CLINICAL PROFILE AND SHORT TERM SEIZURE OUTCOME IN CHILDREN WITH GENETIC GENERALIZED EPILEPSIES

DR. KAVITA SRIVASTAVA, DR. SAAHIL SAVASKAR, SNEHA MAHAJAN, DR. BRAHMINI KORRAI, DR. SUREKHA RAJADHYAKSHA

BHARATI VIDYAPEETH DEEMED UNIVERSITY MEDICAL COLLEGE, PUNE, INDIA

ICNC 2022
17th INTERNATIONAL CHILD NEUROLOGY CONGRESS
ANTALYA, TURKEY | OCTOBER 3-7, 2022

INTRODUCTION

- GENETIC GENERALIZED EPILEPSIES (GGE) are broad group of epilepsies with generalized seizure types and generalised spike waves based on a presumed genetic etiology. [1]
- They are a heterogenous group with high rates of remission in Childhood absence epilepsy (CAE), while Juvenile myoclonic epilepsy (JME), Juvenile absence epilepsy (JAE) needing life long treatment though easily controlled on appropriate ASMs.
- It is difficult to prognosticate due to heterogeneity of available studies.[2] There is paucity of data from India, we studied the short term outcomes in children with GGE.

OBJECTIVES

PRIMARY OBJECTIVE-

1. To assess the proportion of children with GGE with good seizure control at 3 months and 6 months follow up after initiating the treatment.

SECONDARY OBJECTIVEs-

1. To assess the proportion of children with GGE with good seizure control at 1 year and 2year followup.
2. To identify the electro-clinical factors predicting the seizure outcome at 3m, 6m, 1 year and 2 years

Definition of seizure outcomes-

GOOD OUTCOME

1. No Seizure within 3 months of initiation of therapy.
2. Required one or no ASM for seizure control

POOR OUTCOME

1. Any Seizure /status within 3months of initiation of therapy.
2. No control/ >1 ASM to control seizures

MATERIALS AND METHODS

Retrospective observational study

Analysis of patients from January 2010- January 2022

Inclusion criteria

1. All children under 18 years of age diagnosed with GGE (ILAE)[1]
2. Children with normal neurocognitive and developmental status with no neurological deficits prior to the onset of epilepsy.

Exclusion criteria

1. Symotomatic etiology
2. Abnormal EEG background as in DEE, CSWS, LGS.
3. Neurodegenerative disorders

All Statistical Analysis was done by using SPSS software with version 25.0. Chi square test was used as test of significance for categorical data.

Through out results 5% level of significance was used, all results was shown by 95% of confidence. P-value less than 0.05 considered as significant.

RESULTS

- 130 — Enrolled in studies; 46 no follow up
- 84 — 3 month follow up; Good – 50 , Bad - 34
- 59 — 6 month follow up; Good – 40 , Bad - 19
- 42 — 12 month follow up; Good – 32 , Bad - 10
- 28 — 24 month follow up; Good – 25 , Bad - 3

Diagnosis	No.
GEFS+	23
JME	15
CAE	6
JAE	5
EMAS	3
Doose, Jeavons	2+1
Other GGE	75

RESULTS

Table 1

Clinical Factors	Parameters	3 months (n =84)			6 months (n =59)			12 months (n = 42)			24 months (n = 28)		
		Good N = 50	Poor N = 34	P - Value	Good N = 40	Poor N = 19	P - Value	Good N = 32	Poor N = 10	P - Value	Good N = 25	Poor N = 3	P - Value
Age of onset	< = 10 year	32	20	0.802	27	8	0.116	16	5	0.393	12	2	1
	> 10 year	38	28		13	11		16	5		13	1	
Gender	Male	24	18	0.824	19	8	0.913	13	3	0.817	9	1	0.585
	Female	42	23		21	11		19	7		16	2	
GTCS	Present	18	15	0.824	16	5	0.462	11	5	0.606	8	2	0.585
	Absent	32	19		24	14		21	5		17	1	
Absence seizures	Present	4	8	0.093	5	4	0.641	6	1	0.871	4	0	0.901
	Absent	46	26		35	15		26	9		21	3	
Family history of seizures	Present	18	7	0.203	11	6	0.988	9	1	0.453	6	1	0.724
	Absent	32	27		29	15		23	9		19	2	
Prior Febrile Seizures	Present	15	7	0.478	11	4	0.833	4	3	0.417	4	2	0.202
	Absent	35	27		29	15		28	7		21	1	
Myoclonic jerks	Present	7	11	0.082	8	6	0.516	9	3	0.774	8	1	0.544
	Absent	43	23		32	13		23	7		17	2	
Focal seizures	Present	14	1	0.008	8	2	0.592	6	1	0.871	6	0	0.832
	Absent	36	33		32	17		26	9		19	3	
Syndrome	JME	5	8	0.168	6	4	0.835	7	3	0.919	6	1	0.832
	Non JME	45	26		34	15		25	7		19	2	
Multiple seizure types	Present	8	10	0.23	8	7	0.285	9	4	0.751	10	0	0.984
	Absent	42	24		32	12		23	6		15	3	
Nocturnal Seizures	Present	7	4	0.974	5	2	0.832	1	4	0.009	1	0	0.633
	Absent	43	30		35	17		31	6		24	3	

