

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20193770>

Original Research Article

A clinical observational study in cases of eclampsia

Bipin Kanani, Nirav J. Garala*

Department of Obstetrics and Gynecology, P. D. U. Medical College, Rajkot, Gujarat, India

Received: 03 August 2019

Accepted: 19 August 2019

***Correspondence:**

Dr. Nirav J. Garala,

E-mail: ngarala@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Eclampsia is a life threatening condition and one of the leading causes of maternal deaths worldwide. It is also associated with complications like acute renal failure, DIC, postpartum hemorrhage, etc. and adverse fetal outcomes. Hence we aimed to study fetomaternal outcomes in cases of Eclampsia.

Methods: A total of 75 cases of eclampsia out of 13524 deliveries were evaluated, from 1st January 2016 to 30th June 2017 at RZ Hospital, a government tertiary referral centre. Maternal outcomes were studied for its complications, effectiveness of magnesium sulphate treatment, fetal outcome and mode of delivery.

Results: Incidence rate of eclampsia was 0.55%, 62.66% of all cases were primigravida, 76% of cases were in age group of 21-26 years, 84% cases were from lower socio economic status, maternal mortality occurred in 2 of 75 cases. 66.67% of patients were of term pregnancy (37 to 42 weeks). 71%(53) patients delivered vaginally out of which 9 deliveries were spontaneous and 44 deliveries were induced vaginal delivery. 22 patients required caesarean section.

Conclusions: Early detection and prevention of pregnancy induced hypertension and pre-eclampsia and other associated risk factors for eclampsia might help to reduce the incidence of eclampsia. Maternal adverse outcomes in this study were magnesium toxicity, acute renal failure (ARF), disseminated intravascular coagulation (DIC) and post partum hemorrhage (PPH) while 92% patients had no complications.

Keywords: ARF, DIC, Eclampsia, Magnesium toxicity, Maternal mortality, PPH, Pregnancy induced hypertension

INTRODUCTION

The term eclampsia is derived from a Greek word, meaning “like a flash of lightning”. It may occur quite abruptly, without any warning manifestations.

Eclampsia is a life threatening condition in which a pregnant woman who does not have history of epilepsy experiences seizures (convulsions). Eclampsia is a serious complication of Preeclampsia. Preeclampsia is a disorder that can occur during pregnancy that is characterised by high blood pressure (hypertension), protein in the urine (proteinuria) and retention of excessive fluid (edema). In some cases, the high blood

pressure of preeclampsia can get so high that it reduces the amount of oxygen delivered to a woman’s brain. This can result in the development of eclampsia and seizures in the mother that threaten the life of both the mother & the fetus.¹

It is one of the leading causes of maternal mortality and morbidity and also perinatal mortality. According to WHO estimation, eclampsia is the cause of 12% of all maternal death globally. Eclampsia probably accounts for 50,000 maternal deaths a year worldwide. In India reported incidence of eclampsia varies from 0.179 to 3.7%. And maternal mortality varies from 2.2 to 23% of all eclamptic women. The incidence of eclampsia in

Western countries is 1 in 2000-3448 deliveries.² Incidence of eclampsia from the systematic review was 2.3% of preeclampsia cases for developing regions and 0.8% of preeclampsia cases for developed regions.³

Eclampsia always should be considered in a pregnant patient with a seizure episode. Eclampsia can occur during the antepartum, intrapartum, and postpartum periods. Ninety percent of eclampsia cases occur after 28 weeks gestation.⁴ Most common symptoms that immediately precede eclamptic seizures are neurologic symptoms regardless of hypertension. This suggests that closely monitoring patients with these symptoms may provide an early warning for eclampsia.⁵

Magnesium Sulphate is the drug of choice for routine management of eclampsia rather than diazepam or phenytoin. Zuspan and Pritchard's regimen is most commonly used.⁶

This study aims to discuss the incidence of eclampsia, its risk factors, complications and fetal outcome.

