Eclampsia: Feto-Maternal Outcomes in A Tertiary Care Centre in Eastern Nepal

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ABSTRACT

Introduction: Eclampsia is a preventable and treatable cause of maternal morbidity and mortality with poor feto-maternal outcome in developing countries. Despite development in the level of health education expertise in human resources and institutional obstetric care in our country, the delay in early recognition of the problem, transportation to proper health facility and getting proper expert care are major hurdles to reduce complications. Therefore we decided to study feto-maternal outcomes in our setting.

Methods: A retrospective cross-sectional hospital based study carried out in Nobel Medical College, Biratnagar, from 17th June 2014 to 16th June 2015. Details and data obtained from Medical Record Section were analysed. All patients with eclampsia were included and fetomaternal outcomes measured in terms of complications. Simple descriptive statistical method was applied for analysis.

Results: Among 8,066 deliveries, 112 had eclampsia with incidence of 13.8/1000 deliveries. Majority (41%) were of <19 years of age. Above 90% were unbooked. Aoubt 63.4% were primiparas and 83% had antepartum eclampsia. Eclamptic fits were more common (41.6%) in 37-40 weeks period of gestation. Fits to delivery interval was more than six hours in 89.1% women and 69.3% women underwent caesarean delivery. About 18.9% women developed eclampsia related complications. Common causes of maternal deaths (5.36%) were pulmonary edema, aspiration pneumonia, cerebrovascular accidents and HELLP syndrome. Perinatal death was nine percent.

Conclusions: Although the obstetric care facilities are improving with time, the feto-maternal outcomes are still poor in our country. Therefore early recognition and proper management are vital to tackle this challenge.

Keywords: *eclampsia; fetomaternal outcomes; retrospective analysis.*

INTRODUCTION

Eclampsia is a preventable and treatable cause of maternal morbidity and mortality with poor feto-maternal outcomes in developing countries.[1] Eclampsia is rare in the developed world with good facilities.[2] Despite the relative development in the level of women health education ,expertise in human resources and institutional obstetric care in our country, still the delay in early recognition of the problem, transportation to proper health facility and getting proper expert care in time are major hurdles to reduce complications. We hypothesize that the burden of eclampsia in our tertiary centre is still high. Therefore we decided to study feto-maternal outcomes in our setting.

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METHODS

A retrospective cross-sectional hospital based study that will be carried out in Nobel Medical College, Biratnagar, a tertiary care centre, in Eastern region. Detail analysis of the records of the patients with eclampsia was carried out admitted from 17th June 2014 to 16th June 2015 from Medical Record Section. All patients with eclampsia were included and feto maternal outcomes were measured in the form of complications and death. The study was approved by the Institutional Review Committee (IRC) of Nobel Medical College, Biratnagar authorized by Nepal Health Research Council (NHRC). Collected data was entered into Microsoft Exel. The data was analysed using SPSS version 14.0. Simple descriptive statistical methods were applied for analysis.

RESULTS

During one year duration, among 8066 deliveries, 112 had eclampsia with incidence of 13.8/1000 deliveries, 1.38%. Forty one percent were of <19 years of age and majority were young (78%) of less than 24 years. More than 90% were unbooked in our centre but most of them had their antenatal check care in sub health post, health post and primary health centres. In spite of this, they were late to come to our centre. Most (64%) were primiparas followed by multiparas (33.9%) and 83% had antepartum eclampsia. Eclamptic fits were more common (41.6%) in 37-40 weeks period of gestation (POG) followed by (36.6%) 34-37 weeks of POG. It occurred rarely in <34 weeks POG. Fits to delivery interval was more than six hours in nearly 90% women. Most (61.4%) have fits to delivery interval was 6-12 hours. Nearly 70% women underwent caesarean delivery. Nearly 20% women developed eclampsia related complications like cerebral edema, renal failure, HELLP syndrome, pulmonary edema and psychosis. Thirty percent of the women needed intensive care (ICU). Common causes of maternal deaths (5.36%) were hemolysis, elevated liver enzyme and low platelets (HELLP) syndrome and pulmonaruy edema. Among two cerebrovascular accident patients, one died. Two of three pulmonary edema patients died. Patients with psychosis and renal failure recovered completely. Pulmonary aspiration caused death of one while two of four HELLP syndrome died. Perinatal complications included preterm baby(42.6%) and low birth weight(39.6%).32.6% babies have APGAR score of <7 and of which 69.6% needed neonatal intensive care(NICU).Six were fresh stillborn while three were macerated. Perinatal death was nine percent.

Table 1. Sociodemographic characteristics of Eclamptic patients.