Table 2

EEG Factors	Present/ Absent	3 months (n =84)			6 months (n =59)			12 months (n = 42)			24 months (n = 28)		
		Good N = 50	Poor N = 34	P - Value	Good N = 40	Poor N = 19	P - Value	Good N = 32	Poor N = 10	P - Value	Good N = 25	Poor N = 3	P - Value
PPR	Present	12	6	0.67	6	5	0.493	6	3	0.752	7	0	0.632
	Absent	38	28		34	14		26	7		18	3	
Clinical seizure during EEG	Present	8	11	0.135	8	8	0.141	8	5	0.270	8	0	0.632
	Absent	42	23		32	11		24	5		17	3	
Generalized Discharges	Symmetrical	33	25	0.622	26	14	0.712	21	8	0.640	15	3	0.984
	Asymmetrical	17	9		14	5		11	2		10	0	
Focal seizures	Present	17	14	0.660	20	6	0.293	15	3	0.565	10	1	1
	Absent	33	20		20	13		17	7		15	2	
Discharges on HV	Present	12	12	0.379	11	10	0.111	13	5	0.875	13	1	0.724
	Absent	38	22		29	9		19	5		12	2	
Generalized discharges in sleep	Present	30	24	0.445	27	14	0.857	26	5	0.121	19	2	0.724
								6	5				
	Absent	20	10		13	5					6	1	
Poly-spike wave discharges	Present	17	13	0.868	15	5	0.579	11	3	0.898	8	0	0.763
	Absent	33	21		25	14		21	7		17	3	
Dominance	Frontal	21	13	0.905	14	7	0.878	16	1	0.06	13	1	1
	Non - Frontal	29	21		26	12		16	9		12	2	

COMPARISON WITH OTHER STUDIES

Reference	Study Design	Syndrome	Factors with poor outcome
Szaflarski JP et al (2013)[3]	Retrospective, Seizure control in 82% IGE, 85% JME	IGE	Focal slowing , focal epileptiform activity.
Mohanraj R et al (2007)[4]	Retrospective Study in adults, 66% controlled	IGE	History of febrile seizures.
Gomez-Ibañez A et al (2017)[5]	Retrospective, 43.7% drug refractory	IGE	Early age of onset (below 13 years), Multiple sz types, GSWDs + GPSWDs

LIMITATIONS

1. Poor follow up rates, hence can't be sure about the
2. Evaluation of cognitive , behavior and scholastic outcomes was not done.

CONCLUSION

1. Good seizure control noted in 60% at 3 months, 68% at 6 months, 76% at 1 year .
2. No clinical or EEG related factor predicted a consistent good or poor outcome.

RECOMMENDATIONS

1. Large prospective study is needed to study the outcome of child with GGE.
2. Cognitive , behavior and scholastic outcomes should be evaluated along with seizure control.

ACKNOWLEDGEMENTS

Our patients, EEG technicians - Mr. Taru, Monica
Head of Dept Dr. (Prof) Sanjay Lalwani

REFERENCES

1. Hirsch E, French J, Scheffer I, Zuberi S, Trinka E, Specchio N. Definition of the Idiopathic Generalized Epilepsy Syndromes: Position Paper by the ILAE Task Force on Nosology and Definitions. Epilepsia. 2022

2. Seneviratne U, Cook M, D'Souza W. The prognosis of idiopathic generalized epilepsy. Epilepsia 2012.

3. Szaflarski JP, Lindsell CJ, Zakaria T, Banks C, Privitera MD. Seizure control in patients with idiopathic generalized epilepsies: EEG determinants of medication response. Epilepsy Behav. 2010

4. Mohanraj R, Brodie MJ. Outcomes of newly diagnosed idiopathic generalized epilepsy syndromes in a non-pediatric setting. Acta neurologica scandinavica. 2007

5. Gomez- Ibanez A, McLachlan RS, Mirsattari SM, eta al. Prognostic factors in patients with refractory idiopathic generalized epilepsy. Epilepsy Res 2017