METHODS

This Observational study was conducted at Obstetrics and Gynecology department (R.Z Hospital), PDU Medical College, Rajkot which is government tertiary referral center. The study period was from 1st January 2016 to 30th June 2017 for a period of 1 year 6 months. All eligible women were explained about the study and written informed consent was obtained from the patients and relatives.

Inclusion criteria

- All patients of eclampsia admitted in Labor Room during the study period. Antepartum, Intrapartum and Post-partum cases of eclampsia, all were included.

Exclusion criteria

- Cases less than 20 weeks of gestation
- Doubtful cases of convulsions
- Patients with history of epilepsy.

All the cases were preliminarily assessed using a standard protocol that includes a detailed demographic history, current and past obstetric, medical and surgical history and gestational age, specific ultrasound examination for fetal growth and wellbeing. Relevant maternal details such as age and parity were noted. Clinical examination was done. Blood sample was collected and sent for complete blood count, liver and renal function tests and coagulation profile. After initial examination and resuscitation Magnesium sulphate was administered according to Zuspan regime. Patients were monitored for signs of magnesium toxicity or any untoward side effect. Patients not in labour were induced for labour or

caesarean section was done for obstetric indications and mode of delivery was noted. Newborns were examined for any complications and post delivery patient was monitored for any signs of magnesium toxicity or other complications like PPH, ARF, DIC or maternal death.

RESULTS

In our study a total of 75 cases of Eclampsia were registered after applying inclusion and exclusion criteria during the study period. During the same period, there were total 13524 deliveries at RZ Hospital, PDU Medical College, Rajkot which gives an incidence rate of 0.55% (Table 1).

Table 1: Incidence rate of Eclampsia.

Total deliveries	13524
No. of cases of eclampsia	75
Incidence rate	0.55%

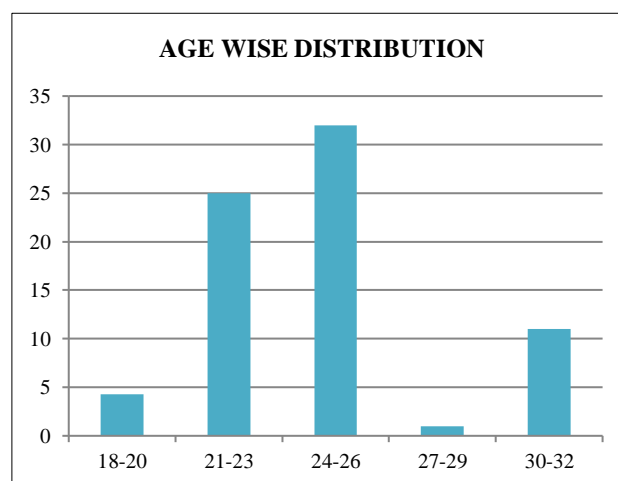


Figure 1: Age wise distribution.

Age wise distribution shows that out of 75 patients, 6 patients were in 18-20years age group, 25 patients in 21-23 years, 32 patients in 24-26 years, 1 patient in 27-29years and 11 patients in 30-32 years age group. So majority of patients i.e. 57 patients were from age group 21 to 26 years (Figure 1).

In our study of eclampsia, out of total 75 cases only 9 patients (12% of cases) were booked cases at any hospital either private or government hospital and had received any sort of antenatal care and majority 66 (88%) patients had not taken any antenatal care and were unbooked cases (Table 2).

Out of total 75 cases of eclampsia 47 patients (62.66%) were primigravida and 28 patients (37.33%) were multigravida.

95% of the patients were literate while 5% were illiterate. Sixty three (83%) patients were of Lower socioeconomic

status while 12 (16%) were of middle socioeconomic status and no patients from higher socioeconomic status in our study (Table 2).

Table 2: Demographic profile.

