ORIGINAL RESEARCH

Incidence of status epilepticus patients with eclampsia

[1]Dr. Vimlesh Kumar Verma, [2]Dr.VirendraVerma, [3]Dr. Ekta Chaudhary

[1,2]Associate Professor, Department of Medicine, RajashriDashrath Autonomous State Medical College, Ayodhya, Uttar Pradesh, India
[3]Associate Professor, Department of Obstetrics and Gynaecology, Hind Institute of Medical Sciences Ataria, Sitapur Uttar Pradesh, India

Corresponding Author
Dr. Ekta Chaudhary
Associate Professor, Department of Obstetrics and Gynaecology, Hind Institute of Medical Sciences Ataria, Sitapur Uttar Pradesh, India
Email: drekta11june@gmail.com

Received: 22 March, 2023 Accepted: 30 April, 2023

ABSTRACT
Background: The present study was undertaken for assessing the incidence of status epilepticus patients with eclampsia. **Materials & methods:** A total of 100 patients with confirmed diagnosis of eclampsia were enrolled. Complete demographic and clinical details of all the subjects was obtained. Thorough medical evaluation of the patients was done. Each patient with seizures is systematically addressed for EEG study by the neurologic consulting team. Subjects younger than 18 years old were not included. SE was defined as the clinical occurrence of ongoing epileptic or repeated epileptic seizures without full recovery in between for more than 30 min. Incidence of status epilepticus was recorded. **Results:** Status epilepticus was seen in 20 percent of the patients. Educational qualification was found to be significant risk factor for occurrence of status epilepticus among eclampsia patients. **Conclusion:** Rare atypical disease symptoms are challenging to predict and prevent, but as doctors, we must be ready to treat them when they occur. Even in patients who do not exhibit any prodromal symptoms of preeclampsia, seizures in their atypical form can occur and turn a happy occasion in a mother's life into a nightmare.

Key words: Status epilepticus, Eclampsia

INTRODUCTION

Eclampsia is a known complication of preeclampsia during pregnancy and is associated with morbidity and mortality of both the mother and fetus if not properly diagnosed. Preeclampsia and eclampsia are of the four categories associated with hypertensive disorders of pregnancy. The other three categories include chronic hypertension, gestational hypertension, and preeclampsia superimposed on chronic hypertension.[1, 2]

It is important for a physician to look for signs and symptoms of eclampsia as it can help prevent and decrease mortality in many cases, especially primigravida patients, who are generally more prone to develop pregnancy-induced hypertension (PIH) after 20 weeks of pregnancy. A clinician should always look for side effects of MgSO4 as it can lead to respiratory arrest and can cause mortality in patients. The best treatment for eclampsia is to abort or deliver the fetus, whichever is possible according to the age of gestation.[3, 4]

Status epilepticus is a neurological emergency requiring immediate evaluation and management to prevent significant morbidity or mortality. Previously, status epilepticus was defined as a seizure with a duration equal to or greater than 30 minutes or a series of seizures in which the patient does not regain normal mental status between seizures. The Neurocritical Care Society guidelines from 2012 revised the definition to a seizure with 5 minutes or more of continuous clinical and/or electrographic seizure activity or recurrent seizure activity without recovery between seizures. Status epilepticus may be convulsive, non-convulsive, focal motor, myoclonic, and any can become refractory.[5- 7]Hence; under the light of above-mentioned data, the present study was undertaken for assessing the incidence of status epilepticus patients with eclampsia.

MATERIALS & METHODS

The present study was undertaken for assessing the incidence of status epilepticus patients with

eclampsia. A total of 100 patients with confirmed diagnosis of eclampsia were enrolled. Complete demographic and clinical details of all the subjects was obtained. Thorough medical evaluation of the patients was done. Each patient with seizures is systematically addressed for EEG study by the neurologic consulting team. Subjects younger than 18 years old were not included. SE was defined as the clinical occurrence of ongoing epileptic or repeated epileptic seizures without full recovery in between for more than 30 min. Incidence of status epilepticus was recorded. Evaluation and assessment of all the results was done using SPSS software. Univariate regression curve was used for evaluation of level of significance.

