

Socioeconomic Maternal Risk Factors for Toxemia of Pregnancy: A Cross-Sectional Study in A tertiary Care Hospital of Chhattisgarh



Medical Science

KEYWORDS : Preeclampsia, Socioeconomic factors, Toxaemia of pregnancy

Dr. Dharmendra Kumar Gahwai

Assistant Professor, Department of Community Medicine, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh. PIN- 495001

Dr. Y.D. Badgaiyan

Professor and Head, Department of Community Medicine, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh. PIN- 495001

ABSTRACT

Objectives: – To study socioeconomic factors affecting toxemia of pregnancy among the mothers attending CIMS, Hospital Bilaspur (C.G.). Material and Methods: - Institution based descriptive cross sectional study.

Total 1376 antenatal cases were studied. Predesigned and pretested questionnaire was used to collect data and Chi-square test was applied. Results: – Prevalence of Preeclampsia and Eclampsia among study population was 6.8%. Socioeconomic factors have significant association with toxemia of pregnancy are education of mothers, source of water supply, use of sanitary latrine and IFA consumption during the pregnancy. Conclusion: Prevalence of toxemia in pregnancy is high in this region and the socioeconomic factors significantly affect toxemia of pregnancy.

INTRODUCTION

Preeclampsia and eclampsia are major pregnancy specific syndromes that contribute to maternal and fetal morbidity and mortality in India.^{1,2} Preeclampsia and eclampsia has remained a significant public health threat in both developed and developing countries contributing to maternal and peri-natal morbidity and mortality globally.³

Preeclampsia occurs in 5–8% of pregnancies worldwide, and is the second leading cause of direct maternal and fetal deaths⁴. In India it ranges from 2% to 10%, depending on the population studied and criteria used for diagnosis⁵.

Preeclampsia and eclampsia are gestational hypertensive disorders develop after 22 weeks of pregnancy, in which there is an increase in blood pressure and proteinuria. Preeclampsia causes abortion, prematurity, intrauterine growth retardation and still birth.

The etiology of preeclampsia is still obscure, despite many attempts to identify possible causes. Though causes for preeclampsia and eclampsia are unknown, there does appear to be certain risk factors associated with the condition. It is believed to be of multi-factorial origin. The factors that have been postulated to influence the risk of pre-eclampsia and eclampsia among the mothers include socioeconomic risk factors like education, occupation, socioeconomic class and antenatal care and clinical factors like diabetes, renal disease, obesity, multiple pregnancy, primi-parity, age above 30 years, personal or family history of pre-eclampsia, and chronic hypertension.

In developing countries, evidence on the association between these factors and pre-eclampsia and eclampsia are scarce. Hence there is a need to develop an integrated model for the estimation of patient specific risk factors for the development of preeclampsia on the basis of maternal demographic, socio-economic, obstetrics, nutritional and anthropometric parameters.

Hence, we conducted this study to determine the various socioeconomic and demographic risk factors of preeclampsia and eclampsia.

OBJECTIVES

To study of socioeconomic profile of mothers attending the CIMS Hospital Bilaspur (C.G.).

To study association of socioeconomic factors and toxemia of pregnancy among the mothers attending CIMS, Hospital Bilaspur (C.G.).

MATERIAL AND METHODS

A descriptive cross sectional study conducted in Obstetrics and Gynecology ward of tertiary care hospital CIMS, Bilaspur, Chhattisgarh from 30 July 2012 to 31 March 2013. Total 1376 cases were studied. Predesigned and pretested questionnaire was used to collect information regarding the socio-demographic profile and clinical profile of mothers during the pregnancy. All clinically diagnosed cases of preeclampsia and eclampsia by Obstetrics and Gynecology specialist were considered as cases of toxemia of pregnancy in this study. Statistical analysis was done in SPSS for Windows. Chi-square test was applied to know the association among the various socio-demographic factors and preeclampsia and eclampsia among mothers.

