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Original Research Article

Effect of eclampsia on pregnancy outcome at tertiary care center, Gujarat, India

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ABSTRACT

Background: Eclampsia, a common medical emergency of pregnancy mainly seen in 5% to 10% of all pregnancies. The objective of the present study was to study the effect of eclampsia on maternal and perinatal outcome.

Methods: This cross-sectional study was conducted among 50 clinically diagnosed women with eclampsia in their third trimester of pregnancy. Inclusion criteria for the study was; females with singleton pregnancy, all in the third trimester which were diagnosed to have PIH based on the development of hypertension for the first time, proteinuria with or without edema, with no history of previous urinary tract troubles and no evidence of UTI.

Results: Almost 84.0% participants were belonged to age group of 20 to 30 years age, 54.0% were belonged to rural area and 92.0% were belonged to lower socio-economical class, 88.0% participants were registered as emergency case, 34.0% participants were stayed more than 10 days at hospital and 36.0% were completed ANC visit. Almost 24.0% participants were anemic, 6.0% pre-eclampsic and 4.0% have tween pregnancy. Severe hypertension at the time of admission were noted in 50.0% participants followed by absent knee jerk (12.0%), proteinuria (78.0%) and edema (62.0%) respectively. Maternal mortality and still birth observed in 2.0% and 18.0% cases respectively.

Conclusions: Early age, lower socio-economic class, anemia, less ANC clinic visit, higher hospital stay and primigravida observed more among study participants and these factors may play an important role in the pathogenesis of eclampsia.

Keywords: Eclampsia, Hypertension, Maternal mortality, Third trimester pregnancy

INTRODUCTION

The triad of Hypertensive disorders, hemorrhage and infection play a huge role in complicating pregnancy which responsible for a big number of maternal deaths.^{1,2} Eclampsia, a common medical emergency of pregnancy mainly seen in 5% to 10% of all pregnancies.^{3,4}

It is a pregnancy specific syndrome of reduced organ perfusion secondary to vasospasm and endothelial activation, characterized by hypertension and proteinuria that may lead to multisystem involvement including renal, hematological, hepatic and cerebral impairment.^{5,6}

Eclampsia become a common cause of maternal mortality nowadays and it is defined as generalized tonic clonic seizures and/or coma in a pregnancy complicated with hypertension.^{6,7} It is mostly observed more among nulliparous women.

Exact etiology does not revealed till date but obesity, diabetes, magnesium deficiency, older maternal age and job stress play crucial role in the pathogenesis of eclampsia.^{2,8-10} Haemodilution, renal clearance, consumption of minerals by the growing fetus is concerned with the hypomagnesaemia in pregnant women. There is decrease in ionized and total magnesium

levels with increasing gestational age during normal pregnancy, as well as evidence of magnesium disturbance in women who later developed Eclampsia. Magnesium levels may have significant effects on cardiac excitability and on vascular tone, contractility and reactivity. Magnesium causes vascular muscle relaxation.¹¹⁻¹³. So this study was conducted with the objective to study the effect of eclampsia on maternal and perinatal outcome.

METHODS

This is a cross-sectional study included 50 pregnant women between 20-35 years of age, attending Gynaecology OPD/admitted in Gynaecology wards in tertiary care hospital, Ahmedabad, Gujarat.

Study was conducted among 50 clinically diagnosed women with eclampsia in their third trimester of pregnancy represented as study group during April 2011 to March 2013 after permission of Institutional Ethical Committee (IEC). Inclusion criteria for the study was; All were in the same previously mentioned criteria but didn't develop hypertension.

Inclusion criteria

- Females with singleton pregnancy.
- All in the third trimester which were diagnosed to have PIH based on the development of hypertension for the first time.
- Proteinuria with or without edema, with no history of previous urinary tract troubles and no evidence of UTI.

Exclusion criteria

- Pregnant ladies with medical complications such as renal disease, trophoblastic disease, heart disease, chronic hypertension and on magnesium sulphate drugs.

Thorough clinical examination was carried out before recruiting the participants for the study by a competent gynecologist.

Personal and clinical information regarding age, gestational age, socioeconomic status, education, dietary habit, clinical and biochemical parameters were recorded with the help of a questionnaire, with prior consent of the participant.

All the statistical tests were performed in Epi Info 3.5.1 software by CDC, USA.

RESULTS

Table 1 shows that 84.0% participants were belonged to age group of 20 to 30 years age group followed by 8.0% in age group of <20 years and >30 years respectively. Almost 70.0% participants were housewife and 30.0%

were labourer. Around 54.0% were belonged to rural area and 46.0% were belonged to lower socio-economical class. Almost 88.0% participants were registered as emergency case. Almost 34.0% participants were stayed more than 10 days at hospital.

Table 1: Clinico-social factors of study participants (N=50).

