

Eclampsia and its Association with Seasonal Variations and other External Factors

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ABSTRACT

Objectives: This study was carried out to evaluate the epidemiological aspects of patients presenting with eclampsia in the Shaikh Zaid Women Hospital, Larkana.

Study Design: Descriptive retrospective observational study

Place and Duration of Study: This study was carried out in the Department of Obstetric & Gynaecology SZWH, CMC & SMBBMU, Larkana from Jan 2012 to Dec 2013.

Materials and Methods: All the patients admitted in eclampsia were included in the study. 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. Pregnant patient with other convulsive disorder and more than 7 days post-partum were excluded.

Results: In the duration of study of 24 months 50.8% cases of Eclampsia occur in Summer, 25% in Autumn, 12.9% in Winter and 11.2% in Spring Season. During this period of 24 months > 10977 patients were admitted in SZWH, Larkana out of them 108 (0.98%) were cases of eclampsia.

Conclusion: Pre eclampsia and eclampsia are major obstructed complication with unclear etiologies. Understanding the existing association with different weather patterns may help us in understanding what factors may be involved in triggering these events.

Key Words: Eclampsia, Pregnancy, Primigravida, Seasonal variations.

INTRODUCTION

Eclampsia is pregnancy specific disease characterized by convulsions associated with preeclampsia some times progressing into a multiorgan cluster of varying clinical features conversion may occur antepartum (34%), intrapartum (18%) and postpartum (2%). Primigravida is at highest risk.

Eclampsia remains a leading cause of maternal morbidity and mortality as well as perinatal mortality. Eclampsia can be diagnosed very easily on the basis of history and typical clinical features that is proteinuria, Oedema, High Blood Pressure with fits it can be very well prevented by proper antenatal checkup, and manage if the cases refer to tertiary care hospital at an early state hence reducing the maternal and fetal mortality and morbidity^{1,2}. The purpose of study was to report the frequency associated disorders in terms of age, parity, socioeconomic status and seasonal variations in interior of Sindh.

MATERIALS AND METHODS

This was a descriptive and non interventional study conducted in the Department of Obstetrics & Gynaecology SZWH, CMC & SMBBMU, Larkana during the period 24 months from Jan 2012 Dec 2013. All the patients admitted with eclampsia were included in the study. Inclusion criteria were patients > 20 weeks gestation with history of preeclampsia & convulsions patients of all reproductive age group and parity

ranging from teenagers, primigravida to multigravida were included.

Pregnant patient with convulsive disorder and > 7 days postpartum were excluded. 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 variations.

RESULTS

In the duration of study of 24 months 50.8% cases of Eclampsia occur in Summer, 25% in Autumn, 12.9% in Winter and 11.2% in Spring Season.

During this period of 24 months > 10977 patients were admitted in SZWH, Larkana out of them 108 (0.98%) were cases of eclampsia.

Patients within age group 14 to 19 years were having maximum incidence (48%) incidence of the disease (Table No.1).

Table No.1: Age and year wise Number of Eclampsia Patient

Age (years)	Years		No. of Patients	% of Total
	2012	2013		
14-19	30	30	60	48%
20-30	12	35	47	37%
>30	10	7	17	13.7%
Total	52	72	124	100%

Incidences of cases seem to increase with decreasing gestation (Table No.2). Cases of eclampsia were

maximum (50.8%) in summer season (Table No.3). Majority (71.7%) of the patients belong to poor socioeconomic class living in rural areas and never seeking proper antenatal advice even if living in the areas near Larkana City (Table No.4) (40%) of multigravida had previous history of hypertension and non of the primigravida had such history.

Table No.2: Year wise No. of Primi and Multigravida

Year	Primi patients	Multi patients
2012	40	12
2013	35	37
Total	75	49
%	60%	39.51%

Table No.3: Seasonal Variation

Seasonal	Year		No. of patients	% of Total
	2012	2013		
Summer	26	37	63	50.8%
Autumn	12	19	31	25%
Winter	10	6	16	12.9%
Spring	4	10	14	11.2%
Total	52	72	124	100%

Table No.4: Socio-economic status of eclampsia patients

Year	Primigravida		Multigravida	
	Middle	Poor	Middle	Poor
2012	12	20	6	14
2013	15	35	2	20
Total	27	55	8	34

DISCUSSION

Studies coming from different parts of the world frequently give opposing results. There are two studies which demonstrate no relationship of meteorological factors on the incidence of eclampsia^{3,4}. Most data however tends to suggest that eclampsia is associated with cooler temperatures or winter or with increased humidity or rainfall⁵⁻⁶. On the other hand, Griswold et al in their study from Florida, USA suggest higher incidence of eclampsia in the hurricane weather, which is characterized by higher temperatures rather than lower, increased humidity and reduced barometric pressures⁷. Available studies on the association of preeclampsia with various weather patterns are also divided in their conclusions. Majority of published studies conclude that preeclampsia occurs more frequently in winter⁸⁻¹⁰. Conversely, Tan et al have suggested that preeclampsia is common in summer¹¹. A number of hypotheses for the aetiology of pre-eclampsia and eclampsia have been put forward¹³⁻¹⁴. Our observations and the seasonal trends reported from other countries¹⁵⁻¹⁸ 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 Rose¹⁸. 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 fetomaternal genes), contributing (infections, diet, and smoking) and precipitating causes (cold weather)¹².

In our study we included the patient over 20 week's gestation with history of pre-eclampsia and convulsions patients of all reproductive age group and parity, ranging from teenagers primigravida to multigravida. In our study patient frequency of eclampsia was heights during summer than in winter, but on the other studies done over seasonal variations showed increased frequency during winter as in one of the study done in Abbotabad frequency of cases was seen to be increasing during Winter (34-25%), compared to Spring (26.85%), Summer (21.29%) and Autumn (17.59%)¹.

CONCLUSION

Pre-eclampsia and eclampsia are major obstructed complication with unclear etiologies. Understanding the exist association with different weather patterns may help us in understanding what factors may be involved in triggering these events.

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