RESULTS

Prevalence of toxemia of pregnancy among study population in this study was 6.8% out of which 4.3% and 2.5% mothers were suffering from Preeclampsia and Eclampsia respectively.

TABLE 1- Prevalence of Pre-eclampsia and Eclampsia among study population.

DISEASE	NUMBER	PERCENTAGE
PRE-ECLAMPSIA	58	4.3 %
ECLAMPSIA	30	2.3 %
TOTAL	88	6.4 %
TOTAL STUDY POPULATION	1376	100 %

TABLE 2 - Socioeconomic factors affecting Toxemia of Pregnancy

YES	Toxemia of Pregnancy				
	%	NO	%		
EDUCATION	Graduate OR PG	0	0	56	100
	Intermediate	0	0	47	100
	HSC	14	7.1	184	92.9

	Middle School	19	5.0	363	95.0	p< 0.05
	Primary School	23	6.8	314	93.2	
	Illiterate	32	9.0	324	91.0	
	TOTAL	88	6.4	1288	93.6	
OCCUPATION	Professional	1	14.3	6	85.7	p = 0.537
	Semi-professional	0	0	4	100	
	Clerical/farmer	3	5.9	48	94.1	
	Skilled worker	0	0	23	100	
	Semiskilled worker	4	4.0	97	96.0	
	Unskilled worker	18	8.4	196	91.6	
	Unemployed	62	6.4	976	93.6	
	TOTAL	88	6.4	1288	93.6	
SOCIOECONOMIC CLASS	Upper	0	0	6	100	p=0.179
	Upper-middle	2	3.8	51	96.2	
	Lower-middle	4	2.7	146	97.3	
	Upper-lower	82	7.1	1073	92.9	
	Lower	0	0	12	100	
	TOTAL	88	6.4	1288	93.6	
RESIDENCE	Rural	65	7.3	829	92.7	p=0.07
	Urban	23	4.8	459	95.2	
	TOTAL	88	6.4	1288	93.6	
WATER SUPPLY	Open well	8	5.8	130	94.2	p<0.05
	Hand pump	47	8.9	481	91.1	
	Tank	3	6.7	42	93.3	
	Tape	30	4.6	627	95.4	
	Other	0	0	8	100	
	TOTAL	88	6.4	1288	93.6	
DISPOSAL OF NIGHT-SOIL	Sanitary Latrine	39	5.1	719	94.9	p<0.05
	Open	49	7.9	569	92.1	
	TOTAL	88	6.4	1288	93.4	
	TOTAL	88	6.4	1288	93.6	
ANC VISITS	Nil	5	6.3	74	93.7	p=0.899
	< 3	33	6.8	452	93.2	
	> (=)3	50	6.2	762	93.8	
	TOTAL	88	6.4	1288	93.6	
IFA TAB	Nil	9	5.7	150	94.3	p<0.05
	<100	49	8.6	523	91.4	
	> (=) 100	30	4.7	615	95.3	
	TOTAL	88	6.4	1288	93.6	

Table shows that toxemia of pregnancy was more common among the mother who had low level of education and 9% were affected among the illiterate mothers. Significant association found between the toxemia of pregnancy and level of education of mothers.

Table shows that 6.4% of unemployed and 8.4% of unskilled worker mothers affected by toxemia of pregnancy. However, no significant association or correlation was observed between toxemia of pregnancy and occupation. Above table shows that there was no significant association was found between the nature of work and toxemia of pregnancy.

Table shows that 7.3% of rural mothers and 4.8% of urban mothers were affected by toxemia of pregnancy.No signifi-

cant association was found between toxemia of pregnancy and residential area of mothers.

Table shows that mothers of upper-lower class of socioeconomic class were more commonly affected by toxemia of pregnancy. However no significant association (p<0.05) was observed between socioeconomic class and toxemia of pregnancy.

