

Table S1. Clinical characteristics of the cohort.

Patient	Gender	Age of seizure onset (months)	1 st MRI brain	Age of 1 st MRI (months)	2 nd MRI brain	Age of 2 nd MRI (years)	Seizure outcome	Current ASMs	Development outcome	Clinical diagnosis / Seizure type	Consanguinity	Similar cases in the family
1.	M	3 months	Normal	3	Normal	2	Controlled	3	GDD	LGS	Yes	Yes
2.	M	7	Normal	2	Normal	2	Controlled	2	Normal	Generalized	No	No
3.	M	2	Normal	1	Normal	2	Controlled	1	Normal	Generalized	No	No
4.	F	7	Normal	2	Normal	4	Active epilepsy	3	GDD	LGS	Yes	No
5.	F	6	Normal	2	Atrophy	3	Active epilepsy	2	GDD	Generalized	No	No
6.	M	13	Heterotopia	5	Heterotopia	2	Active epilepsy	2	GDD	LGS	Yes	No
7.	F	2	Dysgenesis of corpus callosum	3	Dysgenesis of corpus callosum	2	Active epilepsy	3	GDD	LGS	Yes	Yes
8.	F	12	Hydrocephalus	3	Hydrocephalus	2	Active epilepsy	2	GDD	Focal	Yes	No
9.	M	6	Hemimegalencephaly	2	Hemimegalencephaly	2	Active epilepsy	4	GDD	Focal	No	No
10	F	6	Hydrocephalus	2	Hydrocephalus	2	Active epilepsy	3	GDD	Focal	No	No
11	M	7	Cobblestone lissencephaly	1	cobblestone lissencephaly	3	Active epilepsy	4	GDD	LGS	Yes	No
12	M	8	Basal ganglia enhancement	5	Basal ganglia enhancement	2	Active epilepsy	1	GDD	Generalized	Yes	No

13	F	4	Normal	4	Delayed myelination	3	Active epilepsy	2	GDD	Generalized	Yes	No
14	F	7	Hydrocephalus	6	Hydrocephalus	2	Active epilepsy	2	ADHD	Generalized	No	No
15	F	9	Normal	3	Delayed myelination	2	Active epilepsy	2	ASD	Generalized	Yes	No
16	F	10	Thinning of the corpus callosum	2	Thinning of the corpus callosum	2	Active epilepsy	2	GDD	LGS	Yes	No
17	M	4	Normal	4	PVL	2	Controlled	2	GDD	Focal	No	No
18	M	4	Normal	3	PVL	2	Active epilepsy	3	GDD	Focal	No	No
19	F	3	Normal	2	White matter changes	4	Active epilepsy	2	GDD	Generalized	Yes	No
20	M	4	Normal	3	White matter changes	3	Active epilepsy	3	GDD	Generalized	Yes	No
21	F	7	Delayed myelination	3	Delayed myelination	3	Active epilepsy	1	GDD	LGS	No	No
22	F	6	Delayed myelination	3	Delayed myelination	2	Controlled	2	GDD	Focal	No	No
23	F	4	Normal	2	Dilation of cerebral ventricles (atrophy)	4	Active epilepsy	2	GDD	Generalized	No	No
24	M	8	Hypoxic ischemic encephalopathy	1	Hypoxic ischemic encephalopathy	2	Active epilepsy	3	GDD	LGS	No	No
25	F	5	Normal	2	Heterotopia	2	Active epilepsy	3	GDD	LGS	Yes	No
26	M	9	Hypoxic ischemic encephalopathy	3	Hypoxic ischemic encephalopathy	2	Controlled	2	GDD	LGS	Yes	No

