

Maternal and Fetal Outcome in Eclampsia: A Study From Tertiary Care Hospital

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ABSTRACT

Introduction: Eclampsia is an acute and life-threatening complication of pregnancy associated with elevated maternal and fetal morbidity and mortality. This study was done with the aim to evaluate the maternal and fetal outcome in eclampsia patients and to observe various factors affecting its occurrence and outcome. **Methods:** A retrospective cross-sectional hospital based study carried out in Nepalgunj Medical College, Nepalgunj from January 2015 to December 2016. Details and data obtained from maternity register were analysed. All patients with eclampsia were included and fetomaternal outcomes measured in terms of complications. Simple descriptive statistical method was applied for analysis. **Result:** Out of 6056 pregnant women, 46 had eclampsia with the incidence of 7.59 per 1000 deliveries. 58.7% of study population belonged to age group of 21-30 years followed by 36.96% from age less than 20 years. 78.26% cases were unbooked. 73.91% eclamptic patients were primi gravida and 60.87% had gestational age less than 37 weeks. Half of pregnancies with eclampsia underwent cesarean for delivery and 30.44% required ICU care. One third women developed eclampsia related complications and 2(4.35%) died. Common complications were atonic postpartum hemorrhage (15.21%), psychosis (8.71%) acute renal failure (4.35%). 60.86% newborn were preterm and 56.52% were low birth weight. In 50% newborn, Apgar score at 5 minutes was less than 7. Fetal death was 10.85%. **Conclusion:** Eclampsia continues to be one of the prime etiological factors for maternal and fetal morbidity and mortality. Therefore early recognition and proper management are vital to tackle this challenge.

Key words: Eclampsia, fetal, maternal, nepalgunj, outcome

INTRODUCTION

The term eclampsia is derived from a greek word, meaning "like a flash of lightning"¹. Pre-eclampsia when complicated with generalized tonic-clonic convulsions and/ or coma is called eclampsia¹. It is an acute and life-threatening complication of pregnancy associated with elevated maternal and fetal morbidity and mortality. Approximately 1 in 2000 deliveries is complicated by eclampsia in developed countries, whereas the incidence in developing countries varies from 1 in 100 to 1 in 1700 cases². No adequate data is available regarding incidence of eclampsia in Nepal, though some hospital based studies show incidence of eclampsia between 2.9 per 1000 deliveries to 13.8 per 1000 deliveries^{3,4}.

Eclampsia has been reported as number one killer in terms of maternal mortality in recent years in various studies^{5,6}. Cardiac failure, pulmonary edema, aspiration pneumonia, cerebral hemorrhage, acute renal failure, cardiopulmonary arrest, adult respiratory distress syndrome, pulmonary embolism, postpartum shock and puerperal sepsis are thought to be the cause of maternal death in eclampsia¹. Similarly prematurity,

intrauterine asphyxia, effects of drugs and trauma during delivery may increase perinatal mortality up to the extent of about 30-50%¹.

Though exact etiopathogenesis of eclampsia is not well understood, defective placentation and endothelial dysfunction are considered to be the core features. Eclampsia is found to be more common in rural population, young age, unbooked cases and primigravida^{3,4,7}.

Although all cases of eclampsia are not preventable but we can improve maternal and fetal outcome by good antenatal care, early detection of sign and symptoms of preeclampsia, prompt treatment and timely termination of pregnancy. This study was done at Nepalgunj medical college to see the maternal and fetal outcome in eclampsia patients and to evaluate various factors affecting its occurrence and outcome.

MATERIAL AND METHODS

This is a retrospective study done in the department of Obstetrics and Gynecology, Nepalgunj Medical College Teaching Hospital at Nepalgunj. Relevant data were retrieved from the maternity register for the period of two years i.e. from January 2015 to December 2016. Approval for the study was taken from the department. Out of total 6056 pregnant women coming to obstetrical department for delivery during the study period, 46 women were diagnosed as eclampsia. Socio-demographic and clinical profile of all women diagnosed as eclampsia were noted down. Maternal complications and maternal outcome along with fetal outcome were observed, tabulated, analysed and presented.

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RESULT

During the study period there were 6056 pregnant women who attended the obstetrical department of Nepalgunj medical college teaching hospital for delivery, out of which 46 women were diagnosed as eclampsia. The incidence of eclampsia at our centre during the study period was 7.59 per 1000 deliveries.