RESULTS

Out of 100 patients, 58 percent belonged to the age group of less than 30 years. 63 percent of the patients were of urban residence. 13 percent of the patients were illiterate while 18 percent of the patients were educated upto graduation. 32 percent of the patients belonged to upper class. Status epilepticus was seen in 20 percent of the patients. Educational qualification was found to be significant risk factor for occurrence of status epilepticus among eclampsia patients.

Table 1: Demographic data

Variable		Number	Percentage
Age group (years)	Less than 30	58	58
	More than 30	42	42
Residence	Rural	37	37
	Urban	63	63
Educational quantification	Illiterate	13	13
	Upto primary	20	20
	Upto secondary	12	12
	Upto graduation	18	18
	Postgraduation	37	37
Socio-economic status	Upper class	32	32
	Middle class	37	37
	Lower class	31	31

Table 2: Incidence of status epilepticus

Status epilepticus	Number	Percentage
Present	20	20
Absent	80	80
Total	100	100

Table 3: Correlation of demographic data and status epilepticus

Variable		Status epilepticus		p- value
		Present	Absent	
Age group (years)	Less than 30	12	46	0.312
	More than 30	8	34	
Residence	Rural	7	30	0.774
	Urban	13	50	
Educational quantification	Illiterate	3	10	0.000*
	Upto primary	4	16	
	Upto secondary	4	8	
	Upto graduation	3	15	
	Postgraduation	6	31	
Socio-economic status	Upper class	5	27	0.122
	Middle class	7	30	
	Lower class	8	23	

***: Significant**

DISCUSSION

Preeclampsia, eclampsia, and Hemolysis, Elevated Liver Enzyme Levels and Low Platelet Levels (HELLP) syndrome are life-threatening hypertensive conditions that occur in pregnant woman. Preeclampsia is a multisystem disorder which complicates 3%–8% of all pregnancies. The diagnostic criteria of preeclampsia include (1) systolic blood pressure ≥140 mmHg or diastolic blood pressure ≥90 mmHg on two occasions at least 4 h apart and (2) proteinuria ≥300 mg/day in a woman with a gestational age of >20 weeks with previously normal blood pressures. Eclampsia is defined as a convulsive episode or altered level of consciousness

occurring in the setting of preeclampsia, provided that there is no other cause of seizures.[8, 9] Status epilepticus (SE) is a common medical emergency associated with high morbidity, if not mortality. Mortality from SE varies from 3–50% in different studies. In elderly patients, refractory status epilepticus (RSE) may lead to death in over 76% cases. The lifetime prevalence of SE in persons with epilepsy range from 1–16%. Precise epidemiological data for SE are not available for India. It has been estimated that up to 150,000 cases of SE occur annually in the US, with 55,000 associated death.[10, 11] Hence; under the light of above-mentioned data, the present study was undertaken for assessing the incidence of status epilepticus patients with eclampsia.

Out of 100 patients, 58 percent belonged to the age group of less than 30 years. 63 percent of the patients were of urban residence. 13 percent of the patients were illiterate while 18 percent of the patients were educated upto graduation. 32 percent of the patients belonged to upper class. Status epilepticus was seen in 20 percent of the patients. Rajiv KR et al, in a previous study devised a protocol for the management of SE related to pregnancy in a cohort of female patients admitted with SE during pregnancy. There were 17 women who had SE related to pregnancy, of whom 10 had refractory SE. The various causes of refractory SE were eclampsia (N = 2), posterior reversible encephalopathy syndrome (PRES) due to various causes other than eclampsia (N = 3), cortical venous thrombosis (CVT) [N = 3], subarachnoid hemorrhage (SAH) [N = 1], and N-methyl-D-aspartate (NMDA) receptor antibody-mediated encephalitis (N = 1). Six out of 10 women with refractory SE (60%) and five out of 10 fetuses (50%) had a good outcome. There is a dearth of literature with regards to SE related to pregnancy and little or no guidelines exist for its management. Awareness about the diverse etiologies other than eclampsia is important. A protocol-based approach to the diagnosis and management of SE is necessary to ensure best outcomes.[12]