Age in years	n (%)
Less than 19	46 (41.1)
20-24	41 (36.6)
25-29	14 (12.5)
30-34	8 (7.1)
More than 35	3 (2.7)
Parity distribution	
Primipara	71 (63.4)
Multipara	38 (33.9)
Grand Multipara	3 (2.7)
No antenatal care	109 (97.32)
Antenatal care	3 (2.68)
Total	112 (100)

Almost all of the women did not receive antenatal care in tertiary care centre. But most 68 (60.71%) of them had their antenatal care in sub health post, health post and primary health centers that was not at par the standard requirement with poor documentation.

Table 2. Types of eclampsia.

Eclampsia	n (%)
Antepartum	93 (83)
Intrapartum	8 (7.1)
Postpartum	11 (9.8)
Total	112 (100)

Table 3. Period of gestation and fits to delivery interval.

Period of gestation	n (%)
Less than 34 weeks	6 (5.9)
34-37	37 (36.6)
37-40	42 (41.6)
Post dated	16 (15.8)
Total	101 (100)
Fits-delivery interval	
Less than 6 hours	11 (10.9)
6-12 hours	62 (61.4)
12-24 hours	28 (27.7)
More than 24 hours	0 (0.0)
Total	101 (100)

Almost all women delivered within 24 hours of the convulsion.

Table 4. Mode of care.	
Mode of Care	n (%)
Intensive care (ICU)	33 (29.46)
Ward care	79 (69.54)
Admission <7 days	53 (47.32)
Admission >7 days	59 (52.67)
Mode of delivery	
Normal vaginal delivery	27 (26.7)
Vaccum/ Forceps	4 (4.0)
Cesarean section	70 (69.3)
Total	101 (100)

One third of the patients required special care and most patients stayed in hospital for more than a week. Majority underwent emergency cesarean section.

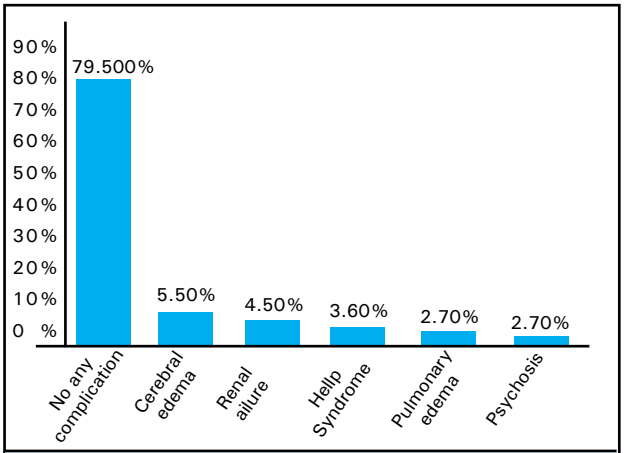

Figure 1.Maternal complications.

Nearly 20% patients developed some forms of complications. Six maternal deaths occurred with CFR 5.3%, pulmonary complication being the most common cause. Nearly half of the patients died because of pulmonary complications.

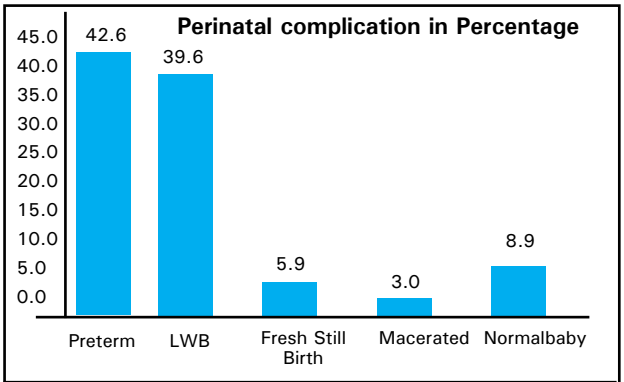

Figure 2. Perinatal complication in Percentage.

More than 90% of the babies had complications from LBW to preterm and perinatal death was nine percent.

DISCUSSION

During the period of one year (17th June 2014 to 16th June 2015), among 8066 deliveries, 112 had eclampsia with incidence of 13.8/1000 deliveries and 1.38%. The different incidence of eclampsia has been reported as 0.29,[3] 0.24,[4] 0.14,[5] 0.09,[6] Kathmandu, 0.40[7] in Western Nepal, 0.66,[8] in Eastern Nepal and 1.38 in present study, whereas, 1.0,[9] 3.20[10] in the India and 0.05[11] in the UK.

