

Demographic Profile of Eclampsia Patients in a Tertiary Care Centre- A Prospective Observational Study

Sunita Jamwal¹, Ajay wakhloo², Natasha Gupta^{3*}

1. (Fellow Reproductive Endocrinology and Infertility, PGIMER Chandigarh; Ex Senior Resident, Dept of Obstetrics and Gynaecology, PGIMER Chandigarh; MD Obstetrics & Gynaecology, GMC Jammu, J&K, India)

2. (Professor, Dept of Obstetrics and Gynaecology, GMC Jammu, J&K, India)

3. (Ex -Senior Resident, Dept of Obstetrics and Gynaecology, AIIMS, New Delhi; MD Obstetrics & Gynaecology, GMC Jammu, J&K, India)

³Email id- natashagupta2011@gmail.com

Abstract

Introduction: Eclampsia is a leading cause of maternal death throughout the world, with a higher mortality rate in developing countries compared to western countries. Although the incidence and mortality from eclampsia has fallen dramatically over the past several decades due to better antenatal care, the associated maternal and fetal morbidity and mortality is still significant. **Objective:** To study socio-demographic profile of eclampsia patients in a tertiary care hospital in Jammu, Jammu & Kashmir. **Method:** This was a prospective observational study conducted in a tertiary care centre over a period of 1 year from November 2015 to December 2016 at SMGS hospital, Government Medical College, Jammu. 100 patients were recruited. **Results:** Majority cases (49.0%) belonged to 21-25 years age group followed by 21.0% cases in ≤ 20 years age group (Table 1). There were only 3 cases in age group > 35 years. The maximum number of patients (58%) were Hindu, 41% Muslim and 1% Sikh. 59% of patients were in antepartum eclampsia group followed by 24% in imminent eclampsia group and 17% in postpartum eclampsia group.

According to our study, there were almost equal number of patients as per gravity was considered. Mean systolic pressure in antepartum, postpartum and imminent eclampsia group was 157.46 ± 14.81 mmHg, 150.82 ± 13.25 mmHg, & 158.67 ± 17.72 mmHg respectively. Similarly mean diastolic pressure in antepartum, postpartum and imminent eclampsia group was 104.41 ± 12.06 mmHg, 97.41 ± 12.51 mmHg, & 106.92 ± 13.08 mmHg. In our study there was no difference in systolic blood pressure distributions but diastolic blood pressure difference was significant among the patients with different types of eclampsia. Maximum diastolic blood pressure (106.92 ± 13.08) was found in imminent and minimum diastolic blood pressure (97.41 ± 12.51) was found in postpartum eclampsia patients. Regarding maternal mortality there were 3 deaths in our study. **Conclusion:** Prompt identification of

risk factors can lead to better antenatal care and therefore reduction in incidence of eclampsia.

INTRODUCTION

Eclampsia is a leading cause of maternal death throughout the world, with a higher mortality rate in developing countries compared to western countries (1). It occurs more commonly in primigravidae, nearly 75% of all eclampsia. Eclampsia is defined as occurrence of generalized seizures, not caused by any other neurological disorder in a woman who also meets the criteria for preeclampsia (2).

50% of eclampsia are seen from 36 weeks of gestation to term. Most cases of eclampsia present in third trimester, with about 80% of eclamptic convulsions occurring intrapartum or within the first 48 hours following delivery (3). The seizure is similar to that occurring in grand mal epilepsy with premonitory slight twitching of the face and limbs leading to the generalized tonic and clonic stages followed by postictal state or coma (4). Eclamptic seizures are self limiting and seldom last longer than 3-4 minutes.

The most common symptom that precede eclamptic seizures are neurologic symptoms (headache, visual disturbances) (5). Persistent headache-occipital/frontal, visual disturbances, restless, agitation and epigastric pain in a preeclamptic woman suggests that eclampsia is impending and warrant prophylactic prevention and treatment.