Educational qualification was found to be significant risk factor for occurrence of status epilepticus among eclampsia patients. Mansoor A et al, in a previous study, assessed data of all patients admitted to the pediatric intensive care unit (PICU) with a provisional diagnosis of RSE at a tertiary care hospital. Among the 687 patients who presented to the PICU with seizures, 50 (7.27%) patients were eventually diagnosed with RSE during the two-year period. The majority of the patients were male and less than one year of age. Infectious causes predominated our data cohort, and a four-drug regimen consisting of phenytoin, levetiracetam, valproic acid, and midazolam was able to terminate RSE in the majority of the patients in our setting (70%). The mortality rate was noted to be 22% among patients with RSE.[13]

CONCLUSION

Rare atypical disease symptoms are challenging to predict and prevent, but as doctors, we must be ready to treat them when they occur. Even in patients who do not exhibit any prodromal symptoms of preeclampsia, seizures in their atypical form can occur and turn a happy occasion in a mother's life into a nightmare.

REFERENCES

1. Wilkerson RG, Ogunbodede AC. Hypertensive Disorders of Pregnancy. Emerg Med Clin North Am. 2019 May;37(2):301-316.
2. Sutton ALM, Harper LM, Tita ATN. Hypertensive Disorders in Pregnancy. ObstetGynecolClin North Am. 2018 Jun;45(2):333-347.
3. Leeman L, Dresang LT, Fontaine P. Hypertensive Disorders of Pregnancy. Am Fam Physician. 2016 Jan 15;93(2):121-7.
4. Arulkumaran N, Lightstone L. Severe pre-eclampsia and hypertensive crises. Best Pract Res ClinObstetGynaecol. 2013 Dec;27(6):877-84.
5. Xu MY. Poststroke seizure: optimising its management. Stroke Vasc Neurol. 2019 Mar;4(1):48-56.
6. Horváth L, Fekete I, Molnár M,Válóczy R, Márton S, Fekete K. The Outcome of Status Epilepticus and Long-Term Follow-Up. Front Neurol. 2019;10:427.
7. Peng P, Peng J, Yin F, Deng X, Chen C, He F, Wang X, Guang S, Mao L. Ketogenic Diet as a Treatment for Super-Refractory Status Epilepticus in Febrile Infection-Related Epilepsy Syndrome. Front Neurol. 2019;10:423.
8. Carty DM, Delles C, Dominiczak AF. Preeclampsia and future maternal health. J Hypertens. 2010;28:1349–55.
9. Uzan J, Carbonnel M, Piconne O, Asmar R, Ayoubi JM. Pre-eclampsia: Pathophysiology, diagnosis, and management. Vasc Health Risk Manag. 2011;7:467–74
10. Logroscino G, Hesdorffer DC, Cascino GD, Annegers JF, Bagiella E, Hauser WA. Long-term mortality after a first episode of status epilepticus. Neurology. 2002;58:537–41.
11. DeLorenzo RJ, Pellock JM, Towne AR, Boggs JG. Epidemiology of status epilepticus. J ClinNeurophysiol. 1995;12:316–25
12. Rajiv KR, Menon RN, Sukumaran S, Cherian A, Thomas SV, Nair M, Radhakrishnan A. Status epilepticus related to pregnancy: Devising a protocol for use in the intensive care unit. Neurol India 2018;66:1629-33
13. Mansoor A, Kumar S, Malik L, et al. (September 14, 2022) The Frequency of Refractory Status Epilepticus and Its Outcome in a Tertiary Care Hospital in Pakistan: A Retrospective Study. Cureus 14(9): e29149