By analyzing socio-demographic characteristics, it was observed that more than half of study population i.e. 58.7% belonged to age group of 21-30 years followed by 36.96% from age less than 20 years. There was slight predominance of rural participants.

Variable	Frequency (N)	Percentage (%)
Age group (years)		
≤20	17	36.96
21-30	27	58.7
>30	2	4.34
Total	46	100
Domicile		
Rural	26	56.52
Urban	20	43.48
Total	46	100

Table I: Socio-demographic characteristics of study subjects

Out of 46 eclampsia patients, only 10(21.74%) had antenatal booking and 36(78.26%) were unbooked cases. Majority of patients i.e. 34(73.91%) were primigravida and 28(60.87%) cases were presented at gestational age less than 37 weeks. Antenatal eclampsia was the commonest diagnosis in 42(91.3%) women. Most of the patients were managed in general ward and 14(30.44%) women with eclampsia required admission to intensive care unit. Half of the patients underwent Cesarean section for delivery and 4(8.7%) required assisted delivery.

Almost 2/3rd woman with eclampsia had developed no complication. Atonic postpartum haemorrhage was the most common complication in 7(15.21%) women followed by psychosis in 4(8.71%) women and acute renal failure in 2(4.35%) women with eclampsia. Aspiration pneumonia and cerebro vascular accident was observed in one woman each. Total number of maternal mortality during the study period was eight, out of which 2(25%) women died due to complication of eclampsia, one due to aspiration pneumonia and another due to cerebro vascular accident respectively.

Variable	Frequency (N)	Percentage (%)
Booking status		
Unbooked	36	78.26
Booked	10	21.74
Gravidity		
Primi	34	73.91
Multi	12	26.09
Gestational age (weeks)		
<37	28	60.87
>37	18	39.13
Types of eclampsia		
Antepartum	42	91.3
Postpartum	4	8.7
Mode of care		
Ward	32	69.56
Intensive care unit	14	30.44
Mode of delivery		
Normal vaginal delivery	19	41.3
Assisted delivery	4	8.7
Cesarean section	23	50

Table II: Clinical characteristics of study subjects

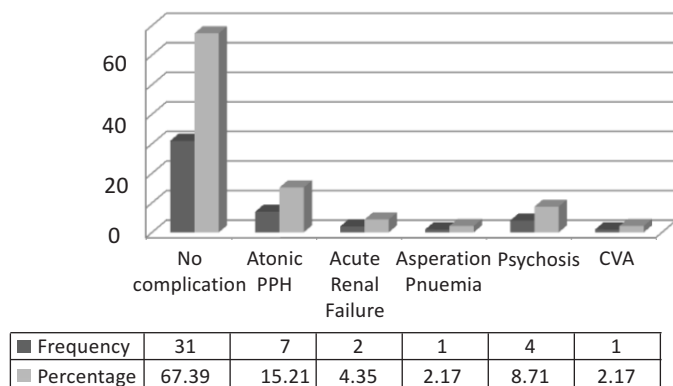


Figure 1: Maternal complications

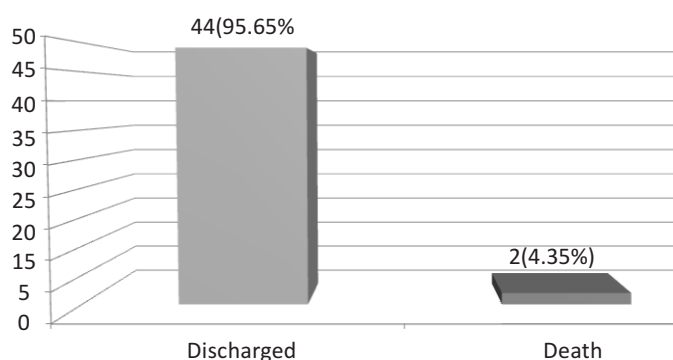


Figure 2: Maternal outcome

It was found that 28(60.86%) newborn were preterm and 26(56.52%) were low birth weight. In half number of newborn, Apgar score at 5 minutes was less than 7, Three (6.5%) were still born and 2(4.35%) were macerated babies.