Eclampsia produces multiple systemic derangements that can involve multiple organ systems including hematologic, hepatic, renal, and cardiovascular system as well as central nervous system. The risk of pregnancy complications increases with eclampsia, and these include abruptio placentae, preterm birth, foetal growth retardation, HELLP (Hemolysis, Elevated liver enzymes, and Low platelets) syndrome, Disseminated Intravascular Coagulation, pulmonary edema, acute renal failure and neurological deficits (Katz et al, 2000). Other complications include aspiration pneumonia, cardio-pulmonary arrest, status eclampticus, coma, maternal injury (tongue bite, head trauma, broken bones), maternal death, long term sequelae like impaired attention, foetal distress, hypoxic ischemic encephalopathy, prematurity, placental infarcts, IUGR and foetal hypoxia.

Risk factors for eclampsia include nulliparity, extremes of age, teenage, primigravidae, multifetal gestation, obesity, diabetes mellitus, autoimmune diseases, thrombophilia, poor antenatal care, fetal hydrops, protein C deficiency, protein S deficiency, antithrombin

deficiency, pre-existing hypertension/renal disease, family history of eclampsia or preeclampsia, preeclampsia in prior pregnancy & hyper homocystenemia.

Although the incidence and mortality from eclampsia has fallen dramatically over the past several decades due to better antenatal care, the associated maternal and fetal morbidity and mortality is still significant. Therefore we conducted this study to see socio-demographic profile of eclampsia patients in a tertiary care hospital in Jammu, Jammu & Kashmir.

METHODS

Study design

This was a prospective observational study conducted in a tertiary care centre over a period of 1 year from November 2015 to December 2016 at SMGS hospital, Government Medical College, Jammu. Ethical approval was taken from institutional ethical committee.

Study population

Pregnant women who were diagnosed with eclampsia during the course of stay at hospital and delivered at SMGS Hospital, Govt Medical College, Jammu were recruited. Informed consent was taken.

Inclusion criteria

- Patients with eclampsia (antepartum, intrapartum, imminent, and postpartum)

Exclusion criteria

- Pregnant women with chronic hypertension
- Pregnant women with diagnosed case of epilepsy
- Pregnant women with known brain lesions & infections

