

ORIGINAL ARTICLE

ECLAMPSIA AND ITS ASSOCIATION WITH EXTERNAL FACTORS

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Background: Eclampsia remains a leading cause of maternal and perinatal mortality and morbidity. Primigravida are at higher risk of convulsions and antepartum convulsions are more dangerous than those beginning after delivery. This study was carried out to evaluate the epidemiological aspects of patients presenting with eclampsia in the catchment area of Saidu Teaching Hospital Swat. **Methods:** This descriptive non-interventional study was carried out in the Department of Obstetrics and Gynaecology, Saidu Teaching Hospital Swat from 1st January 2007 to 31st December 2009. Non-probability consecutive sampling method was used. All patients of eclampsia were included in the study. The diagnosis was based on history and confirmed on clinical findings. Inclusion criteria were patients with hypertension, proteinuria and history of fits during pregnancy; labour and puerperium within 7 days of delivery. Exclusion criteria were history of fits other than eclampsia. **Results:** A total of 23,000 admissions were made in the labour ward during the study period. Out of them 108 cases (0.46%) were of eclampsia, 85 were primigravidae with no previous history of hypertension and 23 were multigravidae with previous history of hypertension. The seasonal frequency of cases was 34.25% in winters, 17.59% in autumn, 21.29% in summers and 26.85% in spring. The incidence of eclampsia was 79.62% in primigravida, and 75% in the age group 14–19 years. The prevalence was high (82.40%) in poor socioeconomic class patients. **Conclusion:** Eclampsia is a common pregnancy associated disorder in this part of the country especially in primigravida and teenagers. The disorder is common in low socioeconomic class. The most important aspect of its management is prevention by proper antenatal check-up, availability of health facilities and prompt referral to tertiary care hospital.

Keywords: Eclampsia, Pregnancy, primigravida, seasonal variation

INTRODUCTION

Eclampsia remains a leading cause of maternal and perinatal mortality and morbidity. Worldwide, approximately, 63,000 women die every year because of eclampsia and severe pre-eclampsia, even associated with neonatal death.¹ It is a pregnancy-specific disease characterised by convulsions associated with pre-eclampsia, sometimes progressing into a multiorgan cluster of varying clinical features. Convulsion may occur antepartum (38%) intrapartum (18%) or postpartum (44%).² Primigravida are at higher risk of convulsions and antepartum convulsions are more dangerous than those beginning after delivery.^{2,3}

The purpose of this study was to report the frequency of this pregnancy associated disorder in terms of age, parity, socioeconomic status and seasonal variation in this far-flung area of Pakistan.

MATERIAL AND METHODS

This was a descriptive and non-interventional study conducted in the Department of Obstetrics and Gynaecology of Saidu Teaching Hospital Swat during a period of 36 months from 1st January 2007 to 31st December 2009. Non-probability consecutive sampling method was used. All the patients admitted with eclampsia were included in the study.

Inclusion criteria were patients more than twenty weeks gestation with history of pre-eclampsia (headache, epigastric pain, nausea, vomiting, rapidly increasing generalised body swelling, hypertension, proteinuria, oedema) and convulsions. Patients of all reproductive age groups and parity ranging from teenager primigravida to multigravida were included. Pregnant patients with other convulsive disorders and

more than 7 days postpartum were excluded. The clinical findings on admission were recorded on note sheets including laboratory workup both general and specific for eclampsia. All the patients were managed according to basic protocol for eclampsia.

The data were compiled for frequency distribution of eclampsia according to age, parity, socioeconomic status of the patients, and seasonal variation.

RESULTS

During this period of 36 months more than 23,000 patients were admitted, out of them 108 (0.46%) were cases of eclampsia.

Patients within age group 14–19 years were having maximum (75%) incidence of the disease (Table-1). Majority (79.62%) of them were primigravida, and 21.29% were multigravida. Incidence of cases seemed to decrease with decreasing gestation (Table-2). Cases of eclampsia were more (34.25%) in winter season (Table-3). Majority (82.40%) of the patients belonged to poor socio-economic class, living in far-flung areas and never seeking proper antenatal advice, even if living in the areas nearby (Table-4). Sixteen out of 21 multigravidae had previous history of hypertension and none of the primigravida had such history.

