A PROSPECTIVE STUDY ON RISK FACTORS OF ECLAMPSIA

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ABSTRACT

The aim of the current study was to determine the various risk factors that are associated with development of eclampsia other than those included in the previous studies.It was a prospective, randomized study. Study population consisted of 50 eclampsia patients. Parity, maternal age, premonitory symptoms, duration of pregnancy, oedema, proteinuria and systolic and diastolic BP at the time of admission were the several factors included, that predict which preeclamptic women will eventually develop eclampsia. Fisher's exact test was applied for the study. **Result:** Risk of eclampsia was greater in nulliparous compared to parous women. Systolic BP≥160mmHg was seen to be associated more with the risk of eclampsia as compared to systolic BP<160mmHg in our study population. But in case of Diastolic BP <110mmHg was associated more with the risk of eclampsia, as compared to the Diastolic BP ≥110mmHg. Minimum gestation at which eclampsia occured in our study was 28weeks and maximum was 42weeks gestation. Our study shows, 70% of the patients had premonitory symptoms before the onset of the convulsions and oedema was present in only 30% of the cases.Only 26% of the patients had albuminuria and in 74% cases, result was not known on admission. **Conclusion:** Various risk factors including maternal age (<20years), nulliparity, premonitory symptoms, increased duration of pregnancy, systolic BP≥160mmHg and even Diastolic BP<110mmHg were associated with more risk of eclampsia in our study population. But oedema had less association with the risk of eclampsia.

KEYWORDS: Eclampsia, Pre-eclampsia, Premonitory symptoms.

INTRODUCTION

Preeclampsia and eclampsia are still a leading cause of maternal mortality throughout the world. Preeclampsia occurs in 5-8% of pregnancies in developed countries. Eclampsia is one of several severe complications of preeclampsia with generalized seizures and/or coma in the absence of other neurologic conditions.[1,2] Estimates for the occurence of eclampsia vary widely, from 1 in 100 pregnancies to approximately 1 in 4000 pregnancies.[3,4,5,6,7,8,9,10] The etiology of preeclampsia is still not well understood, and limited research is available describing factors that predict which preeclamptic women will eventually develop eclampsia.[11]

Eclampsia can result in maternal morbidity, such as HELLP syndrome, acute kidney injury, coma, pulmonary oedema, and disseminated intravascular coagulation.[3,5,6,7,12] Although these conditions commonly resolve following delivery, eclampsia can also result in ischemic or hemorrhagic stroke in the mother, which can lead to permanent neurologic sequelae or death.[4,5]

Risk factors for eclampsia that have been identified in previous studies include: both young and old maternal age, obesity prior to pregnancy, being unmarried, excessive weight gain during pregnancy, multiple gestations, nulliparity, chronic hypertension, low socioeconomic status, prolonged birth interval, and lack of prenatal care.[3,6,7,9,13] The aim of the current study was to determine the various risk factors that are associated with development of eclampsia other than those included in the previous studies.

METHODOLOGY

It was a prospective, randomized study. Study population consisted of 50 eclampsia patients. The study was conducted in 2016 at the department of Obstetrics and Gynaecology, Gauhati Medical College and Hospital. Parity, maternal age, premonitory symptoms, duration of pregnancy, oedema, proteinuria and systolic and diastolic BP at the time of admission were the several factors included, that predict which preeclamptic women will eventually develop eclampsia. Fisher's exact test was applied for the study.

RESULTS

Risk of eclampsia was greater in nulliparous compared to parous women. In our study, 86% of the patients were primigravidas, 8% of them were second gravidas and 6% each of third gravidas. (Table-1).

Young mother of <20years were associated with more eclampsia risk. Most of the cases in our study belonged to the age group of ≤20years, i.e. 54%. 30% were of age group of 21-25years, 16% belonged to age group of 26-30years. Minimum age seen was 18years and maximum age seen was 30 years. (Table-2).

Systolic BP≥160mmHg was seen to be associated more with the risk of eclampsia as compared to systolic BP<160mmHg in our study population. In our study 34% of the patients had systolic BP <160mmHg and 66% of the patients had systolic BP ≥160mmHg at the time of admission with RR-1.000 and 95% CI:0.6231 to 1.605. P value is 1.000, considered not significant. (Table-3a). But in case of Diastolic BP <110mmHg was associated more with the risk of eclampsia, as compared to the Diastolic BP ≥110mmHg. In our study 52% of the patients had diastolic BP <110 mmHg at the time of admission, and 48% of patients had diastolic BP≥110mmmHg with RR -1.000 and 95% CI: 0.7216 to 1.386. P value is 1.0000 which is considered to be not significant. (Table-3b).