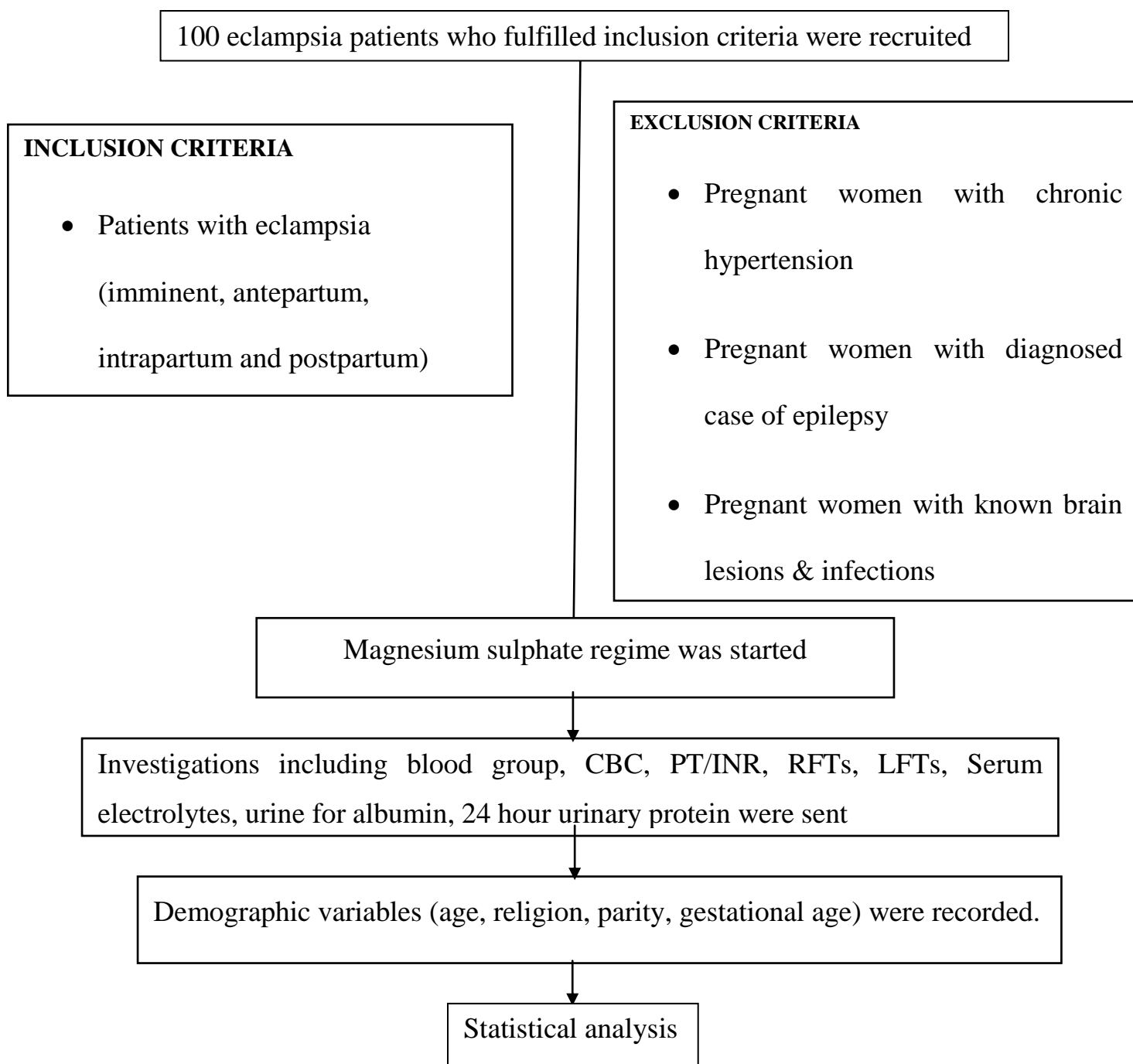
100 patients who met inclusion criteria and consented for the study were recruited in the study from November 2015 to October 2016 in the Department of Obstetrics and Gynaecology, SMGS Hospital, GMC Jammu.

A proforma was prepared for each patient which included age, menstrual history, obstetric history & past medical/surgical history.

Statistical Analysis

Statistical calculations were performed using the SPSS 16.0. Data were first analyzed descriptively. Mean and standard deviation were determined for continuous variables. Categorical data were presented with absolute and relative frequencies. In order to detect differences between subjects students t-test was used for continuous variables, while, for categorical variables, the X^2 test was used. A p-value of less than 0.05 was considered statistically significant.

FLOWCHART OF METHODOLOGY



RESULTS

Maximum number of patients, 49 (49%) were in the age group of 21-25 years followed by 21% cases in the age group ≤ 20 years, 19% cases in the age group 26-30 years, 8% cases in the age group 31-35 years. There were only 3% cases in age group > 35 years (Table 1).

In our study we found that maximum number of patients 58% were Hindu, 41% Muslim and 1% Sikh (Table 2). 59% of patients were in antepartum eclampsia group followed by 24% in imminent eclampsia group and 17% in postpartum eclampsia group (Table 3).

According to our study, there were almost equal number of patients as per gravity was considered. 51% were primigravidae and 49% multigravida. Among 3 types of eclampsia group, majority of patients in antepartum eclampsia group were primigravida (59.32%). In postpartum group, 76.47% were multigravida and in imminent eclampsia group, both primigravida and multigravida were equal (Table 4). In our study maximum patients (66.11% of antepartum, 70.59% of postpartum & 79.17% imminent) were in > 35 weeks period of gestation (Table 5)