Variables	Number (%)
Age (in year)	
<20	4 (8)
20-30	42 (84)
>30	4 (8)
Mean age±SD	24.3 ± 5.1
Occupation	
Housewife	35 (70)
Labourer	15 (30)
Residence	
Rural	27 (54)
Urban	23 (46)
Socio-economic class	
Lower	46 (92)
Middle	3 (6)
Upper	1 (2)
Type of case	
Booked	6 (12)
Emergency	44 (88)
Total hospital stay	
<5	1 (2)
5-10	32 (64)
>10	17 (34)
Amenorrhea (in month)	
5-7	9 (18)
8	15 (30)
9	26 (52)
Ante-natal visit	
Yes	18 (36)
No	32 (64)
Parity	
Primi	35 (70)
Multi	15 (30)
Risk factor	
Anemia	12 (24)
Pre-eclampsia	3 (6)
Twins	2 (4)
Heart Disease	1 (2)
Malaria	1 (2)

Only 36.0% were completed ANC visit, 52.0% participants have 9 months of amenorrhea and 15.0% were multi-gravida patients. Almost 24.0% participants were anemic, 6.0% pre-eclampsic and 4.0% have tween pregnancy. Table 2 shows that 24.0% participants have history of >3 convulsion episode and same were came directly from home. Severe hypertension at the time of admission were noted in 50.0% participants followed by absent knee jerk (12.0%), proteinuria (78.0%) and edema

(62.0%) respectively. Altered respiratory, CNS system were noted in 24.0% and 36.0% cases respectively. Almost all the cases have history of first time of convulsion episode. Maternal mortality and still birth observed in 2.0% and 18.0% cases respectively. \

Table 2: Eclampsia related variables observed among study participants (N=50).

Variable	Number (%)
No. of convulsion	
≤3	38 (76)
>3	12 (24)
Referred	
Directly home	12 (24)
Hospital	38 (76)
BP at the time of admission	
Severe	25 (50)
Mild	19 (38)
Normal	6 (12)
Knee jerk	
Absent	6 (12)
Brisk	31 (62)
Normal	13 (26)
Proteinuria (n=48)	
+1 to +4	39 (78)
Trace	6 (12)
NIL	2 (4)
Edema	
Present	31 (62)
Respiratory system	
Altered	12 (24)
CNS	
Altered	18 (36)
Platelet count	
Low	13 (26)
Reoccurrence	
Yes	0 (0.0)
Maternal mortality	
Yes	1 (2)
Perinatal outcome	
Live birth	41 (82)
Still birth	9 (18)

DISCUSSION

During pregnancy, urinary excretion of magnesium also increased due to hemodilution effect of oestrogen and increased demand of fetus decrease the serum magnesium level.^{2,14} Present study observed that more than 4/5th participants were belonged to age group 20 to 30 years and mean age was 24.1 year. This finding is nor correlate with the study done by Taviana Z et al and Darkwa EO et al¹⁶ but correlate with the study finding Singh A et al.^{15,16} Although this is a well-established fact that preeclampsia and eclampsia are more prevalent in extremes of age Pregnant women of age less than 20 year were higher risk of developing pre-eclampsia compared to age of more than 20 year.^{17,18} More than

2/5th participants were housewife and more than half participants were resided in rural area and almost more than 90% were came from lower socio-economical class. One of the strong risk factors for preeclampsia is Low maternal socioeconomic status.¹⁹ Average duration of most of participants were stayed at hospital for more than 5 days and out of that, almost 90.0% cases were admitted as emergency case and this finding is correlate with the study done by Sandhu et al and Gaddi S et al.^{20,21} Diastolic blood pressure, the interval between onset of eclampsia and delivery, mode of delivery, and duration of magnesium therapy play an important role in length of hospital stay of eclamptic patients.²²

Only 1/3rd cases were attended ANC clinic during their pregnancy period, and more than 2/3rd cases were primigravida. Eclampsia is more common in primigravida women and the risk of preeclampsia increases the greater the interval between pregnancies. Present study observed anemia as common risk factors among study participants. women with severe anaemia had a very much greater risk of eclampsia than women with no anaemia.^{23,24}

More than 1/4th participants have history of >3 convulsion and more than 50.0% cases have higher blood pressure. Abnormal knee jerk was observed in 3/4th participants, proteinuria presents in more than 90.0% cases, edema present in 3/5th cases. Present study noted maternal mortality in one case and still birth in 18.0% cases. Elevated systolic blood pressure and raised aspartate aminotransferase levels observed in primigravida indicate a more severe form of Eclampsia.²⁵

CONCLUSION

Present study results revealed that early age, lower socio-economic class, anemia, less ANC clinic visit, higher hospital stay and primigravida observed more among study participants and these factors may play an important role in the pathogenesis of eclampsia. Screening of this factors and correction of the same in pregnancy may prevent the risk of developing eclampsia.

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

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