Parity	
Primigravida	47 (62.66%)
Multigravida	28 (37.33%)
Status	
Booked	9 (12%)
Unbooked	66 (88%)
Socioeconomic status	
Low socioeconomic status	63 (83%)
Middle socioeconomic status	12 (16%)
Litteracy	
Literate	71 (95%)
Illiterate	4 (5%)
Period of gestation	
37-42 (weeks)	50 (67%)
32-37 (weeks)	21 (28%)
Less than 32 weeks	4 (5%)
Birth outcome	
Live	73 (97%)
Stillbirth	2 (3%)

In our study 57% of the patients diagnosed with eclampsia were working women and 43 % of the patients were housewife.

Majority of patients were of term pregnancy (37 to 42 weeks) which constituted 50 patients (66.67%) while 21 patients (28%) were preterm (32-37 weeks) and 4 patients (5.33%) were extremely preterm (less than 32 weeks).

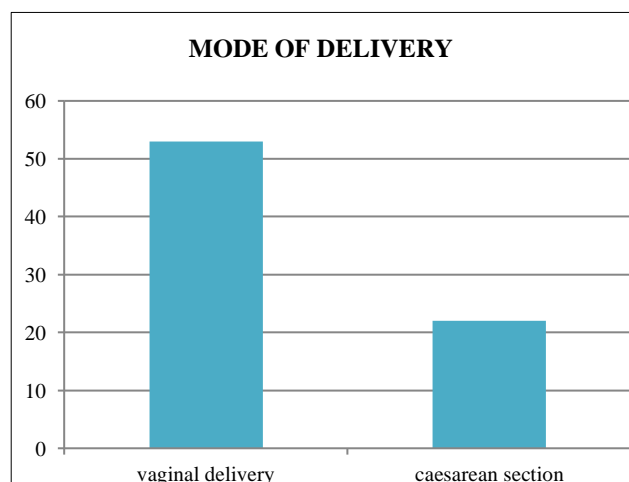


Figure 2: Mode of delivery.

Figure 2 shows that 71% (53) patients delivered vaginally and 29% patients (22) required caesarean section. 9 deliveries out of 53 vaginal deliveries were spontaneous and 44 vaginal deliveries were induced by Foley’s

Induction, PGE2 gel either individually or in different combinations as shown in Table 3.

Table 3: Type of induction in case of vaginal delivery.

Mode of Induction	No. of patients
Spontaneous	09
Foley’s induction with 1 time PGE2 gel	08
Foley’s induction with 2 times PGE2 gel	10
Foley’s induction with 3 times PGE2 gel	01
1 time PGE2 gel	23
2 time PGE2 gel	02
Total vaginal delivery	53

Table 4: General condition of patient on admission.

GCS Score	Condition	No. of patients	Percentage
14-15	Alert, no delay in response	49	65.33
11-13	Drowsy or confused. Responsive to light stimulation	9	12
9-10	Very drowsy or confused. Responsive to strong stimulation	2	2.66
<8	Unconscious	15	20

General condition of patients on admission was assessed and it was observed that 65% of patients had Glasgow Coma Score 7 of 14-15. While 20% of patients had GCS Score less than or equal to 8 and were unconscious as shown in Table 4.

Ninety two percent patients had no complications. There was maternal mortality in 2 subjects, ARF in 2 subjects, PPH in 2 subjects, DIC in 1 subjects and magnesium toxicity in 4 subjects. Some of these complications were in association with each other in most subjects.

DISCUSSION

Ten percent of all pregnancies are complicated by hypertension. Eclampsia and pre-eclampsia account for about half of these cases worldwide and have been recognized and described for years despite the general lack of understanding of the disease.⁸

Incidence of eclampsia in our study was 0.55% which is within the range of global incidence rate in developing countries of eclampsia which is 0.18-3.7%. In the period between 1980 and 1989, the average incidence was 0.92% and corresponding Figure between 2002 and 2010 was 2.15%.²Incidence for eclampsia from the systemic review was 2.3% of preeclampsia cases for developing regions and 0.8% for developed regions.⁹

Early detection and prevention of pregnancy induced hypertension and pre-eclampsia and other associated risk factors for eclampsia might have helped reduce the incidence of eclampsia.

In our study 63% of patients diagnosed with eclampsia were primigravida which indicates that eclampsia is more common in primigravida compared to multigravida patients.

