketogenic diet. The third line treatments include clonazepam, levetiracetam, zonisamide, ethosuximide and vagal nerve stimulator (VNS). The seizures are difficult to control and the goal is to find the medications to treat the long-term condition.

Treatment options: There is no permanent cure for Dravet syndrome, most of the treatments aim to reduce the seizures.

MORTALITY

The mortality ranges from 15% to 20%. The most common cause of mortality are SUDEP, and status epilepticus