Table-1: Age- and year-wise number of eclampsia patients

Age (Years)	Years			No. of Patients	% of Total
	2007	2008	2009		
14–19	35	25	21	81	75
20–30	5	2	3	10	9.25
>30	8	2	7	17	15.74
Total	48	29	31	108	

Table-2: Year-wise number of primi- and multigravida with eclampsia

Year	Primigravida	Multigravida
2007	38	8
2008	24	6
2009	23	9
Total	85	23
%	79.62	21.29

Table-3: Seasonal variation of incidence of eclampsia

Seasons	Year			No. of Patients	% of Total
	2007	2008	2009		
Autumn	9	5	5	19	17.59
Winter	17	8	12	37	34.25
Spring	10	10	9	29	26.85
Summer	12	6	5	23	21.29
Total	48	29	31	108	

Table-4: Socio-economic status of eclampsia patients

Year	Primigravida		Multigravida	
	Middle	Poor	Middle	Poor
2007	6	32	1	7
2008	3	21	1	5
2009	5	18	3	6
Total	14	71	5	18

DISCUSSION

Majority of our patients were teenagers and many of them were primigravidae making this group more vulnerable to eclampsia. This is in agreement with Kirsten Duckitt⁴ who reported similar results. A large number eclampsia patients in our study belonged to poor socioeconomic group and coming from far-flung areas, hence unable to seek and get proper medical advice. These factors were also reported from Bangladesh⁵ where similar conditions prevail. We observed more number of eclampsia cases during winter which is very hard in this area. Similar results were also reported by Begum et al from Bangladesh.⁶

Eclampsia is the commonest cause of convulsions during pregnancy next being epilepsy.⁷ It is very common in developing countries, the prevalence varies widely from 1 in 100 to 1 in 1,700. Illiteracy, lack of health awareness and education, poverty and superstitious beliefs are some important factors which prevent women of developing countries from seeking medical advice during pregnancy. The major cause being, with reference to present study in the area of Swat and adjacent districts, is the same. One reason for high incidence in multigravida is that only complicated cases access a tertiary care hospital owing to the poor socioeconomic conditions of the general population and lack of educational resources.⁵ The failure of primary health care provider to identify high risk patients and to refer them in time to a tertiary care hospital is the most important factor for high incidence of eclampsia.

Douglass and Redman described eclampsia considerable in teenagers (75%).⁸ Our findings are also similar to that study. An appreciable number (76.19%) of multigravida in our study had previous history of hypertension. Campbell *et al* also reported that multiparous patients presenting with eclampsia had past history of hypertension as well as babies small for gestational age.⁹

Frequency of cases was seen to be increasing during winter (34.25%), compared to spring (26.85%), summer (21.29%) and autumn (17.59%). Bangladesh is a country where incidence of eclampsia is extraordinary high (7.9%) and they have more patients in winter.⁵ High prevalence of eclampsia in winter in our study is comparable with them. A study from Nigeria also showed an association between rainy season and eclampsia.¹⁰ An Indian study also confirmed seasonal trends in the occurrence of eclampsia.¹¹ A large cross-sectional study was conducted in Norway with high incidence of pre-eclampsia in winter months. In that cross-sectional study this pattern was independent of parity, maternal age, year and place of living.¹²

A number of hypotheses for the aetiology of pre-eclampsia and eclampsia have been put forward.^{13,14} Our observations and the seasonal trends reported from other countries¹⁵⁻¹⁹ point towards environmental and socioeconomic factors. Could cold weather lead to the kind of vasospasm that is a part of the pathogenesis of preeclampsia? An analogy between ischaemic heart disease and eclampsia could be postulated like Rose²⁰ who assumed that the effect of cold weather on ischemia is the basis of the relatively strong association between outdoor temperature and the occurrence of myocardial infarction. Like myocardial infarction, pre-eclampsia can be thought of as having predisposing (the foetomaternal genes), contributing (infections, diet, and smoking) and precipitating causes (cold weather).¹²

Eclampsia can be diagnosed very easily on the basis of history and typical clinical features, i.e., proteinuria, oedema, high blood pressure with fits. It can be very well prevented by proper antenatal check-up and managed if the cases are referred to tertiary care hospitals at an early stage hence reducing the maternal and foetal mortality and morbidity.

CONCLUSION

Eclampsia is a very common pregnancy associated disorder in this part of the country mostly affecting primigravida of early age group with poor socioeconomic background. Most important feature of management is its prevention by proper antenatal checkups, availability of health facilities and prompt referral to tertiary care hospital.

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