Mean systolic pressure in antepartum, postpartum and imminent eclampsia group was 157.46 ± 14.81 mmHg, 150.82 ± 13.25 mmHg, & 158.67 ± 17.72 mmHg respectively. Similarly mean diastolic pressure in antepartum, postpartum and imminent eclampsia group was 104.41 ± 12.06 , 97.41 ± 12.51 , & 106.92 ± 13.08 . In our study there was no difference in systolic blood pressure distributions but diastolic blood pressure difference was significant among the patients with different types of eclampsia. Maximum diastolic blood pressure (106.92 ± 13.08) was found in imminent and minimum diastolic blood pressure (97.41 ± 12.51) was found in postpartum eclampsia patients (Table 6)

Mean 24-hr urinary protein was 1.12 ± 1.48 g/L, 1.08 ± 1.75 g/L, & 1.32 ± 1.33 g/L in antepartum eclampsia group, postpartum group, and imminent eclampsia group respectively. In our study there was no correlation between 24-hr urinary protein and the type of eclampsia (Table 7)

Table 1: Distribution of cases in relation to age (years).

Age groups (years)	No.	Percentage
≤ 20	21	21.0
21-25	49	49.0
26-30	19	19.0

31-35	8	8.0
>35	3	3.0
Mean age \pm SD	24.98 \pm 4.52	

Table 2: Distribution of cases as per religion.

Religion	No.	Percentage
Hindu	58	58.0
Muslim	41	41.0
Sikh	1	1.0

Table 3: Distribution of cases according to type of eclampsia

Eclampsia	No.	Percentage
Antepartum	59	59.0
Postpartum	17	17.0
Imminent	24	24.0

Table 4: Obstetric history according to type of eclampsia

Obstetric history	No. of patients (%)		
	Antepartum (n=59)	Postpartum (n=17)	Imminent (n=24)
Primi Gravidae	35 (59.32)	4 (23.53)	12 (50.00)
Multi Gravidae	24 (40.68)	13 (76.47)	12 (50.00)

Table 5: Gestational age as per the type of eclampsia

Gestational age (weeks + days)	No. of patients (%)		
	Antepartum (n=59)	Postpartum (n=17)	Imminent (n=24)
\leq 30 weeks	5 (8.47)	0 (0.00)	2 (8.33)
30+1 – 35 weeks	15 (25.42)	5 (29.41)	3 (12.50)
>35 weeks	39 (66.11)	12 (70.59)	19 (79.17)

Table 6: Blood Pressure in relation to the type of eclampsia

Blood pressure (mmHg)	Mean \pm SD	
	SBP(mmHg)	DBP(mmHg)
Antepartum (n=59)	157.46 \pm 14.81	104.41 \pm 12.06
Postpartum (n=17)	150.82 \pm 13.25	97.41 \pm 12.51
Imminent (n=24)	158.67 \pm 17.72	106.92 \pm 13.08
p-value	0.221	0.049 (p value < 0.05)

Table 7: 24 hr urinary protein (g/l) in relation to the type of eclampsia.

24 hr urinary protein (g/l)	Mean \pm SD		
	Antepartum (n=59)	Postpartum (n=17)	Imminent (n=24)
	1.12 \pm 1.48	1.08 \pm 1.75	1.32 \pm 1.33
p-value	0.841		

DISCUSSION

While studying the age pattern it was observed that majority cases (49.0%) belonged to 21-25 years age group followed by 21.0% cases in \leq 20 years age group (Table 1). There were only 3 cases in age group $>$ 35 years. This observation is consistent with the study conducted by Majhi K et al., (2000) in which 90% of the cases of antepartum eclampsia were of age group \leq 24 years.

According to our study eclampsia was more prevalent in hindus (58%) followed by muslims (41.0%) (Table 2). Only one case of sikh religion had eclampsia. This finding is consistent with the study conducted by Majhi K et al, (2000) in which 70% patients belonged to hindu religion and 30% muslim.

According to our study majority of the cases (59.0%) were having antepartum eclampsia followed by imminent (24%) and postpartum (17.0%) (Table 3). This finding of our study was comparable with the study performed by Sibai BM et al, (2000) in which 38-53% were antepartum, 15-20% were intrapartum and 11-44% were in the postpartum period.