Eclampsia cases are more common in rural area compared to urban area due to lack of proper antenatal visits and good obstetric care.

In our study only 4 (5.33%) cases occurred before 32 weeks gestation, i.e 94.66% cases occurred after 32 weeks. According to global scenario, 90% of eclampsia cases occur after 28 weeks pregnancy.⁴

There was mortality in two subjects, which was related to magnesium toxicity and another one due to ARF. Complications like infection, ARF, DIC and PPH were noted in some of the cases. Pregnancy induced Hypertension can cause placental abruption, intracranial hemorrhage, liver lesions, acute renal disorders and DIC, adult respiratory distress syndrome, hypervolemia and inhalation of gastric contents, due to deep sedation. ARF was seen in 2 (2.66%) patients in our study, which is usually due to acute tubular necrosis or bilateral cortical necrosis. It usually occurs in 5% of eclamptic patients.¹¹

Perinatal mortality was seen in only two subjects. Pregnancy induced hypertension is one of the major causes of maternal and fetal/neonatal morbidity and mortality.¹⁰ In a study to determine risk factors, prevalence, epidemiological parameters and maternal-perinatal outcome in pregnant women with hypertensive disorder, found that 24 cases of intrauterine fetal demise out of 255 cases and 10 fetuses died during intrapartum period. Perinatal mortality was found to be 144/1000 births.¹¹

CONCLUSION

Early detection and prevention of pregnancy induced hypertension and pre-eclampsia and other associated risk factors for eclampsia might help to reduce the incidence of eclampsia. Maternal adverse outcomes in this study were magnesium toxicity, acute renal failure (ARF), disseminated intravascular coagulation (DIC) and post partum hemorrhage (PPH) while 92% patients had no complications

ACKNOWLEDGMENTS

Authors would like to thank Dr Kavita Dudhrejia (Head of Unit) and Dr Kamal Goswami (Head of Department) for their constant support and motivation.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Dutta DC, Textbook of obstetrics, 7th edition, ch17; hypertensive disorders in pregnancy: 230-231.
2. Nobis PN, Hajong A. Eclampsia in India through the decades. *J Obstet Gynaecol India.* 2016;66(S1):S172-S176.
3. Dolea C, AbouZahr C. Global burden of hypertensive disorders of pregnancy in the year. *EIP World Health Organisation;* 2000:3-4.
4. Gabbe. *Obstetrics: Normal and Problem Pregnancies. Hypertension.* 5th ed. Churchill Livingstone. An Imprint of Elsevier; 2007.
5. Cooray SD, Edmonds SM, Tong S. Characterization of symptoms immediately preceding eclampsia. *Obstet Gynecol.* 2011;118(5):995-9.
6. Kathleem MG. Magnesium sulphate in eclampsia. *The Lancet.* 1998;351(9108):1061-2.
7. Glasgow Coma Scale. available at: <https://www.traumaticbraininjury.com/glasgow-coma-scale/>. Accessed on 11th August 2019.
8. Craici I, Wagner S, Garovic VD. Pre-eclampsia and future cardiovascular risk: formal risk factor or failed stress test. *Ther Advcardiovasc Dis.* 2008;2(4):249-59.
9. Dolea C, AbouZahr C. Global burden of hypertensive disorders of pregnancy in the year 2000. *EIP World health organization;* 2003:3-4.
10. Grujic I, Milasinovic L. Hypertension, pre-eclampsia and eclampsia monitoring and outcome of pregnancy. *Med Pregl.* 2006;59(11-12):556-9.
11. Yucesoy G, Ozkan S, Bodur H, Tan T, Caliskan E, Vural B, et al. Maternal and perinatal outcome in pregnancies complicated with hypertensive disorder of pregnancy: a seven year experience of a tertiary care centre. *Arch Gynecol Ostet.* 2005;273(1):43-9.

Cite this article as: Kanani B, Garala NJ. A clinical observational study in cases of eclampsia. *Int J Reprod Contracept Obstet Gynecol* 2019;8:3524-7.