27	M	11	Dysgenesis of corpus callosum	3	Dysgenesis of corpus callosum	2	Active epilepsy	3	GDD	Generalized	Yes	No
28	M	12	Normal	4	Hypoxic ischemic encephalopathy	3	Controlled	1	Speech delay	Generalized	Yes	No
29	F	3	Delayed myelination	3	Delayed myelination	2	Controlled	2	Speech delay	LGS	Yes	No
30	F	7	Thinning of the corpus callosum	3	Thinning of the corpus callosum	1	Active epilepsy	2	Intellectual delay	Focal	Yes	No
31	M	6	Normal	3	Normal	2	Active epilepsy	3	Intellectual delay	Focal	Yes	No
32	F	4	Dysgenesis of corpus callosum	4	Dysgenesis of corpus callosum	2	Controlled	2	Intellectual delay	Generalized	Yes	No
33	F	5	Normal	5	Normal	2	Active epilepsy	3	Speech delay	Generalized	No	No
34	F	4	Hypoxic ischemic encephalopathy	1	Hypoxic ischemic encephalopathy	3	Active epilepsy	3	Speech delay	Focal	Yes	No
35	F	8	Hypoxic ischemic encephalopathy	1	Hypoxic ischemic encephalopathy	3	Controlled	1	Intellectual delay	Generalized	No	No
36	M	3	Normal	2	Delayed myelination	2	Active epilepsy	2	Speech delay	Generalized	Yes	No
37	F	10	Normal	2	Hypoxic ischemic encephalopathy	1	Active epilepsy	3	GDD	Generalized	No	No
38	F	9	Normal	1	Thinning of the corpus callosum	2	Active epilepsy	3	GDD	Generalized	Yes	No
39	F	6	Heterotopia	3	Heterotopia	2	Active epilepsy	3	GDD	Generalized	Yes	No
40	M	4	Thinning of the corpus callosum	3	Thinning of the corpus callosum	3	Controlled	3	Intellectual delay	Generalized	No	No
41	F	7	Normal	1	Normal	3	Active	3	Speech	Generalized	Yes	No

							epilepsy		delay	zed		
42	M	3	Normal	1	Normal	3	Active epilepsy	2	Normal	Focal	No	No
43	M	5	Normal	2	Cortical tubers	2	Active epilepsy	2	Intellectual delay	Generalized	Yes	No
44	F	3	Hypoxic ischemic encephalopathy	3	Hypoxic ischemic encephalopathy	3	Active epilepsy	2	GDD	LGS	No	No
45	M	7	Normal	4	Meningitis sequelae	1	Controlled	2	Intellectual delay	LGS	Yes	No
46	F	5	Dilation of cerebral ventricles	1	Dilation of cerebral ventricles	2	Active epilepsy	2	Intellectual delay	Generalized	Yes	No
47	M	4	Hypoxic ischemic encephalopathy	2	Hypoxic ischemic encephalopathy	2	Active epilepsy	3	GDD	LGS	No	No
48	F	4	Normal	5	Normal	2	Controlled	2	Normal	Generalized	Yes	No
49	F	3	Normal	3	Cortical tubers	3	Active epilepsy	2	ADHD/ASD	Focal	No	No
50	F	6	Normal	1	Dilation of cerebral ventricles	4	Controlled	2	Normal	Focal	Yes	No
51	F	1	Delayed myelination	2	Delayed myelination	3	Active epilepsy	2	Intellectual delay	Generalized	Yes	No
52	M	6	Thinning of the corpus callosum	4	Thinning of the corpus callosum	3	Controlled	2	Speech delay	Generalized	No	No
53	M	8	Normal	1	Delayed myelination	4	Active epilepsy	3	Intellectual delay	Focal	Yes	No
54	F	5	Normal	5	Hypoxic ischemic encephalopathy	2	Active epilepsy	3	Intellectual delay	LGS	Yes	No
55	F	4	Delayed	3	Delayed	2	Active	2	GDD	Generalized	No	No

			myelination		myelination		epilepsy			zed		
56	M	3	Normal	2	Hypoxic ischemic encephalopathy	2	Active epilepsy	3	Speech delay	Generali zed	No	No

LGS: Lennox-Gastaut syndrome

ASM: antiseizure medications

GDD: global developmental delay.

PVL: periventricular leukomalacia

ADHD: Attention deficit hyperactivity disorder

ASD: autism spectrum disorder