In our study, 68% were term gestation being 37 weeks or more, 14% were between 33-36weeks, 14% were between 29-32weeks, and 4% were between 25-28weeks of gestation. Minimum gestation at which eclampsia occured in our study was 28weeks and maximum was 42weeks gestation. Median is 38weeks. (Table-4).

Our study shows, 70% of the patients had premonitory symptoms before the onset of the convulsions and 30% of the patients had no such symptoms. P value is 1.0000, which is considered not significant. Odds ratio is 1.000.(Table-5).

In our study oedema was present in only 30% of the cases and was absent in 70% of cases. RR is 1.000 and 95% CI is 0.5953 to 1.680 and the P value is 1.0000 which is not significant.(Table-6).

In our study, we found 26% of the patients had albuminuria on admission. In 74%, result was not known.(Table-7).

Table 1: Distribution of patients based on parity.

Parity	G1	G2	G3	Total
No. of Cases(n-50)	43	4	3	50
%	86	8	6	100

Table 2: Distribution of patients based on age.

Age	≤20 Years	21-25 Years	26-30 Years	≥31 Years	Total
No. of Cases(n-50)	27	15	8	0	50
%	54	30	16	0	100

Table 3(A): Systolic BP on admission.

Systolic BP on Admission	<160	≥160	Total
No. of Cases(n-50)	17	33	50
%	34	66	100

Table 3(B): Diastolic BP on admission.

Diastolic BP on admission	<110	≥110	Total
No. of Cases(n-50)	26	24	50
%	52	48	100

Table 4: Duration of pregnany.

Duration of Pregnancy	25-28WKS	29-32WKS	33-36WKS	≥37WKS	TOTAL
No. of Cases(n-50)	2	7	7	34	50
%	4	14	14	68	100

Table 5: Premonitoring symptoms of patients at admission.

Premonitoring Symptoms	Present	Absent	Total
No. of Case(n-50)	35	15	50
%	70	30	100

Table 6: Oedema of patients at admission.

Oedema	Present	Absent	Total
No. of Cases(n-50)	15	35	50
%	30	70	100

Table 7: Urine for albumin of patients at admission.

Urine for albumin	Nil	1+	2+	3+	4+	Not done	Total
No. of Cases(n-50)	0	6	5	2	0	37	50

DISCUSSION

Result from our study, investigating eclampsia risk factors, confirm findings from previous studies that identified maternal age and nulliparity. Our study also observed an associations between the premonitory symptoms, increased duration of pregnancy, systolic and diastolic blood pressure at the time of admission as a risk factors of eclampsia in our study population.

The most common symptom and hallmark of preeclampsia and eclampsia is high blood pressure. This may be the first or only symptom. Blood pressure may be only minimally elevated initially, or can be dangerously high .In our study, 52% of the patients who had diastolic BP <110mmHg, develeved eclampsia. However, the degree of blood pressure elevation varies from woman to woman and also varies during the development and resolution of the disease process. There are also some women who never have significant blood pressure elevation.

In our study only 30% cases had oedema at the time of admission. At the same time oedema is not considered as a diagnostic criteria for preeclampsia because it occurs in 70% of normal pregnant women

Proteinuria is one of the cardinal features of preeclampsia, a common and potentially severe complication of pregnancy. However, two important points should be noted. First, the severity of proteinuria is only weakly associated with adverse maternal and neonatal outcomes, and should not be used to guide management.[14,15,16,17] Second, proteinuria may be absent: Up to 10 percent of women with clinical and/or histological manifestations of preeclampsia and 20 percent of women with eclampsia have no proteinuria at the time of initial presentation.[18,19] These observations are reflected in the 2013 American Society of Obstetrics and Gynaecology Task Force on Hypertension in Pregnancy recommendations.

CONCLUSION

Various risk factors including maternal age (<20years), nulliparity, premonitory symptoms, increased duration of pregnancy, systolic BP≥160mmHg and Diastolic BP<110mmHg were associated with more risk of eclampsia in our study population. But oedema had less association with the risk of eclampsia.

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