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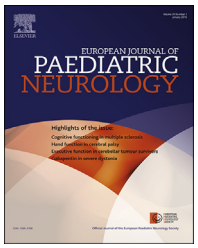
Official Journal of the European Paediatric Neurology Society



Original Article

Clinical and genetic features of paroxysmal kinesigenic dyskinesia in Italian patients

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ARTICLE INFO

Article history:
Received 12 December 2014
Received in revised form
24 August 2015
Accepted 26 August 2015

Keywords:
PRRT2
Paroxysmal kinesigenic dyskinesia
Epilepsy
Dystonia
Autosomal dominant

ABSTRACT

Background: Paroxysmal Kinesigenic Dyskinesia (PKD, OMIM 128200) is the most common type of autosomal dominant Paroxysmal Dyskinesias characterized by attacks of dystonia and choreoathetosis triggered by sudden movements. Recently PRRT2, encoding proline-rich transmembrane protein 2, has been described as the most frequent causative gene for PKD.
Methods: We studied the incidence of PRRT2 mutations in a cohort of 16 PKD patients and their relatives for a total of 39 individuals.
Results: We identify mutations in 10/16 patients and 23 relatives. In 27/33 the mutation was the c.insC649 p.Arg217Profs*8. In 6 individuals from 3 families we found three new mutations: c.insT27 p.Ser9*, c.G967A p.Gly323Arg and c.delCA215_216 p.Thr72Argfs*62. Family history was positive in 9 patients. The mean age of onset was 10 years. Attacks lasted from a few seconds to 1 min and ranged from several per day to some per week, and were generalised in all patients. The main distinctive features of mutation-negative patients were the sporadic occurrence, the absence of association with epilepsy or EEG abnormalities and the poor response to Carbamazepine or other antiepileptic agents.
Conclusions: We report the first cohort of Italian patients mutated in PRRT2 and we confirm that this is the most frequent gene involved in PKD.

1. Introduction

Paroxysmal kinesigenic dyskinesia (PKD, OMIM 128200) is the most common type of Paroxysmal Dyskinesias and is characterized by recurrent and brief attacks of dystonia and choreoathetosis triggered by sudden movements.[1] It is commonly transmitted in an autosomal dominant mode of inheritance.[2] The diagnostic criteria for idiopathic PKD

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http://dx.doi.org/10.1016/j.ejpn.2015.08.006

Table 1 – Patients clinical features.

Patient	Family	Gender	Age (years)	Family history	Age at onset (years)	Phenomenology of attack	Localisation	Frequency of attacks
1	fam 1	f	19	BFIS	5	Choreoathetosis	Generalized	Several a day
2	fam 2	f	20	PKD	17	Dystonia	Unilateral	Several a week
3	fam 2	m	Adult	PKD	Never	None	None	None
4	fam 3	m	16	PKD	12	Dystonia	Generalized	Several a week
5	fam 3	m	Adult	PKD	12	Dystonia	Generalized	Several a week
6	fam 4	m	11	PKD migraine	8	Dystonia	Unilateral	Several a day
7	fam 4	m	Adult	PKD	12	Dystonia	Unilateral	Several a day
8	fam 5	f	19	PKD epilepsy	7 1/2	Dystonia	Generalized	Several a day
9	fam 5	f	17	PKD epilepsy	11	Choreoathetosis	Generalized	Several a day
10	fam 5	m	Adult	PKD	Infancy	Choreoathetosis	Generalized	Unknown
11	fam 6	m	11	PKD BFIS	9	Dystonia and chorea with ballic mov	Generalized	Several a day
12	fam 6	f	Adult	PKD BFIS	13	Dystonia with ballic mov	Upper limbs	Monthly
13	fam 7	m	17	PKD	14	Dystonia	Generalized	Several a day
14	fam 7	f	Adult	PKD		No	No	None
15	fam 8	f	Adult	PKD	10	Dystonia with ballic mov	Unilateral	Several a week
16	fam 9	m	29	PKD	8	Dystonia	Generalized	Several a week
17	fam 9	f	Adult	PKD	Never	No	No	No
18	fam 10	f	34	PKD	12	Dystonia, choreoathetosis	Local, secondary generalized	Several a day
19	fam 10	f	Adult	PKD	Never	No	No	None
20	fam 10	f	Adult	PKD	13	Dystonia	No	Unknown
21	fam 10	f	Adult	PKD	40	Dystonia	Local secondary generalized	Unknown
22	fam 11	f	16	No	2	Choreoathetosis	Unilateral	Several a day
23	fam 12	m	18	No	6 1/2	Dystonia	Local (lower limbs)	Several a day
24	fam 13	f	19	No	2 1/2	Choreoathetosis with ballic mov	Generalized	Several a day
25	fam 14	m	12	Migraine	7 1/2	Choreoathetosis	Generalized	Several a day
26	fam 15	m	12	No	3	Choreoathetosis	Generalized	Several a day
27	fam 16	m	19	No	8	Dystonia	Generalized	Several a day

m: male; f: female; BFIS: benign infantile seizures; CBZ: carbamazepine; TPM: topiramate; VPA: valproic acid; N: normal.