No significant association (p<0.05) was observed between the number of ANC visits and toxemia of pregnancy.

DISCUSSION

In the present study, the prevalence of toxemia of pregnancy was 6.8% among the study subjects. The national average of prevalence of Toxemia of pregnancy is 4.6 per cent of all pregnancies in India⁶.The prevalence is higher in present study which is probably due to this study was conducted in the tertiary care hospital where most of the cases are complicated cases referred from the peripheral health centers. Kamala Dhall⁷ studied the epidemiological characteristics of 1107 cases of preeclampsia and eclampsia admitted to the Nehru Hospital, Postgraduate Institute of Medical Education and Research, Chandigarh, India. The prevalence of preeclampsia and eclampsia was found to be 10.2 and 0.6%, respectively, of all hospital deliveries. The findings regarding the occurrence of preeclampsia and eclampsia were higher than the present study. This could be due to socioeconomic and demographic differences among the study subjects between the two different study areas. Vidya Subramaniam⁹ conducted a retrospectively analysis of data over a 36-month period, a total of 29562 deliveries were recorded, of which 1238 patients developed preeclampsia (4.18%) and 34 patients developed eclampsia (0.11%). The finding of this study is similar with the present study regarding prevalence of eclampsia and preeclampsia among the pregnant mothers.

Level of maternal education is significant factor associated with the toxemia of pregnancy. Toxemia of pregnancy is more common among the illiterate mothers (9%). Significant association (p<0.05) was observed. Findings in the study by Paul Kiondo et al¹⁰ who conducted case-control study was similar with the present study. Low education level among the pregnant women was the significant risk factor (OR 1.67, 95% CI: 1.12–2.48) for toxemia of pregnancy.

Silva LM, et al¹¹ conducted population-based cohort study, and examined data of 3547 pregnant women. Odds ratios of preeclampsia for low, mid-low and mid-high educational level compared with high educational level were calculated after adjustment for confounders. In this study the findings were similar with the present study that, the women with low educational level were more likely to develop preeclampsia (odds ratio 5.12; 95% confidence interval: 2.20, 11.93) than women with high educational level.

Occupation mothers and nature of work during pregnancy was not significantly associated with the toxemia of pregnancy. Socioeconomic class and residential area has no significant association with the preeclampsia or eclampsia among the pregnant mothers. Number of ANC visits do not associated with the toxemia of pregnancy. However, significant association was found (p<0.05) between the IFA tablets consumption during antenatal period and toxemia of pregnancy. Silva LM, et al¹¹ have found that low maternal socioeconomic status is a strong risk factor for preeclampsia this finding is contradictory with the finding of present study. Surrayal Halimi¹² et al have also found the

similar results that majority (82.40%) of the pregnant women suffering to toxemia of pregnancy belonged to poor socio-economic class.

CONCLUSION

The present study is institution based cross sectional study conducted to explore the effect of various socioeconomic factors over the occurrence of preeclampsia and eclampsia.

Prevalence of preeclampsia and eclampsia among mothers was higher in this study as it was an institution based study in which most of the cases are referred from the peripheral health centers due to complication of high risk pregnancy.

The study revealed that level of education of mothers has significant impact on the toxemia of pregnancy. However, no association was found with socioeconomic class, nature of work, residential area.

In this study it was found that antenatal visits had no preventive effect on toxemia of pregnancy. However it was postulated that the ANC visits have positive impact on the occurrence of toxemia in pregnancy. This finding denotes the poor quality health care services delivery in the region which needs significant improvement.

Moreover, large number of mothers not utilizing the antenatal care services in rural area due to lack of awareness, but even though the mothers who are seeking better health care during the pregnancy not getting even the optimum level of quality health care during the pregnancy. This is a serious issue regarding the health care of mothers in this region.

This study provides baseline information from the regional tertiary care hospital in this area, which could help with possible intervention for prevention of preeclampsia and eclampsia.

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