Dravet Syndrome: Addressing the Needs of Patients and Families: Introduction

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ABSTRACT: Dravet syndrome is not one of the most frequent severe epilepsies affecting infants during the first year of life. In the most recent epidemiological study, in Sweden, its estimated incidence was 1 in 33,000 live births. On December 31, 2011, its prevalence was 1 in 45,700 children aged less than 18 years. Nonetheless, it is now well known by many child neurologists for several reasons. First, its genetic aetiology was demonstrated almost 15 years ago, and an animal model was created shortly thereafter, allowing experimental work focused on the underlying mechanisms of the disease. Second, the clinical characteristics of the typical form of Dravet syndrome are well defined, enough to allow early diagnosis. Third, although the epileptic seizures are highly pharmacoresistant, we now have at our disposal a specific therapeutic strategy that allows one to avoid the most severe seizures in a number of patients due to the new drug stiripentol, used in different associations. Nevertheless, this therapeutic strategy should not be limited to seizure control and needs to take into account all other aspects of the disease. The aim of this symposium is to present a synthesis of the diagnosis and treatment of Dravet syndrome with a focus on family needs.

Keywords: Encephalopathy, Dravet syndrome, family needs, genetics, treatment

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Dravet syndrome (previously known as "severe myoclonic epilepsy in infancy") is a severe epilepsy defined in the 1989 international classification[1] by "febrile and afebrile generalized and unilateral, clonic or tonic clonic seizures, that occur in the first year of life in an otherwise normal infant, and are later associated with myoclonus, atypical absences and partial seizures. All seizure types are resistant to antiepileptic drugs. Developmental delay becomes apparent within the second year of life and is followed by definite cognitive impairment and personality disorders." In 2001,[2] Dravet syndrome was included among the epileptic encephalopathies. Its genetic aetiology was first demonstrated the same year by the discovery of a mutation on the *SCN1A* gene in seven patients,[3] and then confirmed in 70-80 % of patients in many other studies. According to the new terminology proposed in the 2010 revision,[4] Dravet syndrome is now recognized as a genetic epilepsy. It is not one of the most frequent severe epilepsies affecting infants in the first year of life. In one recent epidemiological study, in Sweden, its estimated incidence was 1 in 33,000 live births, and its prevalence as of December 31, 2011, was reported to be 1 in 45,700 children aged less than 18 years.[5]

Nonetheless, it is now well known by many child neurologists, and for several reasons. First, it has become a model of genetic epilepsy, and animal models allow experimental studies focused on the underlying mechanisms of the disease.[6] Second, the clinical characteristics of the typical form are defined well enough to allow for an early diagnosis.[7] Third, although the epileptic seizures are highly pharmacoresistant, a specific therapeutic strategy exists, due to the new drug stiripentol, which allows one to avoid the most severe seizures in many patients.[8] Dravet syndrome is not merely epilepsy, as it is an encephalopathy that also causes motor and cognitive impairment and is likely to create a more or less severe handicap that becomes apparent as over time.

There are numerous uncertainties concerning the causes of this complex symptomatology. What are the respective roles of genetic background (including the *SCN1A* mutations and other possible genes and gene modifiers) and the epilepsy itself (including seizure types, seizure frequency, occurrence of *status epilepticus* and environmental contributors)? All these factors should be taken into account for prognosis and treatment. Because it is rare, non-specialists are not yet aware of Dravet syndrome, and there are few possibilities for parents to easily meet other families confronted with the disease. So, when possible, it is important to give the most accurate information on the syndrome to medical professionals and to those involved in the care of patients. That is the aim of this symposium, which proposes topics of particular interest for families. Families always have questions about diagnosis, medical treatment and long-term outcomes. This topic will be covered by Drs. Mary Connolly and Elaine Wirrell. Families also want to provide their children with the best quality of life in spite of the disease, which is also the objective of the doctors who treat them. Dr. Peter Camfield will discuss how doctors can help families in this regard.

Disclosures

Charlotte Dravet has the following disclosure: Biocodex, consultant, honoraria.

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