

Table e-2 Epilepsy characteristics in all patients with biallelic variants in *QARS*.

Patient ID	Epilepsy onset			Epilepsy at follow-up		
	Onset	Seizure type	EEG	Seizure type	Seizure frequency / clusters	Eliciting factors
New patients						
1	1 h after birth	Myoclonus, and tonic-clonic seizures	Diffuse alterations	Myoclonic, tonic-clonic	All days for all life (several crises/day), with benzodiazepines, she was able to sleep a few hours	Noise, light
2	1 h after birth	Focal epilepsy with focal seizures with secondary generalization	Unstructured and dysmature background activity, hypersynchronous activity, pre-hypsarrhythmia, focus frontal-temporal with sharp-waves	Focal epilepsy with focal seizures with secondary generalization	1 seizure per month	Infections
3	-	no epilepsy	Low voltage, multifocal epileptic discharges	none	-	-
4	n.r.	Seizures only evident during episode of meningoencephalitis	Encephalopathy during episode of meningoencephalitis	none	seizure free at follow up	Meningoencephalitis
5	5.5 months	Focal seizures and spasms	Modified hypsarhythmia	Focal seizure	1 seizure per 3 months	Fever
6	2.5 months	Tonic seizures	Multifocal epileptic discharges, primarily occipital	Tonic seizures, focal clonic seizures, status epilepticus	Several (clusters of) seizures/ day, also periods of lower seizure frequency (1/ week)	Viral infections
7	2 h after birth	Myoclonic seizures	Severe background disorganization and intermittent thetarythm	Myoclonic seizures	from 2-3 per day to 1/ week	n.r.
8	3 h after birth	Focal tonic and myoclonic seizures	at onset of epilepsy severe EEG background disorganization and intermittent thetarhythm, in the further course bilateral asynchronous spikes and sharp waves	Different forms of seizures, tonic, myoclonic, more often focal than generalized	variable, changing from several seizures per day to periods with around 1 seizure/ week	none
9	1 h after birth	Myoclonic seizures, status epilepticus	Status epilepticus. Encephalopatic background activity and multiple short runs of paroxysmal activity, with interchanging frequency, multifocal	Clonic, multifocal, tonic, GTC	hourly	Loud noises, a lot people etc.
10	4 th day	Multifocal clonic and tonic seizures	n.r.	Multifocal clonic and tonic seizures	Multiple seizures per day	none
Previously published patients with additional data						
11	1 h after birth	Multifocal seizures	Nonspecific: diffuse slowing of background activity, with poor organization, associated with focal spikes with variable localization	Multifocal seizures	20-50 per day	n.r.
12	1.5 month	Multifocal seizures	Nonspecific: diffuse slowing of background activity, with poor organization, associated to focal spikes on variable localization	Multifocal seizures	20-50 per day	n.r.
Previously published patients						
13	1 h after birth	Tonic, focal clonic, persistent status epilepticus (10-12 hours)	n.r.	n.r.	daily	n.r.
14	1 st day	Frequent, recurring and long-lasting	n.r.	n.r.	n.r.	n.r.
15	2 nd day	GTC, clusters of seizures	Seizures captured from different regions, slow, dysrhythmic background, multifocal spikes and sharp waves	Diffuse encephalopathy	Ongoing	n.r.
16	-	no epilepsy reported	-	-	-	-
17	-	no epilepsy reported	-	-	-	-
18	-	no epilepsy reported	-	-	-	-
19	4 th day	Perioral twitch, tonic seizures with cyanosis, eye deviation and head turning	Right hemispheric spike, hypsarhythmia, multifocal spike, spike and wave	Focal seizures	Ongoing	Fever
20	1 st day	Tonic seizure with cyanosis, eye deviation and head turning	Multifocal sharp, spike, spike and wave, suppression burst, high-voltage delta and multifocal spike	Focal seizures	Ongoing	n.r.
21	n.r.	Febrile seizures	n.r.	n.r.	Seizure free	n.r
22	n.r.	Epileptic encephalopathy	n.r.	n.r.	n.r.	n.r.

n.r.: not reported, GTC: Generalized Tonic Clonic seizure