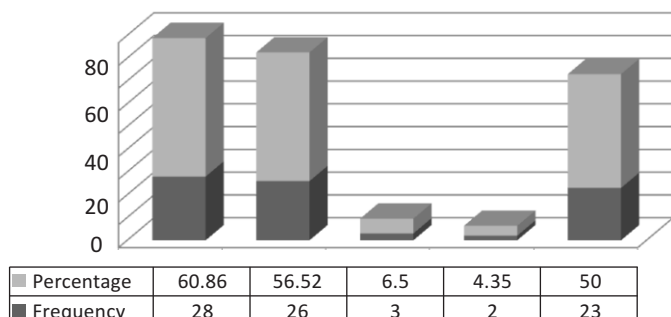


Figure 3: Fetal outcome

DISCUSSION

The incidence of eclampsia at our centre during the study period was 7.59 per 1000 deliveries. The result is comparable to studies conducted at other parts of Nepal by Chaudhary P and Ghimire S who reported hospital based incidence of eclampsia was 2.9 per 1000 deliveries and 13.8 per 1000 deliveries respectively^{3,4}. Similar incidence was reported in India as well. The incidence of eclampsia was reported 10 per 1000 deliveries by Sunita TH. et al and 5.8 per 1000 deliveries by *Shamshad Begum Shaikh et al*^{8,9}.

In our study, the incidence of eclampsia was highest in the younger age group i.e. 58.7% from age group of 21-30 years and 36.96% from age less than 20 years of age and also in primigravida (73.91%) women. Similar findings were observed by Shaikh SB et al. and Acharya G et al^{9,10}. Gautam (Bhattarai) SK et al. found 61.3% of their study sample were primigravida¹¹. The finding demands regular and compulsory screening of young pregnant woman especially primigravida for preeclampsia/eclampsia. It was noticed that 78% of women who developed eclampsia were unbooked that means they had not received antenatal check up. Ghimire S. documented 97% women who developed eclampsia had not received antenatal check up⁴. Duhan L. et al found 96% of cases were unbooked⁷. Lack of antenatal care is a serious concern and appropriate steps are to be taken by the government to tackle with the menace of eclampsia. Routine screening methods during antenatal check up helps to identify potential eclamptic women but eclampsia may not always be predictable and preventable. The commonest type of eclampsia was antepartum (91.3%) in our study. Similar observation was noticed in other studies as well. Ghimire S found in 83% of her patients had antepartum eclampsia⁴, P Chaudhary found it in 70% of cases³. This finding suggests importance of antenatal screening during pregnancy.

My study reveals that half of eclamptic women were undergone cesarian operation for delivery of baby and 30.44% required ICU care. The rate of cesarian section is comparable to other studies. The percentage of cesarian section required in eclamptic women was reported 55.31% by Chaudhary P et al. and 45% by Sunita TH et al^{3,8}. The proportion of patients required intensive care in our study is similar to observation made by Ghimire S who reported that 29.46% of patients required intensive care in her study⁴. These findings warrant need of urgent referral to tertiary care centre in case of women with eclampsia.

Eclampsia is an obstetric emergency with significant maternal and fetal morbidity and mortality. Our study found that 1/3rd of patients developed eclampsia related complications commonly being atonic postpartum heamorrhage in 15.21%, psychosis in 8.71% and acute renal failure in 4.35% etc. There were total two deaths (4.35%) due to eclampsia related complications. One patient died due to aspiration pneumonia and another due to cerebro vascular accident. Total maternal death during the study period was 8 and eclampsia contributed 25% in total maternal mortality during study period. Similar findings were reported in other studies done in Nepal and in India. Duhan et al reported maternal complications in 37% patients which were Abruptio placenta (6%), ARF (6%), pulmonary edema (4%), stroke (3%), HELLP syndrome (2%) and DIC (1%).⁷ They reported 6% maternal mortality among patients with eclampsia⁷. Similar maternal outcome was mentioned by Sunita T.H.⁸, Ghimre S.⁴ and Shakya et al.¹²

It was found that 28(60.86%) newborn were preterm and 26(56.52%) were low birth weight. In half number of newborn, Apgar score at 5 minutes was less than 7. There were total 5(10.85%) fetal deaths observed in our study i.e. three (6.5%) were still born and 2(4.35%) were macerated babies. Many studies have suggested that there is higher risk of preterm delivery and low birth weight in eclampsia along with increased rate of fetal death^{3,4,7,13}.

CONCLUSION

The study concluded that eclampsia continues to be one of the prime etiological factors for maternal and fetal morbidity and mortality. Eclampsia was commonly observed in younger primigravida lacking antenatal care. Maternal and fetal complications in eclampsia are notably high requiring management at tertiary care centre. There is an urgent need for proper antenatal care, intensive monitoring of women with eclampsia and timely hospitalization to improve both the maternal and fetal outcome.

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