While studying the parity of the pregnant women it was observed that majority of the cases with eclampsia were primigravidae (51%) and multigravidae constituted 49% of cases. (Table

4). This observation is consistent with the study conducted by Conde-Agudelo A et al., (2000) which concluded that nulliparity is a risk factor for eclampsia (7)

In our study we found that majority of the patients in eclampsia (70%) were in ≥ 35 weeks period of gestation and 30% were in ≤ 35 weeks period of gestation (Table 5). Our this observation was consistent with the study conducted by Majhi K et al., (2000) in which 44% of cases in antepartum eclampsia were preterm (≤ 35 week) (8)

In our study there was no difference in systolic blood pressure distributions among the patients with different types of eclampsia but difference in diastolic blood pressure distributions was significant (Table 6). The diastolic blood pressure was maximum in imminent eclampsia (106.92 ± 13.08) and minimum in postpartum eclampsia (97.41 ± 12.51). We could not retrieve any study to support this observation. The fall in diastolic blood pressure in postpartum eclampsia may be because after delivery there is fall in BP.

In our study, the highest 24 hour urinary protein was recorded in imminent (1.32 g/l) while the lowest was found in post partum eclampsia (1.08 g/l) (Table 7).

Regarding maternal mortality there were 3 deaths in our study. This was supported by the study conducted by Ndaboine EM (2012) in which there were 7.89% maternal deaths (8).

CONCLUSIONS

It was concluded in our study that eclampsia was more common in age group ≤ 25 years (60%). So young age is a risk factor for eclampsia. Eclampsia was more common in Hindus (58%) but it may be a selection bias as Jammu is a Hindu majority region. Among the type of eclampsia, majority (59%) had antepartum eclampsia. Majority of the patients in our study were primigravidae (51%). Majority of the patients in our study were in ≥ 35 weeks period of gestation (70%). Among the BP distributions, there was no difference in systolic blood pressure but diastolic blood pressure difference was significant among different types of eclampsia. Diastolic blood pressure was maximum in imminent (106.92 ± 13.08) and minimum in post-partum (97.41 ± 12.5) eclampsia. This may be due to fall in blood pressure after delivery to some extent. There were 3 deaths out of 100 patients.

Funding- none

Conflict of interest - None

REFERENCES

1. Khan KS, Wojdyla D, Say L, Gulmezoglu AM, Van Look PF. WHO analysis of causes of maternal death: a systemic review. *Lancet* 2006; 367(9516):1066-74.
2. Cunningham FG, MacDonald PC, Gant NF. Hypertensive disorder of pregnancy. In: Cunningham FG, MacDonald PC, Gant NF, editors. *William's obstetrics*. 18th edn. Norwalk. Conn: Appleton & Lange. 1989; 653-94.
3. Sibai BM. Diagnosis, prevention and management of eclampsia. *Obstet Gynecol* 2005; 105(2):402-10.
4. Gabbe. *Obstetrics: Normal and Problem Pregnancies. Hypertension*. 5th ed. Churchill Livingstone, An Imprint of Elsevier; 2007
5. Cooray SD, Edmonds SM, Tong S, Samarasekera SP, Whitehead CL. Characterization of symptoms immediately preceding eclampsia. *Obstet Gynecol* 2011; 118(5):995-99.
6. Condge-Agudelo A, Belizán JM. Risk factors for pre-eclampsia in a large cohort of Latin American and Caribbean women. *BJOG* 2000; 107(1):75-83.
7. Xc cMajhi AK, Chakraborty PS, Mukopadhyay A. Eclampsia – Present scenario in a referral medical college hospital. *J Obstet Gynecol Ind* 2000; 50:128-32.
8. Ndaboine EM, Kihunrwa A, Rumanyika R, Im HB, Massinde AN. Maternal and perinatal outcomes among eclamptic patients admitted to Bugando Medical Centre, Mwanza, Tanzania. *Afr J Reprod Health* 2012; 16(1):35-41.