Our study revealed higher figure than 0.29% in maternity hospital by Chaudhary P et al,[3] 0.24% in Patan Hospital by Acharya G et al,[4] 0.14% in maternity hospital by Shakya B et al,[5] 0.09% in Institute of medicine Teaching hospital by Gautam SK et al,[6] all studies from Kathmandu and in Far western region, Bheri Zonal Hospital 0.4% by Dhakal G et al,[7] Eastern region BPKIHS 0.66% by Rayamajhi AK et al,[8] an east Indian study 1% by Sunita TH et al,[9] in the United Kingdom(UK) 0.05% by Douglas KA et al[11] but lower than another Indian study 3.2% by Singh S et al.[10] Detail analysis of the above studies reveals great variation in incidence and that the incidence of eclampsia depends upon multiple factors. The incidence is determined by temporal factor, socioeconomic development, age at marriage, maturation and modernization of the health facility, concentration of the cases in single centre especially from Safe motherhood programme, taking-no-risk policy and referring the serious eclamptic patients to medical colleges. Similarly, geographical and racial factors also thought to play role in this high incidence that is yet to be further explored. Most of the time it becomes really difficult to count the factors that directly or indirectly come into play, the only thing is that the predominant and modifiable factors are to be taken into account when formulating plan and policies. As far as explanation for our higher figure of incidence is concerned, our centre is in the border of Nepal and India, where early marriage is common; people have poor socioeconomic status and antenatal care in vast majority of the women. We have also operated Safe motherhood programme, we cover large catering areas in the Eastern region. We assume that the cases are concentrated in our centre. The incidence in Kathmandu valley is decreasing with time probably reflecting development in socioeconomic status and maturation of health facilities, this trend is further verified by very low incidence in UK even 20 years back reflecting degree of development lowering the incidence of eclampsia. Therefore overall development of the society as a whole is more important than one or two factors in isolation for the reduction of the incidence of eclampsia and its complications.

Eclampsia is more common (85%) in young women

and (63.4%) primigravidas in our study which is nearly comparable to studies by Sunita TH et al[9] and Kaur P et al.[12] Almost all (97%) of the patients did not receive antenatal care from our centre and 61% of them received some forms of antenatal care from peripheral government facilities but their level of care and documentation were not as per the standard of care. It seems that awareness on the part of the patient and health care providers is not adequate for early referral and proper care. Gautam SK et al[6] reported that 98.4% of their patients received antenatal care and incidence of eclampsia in their study was low. Surprisingly, a study done by Manandhar BL showed that antenatal care could not reduce the risk of severe preeclampsia/eclampsia. Most of our patients have antepartum eclampsia and which occurred at term pregnancy in most patients. Our findings were correlated with studies done by Jha R et al[14] and Kaur P.[12] Only 10.9% of the patients delivered within 6 hours of convulsion which is lower (29%) than another study Sunita TH et al[9] and 17.02% in <5 hours by Chaudhary P et al.[3] Early termination of pregnancy could have been better but home-to-hospital time was long probably because of logistic and other constraints including transportation. Vast majority(69.3%) of our patients were delivered by cesarean section which is higher than other studies 55.31% by Chaudhary P et al,[3] 45% by Sunita TH et al[9] in but lower than the other study by Gautam SK et al[6] where all eclamptic patients underwent caesarean section. The rate of our cesarean delivery was high probably because of late presentation to the centre. Many 29.46% patients required intensive care and many required special sick-patient care and 52.67% patients were admitted in hospital for more than a week,19.5% of the patients developed complications that is higher than a recent study in Kathmandu 7.22% Gautam SK et al it probably reflects the good health care and transportation facility in Kathmandu. Common complications were related to pulmonary, nervous system and bleeding in our study which is corroborated with findings with an Indian study.[9] Our maternal mortality rate was 5.35% and cardiopulmonary and HELLP syndrome were most common cause of death and another study[5] shows 4.4% maternal deaths because of cardiopulmonary complications. Another study in India showed maternal mortality rate of 4%.[9] The different types of complications can only be managed with involvement of different sub-specialties. This scenario reflects the expert level of care and huge economic burden, these patients use even in tertiary centre.

Also we assume that the early phase development of human resources and health facilities which are not at par the requirement for managing eclampsia in the periphery than in centre may be the cause of low maternal mortality in Kathmandu. Of the 101 babies delivered only nine percent were normal, others have several complications like preterm, low birth weight and still birth. 32.6% of newborn have APGAR score of <7 of them 69.69% percent newborn required neonatal intensive care. Our study showed perinatal mortality of 27%, 21% in study by Rayamajhi AK et al,[8] 44% by Kaur P et al,[12] Khanum M et al (38%). The perinatal mortality is very high in our and other studies which reflect late arrival to the centre including other complications of eclampsia. Perinatal mortality can be reduced by early intervention and good neonatal care services which is prevalent in developed countries having very low perinatal mortality rate. Although it is a retrospective study where proper recording of data may be lacking it still gave us tremendous information. In summary we conclude that the eclampsia continues to be the most important cause of maternal and perinatal morbidity and mortality in eastern Nepal. These above findings suggest that the lack of proper antenatal care, low socioeconomic status, a lack of awareness of early recognition, referral and prompt treatment of the eclampsia in the community are important issues. Proper health education and public awareness by which eclamptic patients seek timely medical care should be promoted at all level of community.

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