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Evaluation of Morbidity and Mortality in Eclampsia: A Study in a Tertiary Care Hospital, Rajshahi, Bangladesh

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Abstract **Original Research Article**

Introduction: Eclampsia is a hypothetically life-threatening rare tricky situation of the hypertensive disorders of pregnancy, which is responsible for huge records in morbidity and deaths among women of reproductive age and their offspring. It is an occurrence of convulsion linked with pregnancy complicated by preeclampsia. The estimate of incidence and the burden of eclampsia is still a challenging pursuit worldwide; currently only seven countries have national data on the topic. ***Aim of the study:*** To assess the morbidity and mortality in eclampsia. ***Methods:*** This was a cross sectional observational study carried out in the Department of Obstetrics and Gynaecology in 250 Bedded General Hospital, Pabna, Bangladesh during the period from June 2016 and July 2016. Proper written consent form all the participants were obtained and the ethical committee of the hospital had approved the study before starting the intervention. In total 178 pregnant women with eclampsia were finalized as the study population. ***Result:*** In our study we found in total 148 live births from total 178 mothers which were 83.15% against total study population. Among all the babies 139 were survived which was 93.91% among total live births. Death after birth was 9 in number which was 6.08% among total live births. Early neonatal death was 13 in number which was 7.3% against total mothers. Stillbirths were 16 in number which was 9% against total mothers. In perinatal complication analysis we found 42 babies with jaundice which was 28.38% among live births. Babies with septicemia were 28 (18.92%), with respiratory distress 25 (16.89%), with neonatal convulsion were 7(4.73%) and with no complication were 46 (31.08%). ***Conclusion:*** It was observed in our study that; lower income families have a worse performance in all obstetric health care indicators among women with eclampsia. So, Proper health care and mental health facilities in order to get better obstetric and perinatal outcomes might be the faster route to reduce severe maternal outcome due to eclampsia.

Keywords: Eclampsia, Pregnancy, Reproductive Age, Severe Maternal Outcome.

INTRODUCTION

Eclampsia is a hypothetically life-threatening rare tricky situation of the hypertensive disorders of pregnancy, which is responsible for huge records in morbidity and deaths among women of reproductive age and their offspring [1-4]. It is an occurrence of convulsion linked with pregnancy complicated by preeclampsia [5]. The estimate of incidence and the burden of eclampsia is still a challenging pursuit worldwide; currently only seven countries have national data on the topic [6]. A study on preeclampsia and eclampsia, performed in 2013, specified that the prevalence of eclampsia varies from up to 4% in Nigeria and 0 to 0.1% in Europe; Brazilian studies showed a 0.6% incidence [6, 7]. However, 94.6% of the data were collected in the USA, emphasizing a noticeable regionalization bias and, thus, the need for more studies, particularly in low- and middle-income countries [6]. The incidence of eclampsia in developed countries is estimated to about 5-7/10,000 deliveries. Whereas in developing nations varies widely 1 case per 100 to 1 case per 1700 pregnancies [8]. Existing research and data reports that globally ten million women develops pre-eclampsia each year; of which 76,000 women die from this condition. Most of these deaths occur in Low and Middle Income Countries (LMICs) [9]. Preeclampsia precursor to eclampsia ranges between 2 % to 10 % of total pregnancies globally. WHO estimates frequency of preeclampsia is seven times complex in developing countries than developed world [2]. Eclampsia has always been as a major public health issue both in developed and developing countries. Still, owing to limited number of facilities-based service provision, accessibility, and affordability of patients a very few studies were done

considering fetal and maternal outcome of eclampsia in Bangladesh. Bearing in mind the scarce quantity of evidence, we carried out this study in an attempt to assess the morbidity and mortality in eclampsia. This study will offer new information that will help to policy planers, to formulate strategies to improve perinatal outcome in eclampsia and will create some interest for further research.

OBJECTIVES

a) General objective

- To assess the morbidly and mortality which are related to eclampsia in Bangladesh

b) Specific Objectives

- To assess the prevalence of perinatal death related to eclampsia in Bangladesh
- To assess the risk factors of eclampsia in women in Bangladesh

METHODOLOGY & MATERIALS

This was a cross sectional observational study carried out in the Department of Obstetrics and Gynaecology in 250 Bedded General Hospital, Pabna, Bangladesh during the period from June 2016 and July 2016. Proper written consent form all the participants were obtained and the ethical committee of the hospital had approved the study before starting the intervention. In total 178 pregnant women with eclampsia were finalized as the study population. Eclampsia patients admitted to this hospital during the study period constitute the samples. After admission, diagnosis was made mostly on the basis of history and clinical presentation with minimum aids. We used Face to face interview, examination finding & investigation report, Semi structured questionnaire & check list. Through proper administrative procedure by the researcher took the verbal consent of the patient to interview and examine her. Finding was recorded after data collection, data were checked for consistency and necessary corrections were made of needed. Data were collected and analyzed by using MS-Excel and SPSS version 20. According to the exclusion criteria, patients who were discharged within 48 hours of delivery and cases other than clinically confirmed eclampsia were excluded from the study.

RESULT

In our study among all the participants we found most of the cases were from 20 to 30 years age group. The number was 120 which were 67.42% of total population. This trend was followed by 37 (20.79%) from >30 years' age group and 21 (11.80%) from <20 years' age group. In socio-economic status analysis we found the highest cases from lower class people which 47.75% (n=85). This trend was followed by 59 (33.15) from middle class and 34 (19.10%) from higher class families. Most of the cases of our study were with 1-2 parity and their number was 95 (53.37%). It was followed by 69 (38.76%) with no parity and 14 (7.87%) with three or more parity. In our study we found most of the patients taken irregular antenatal care. The number of such type of cases was 98 (55.06%). This trend was followed by 49 (27.53%) had not taken antenatal care at all and only 31 (17.42%) patients taken proper antenatal care. As per the report of gestation period we found 95 (53.37%) were with gestation of 29-36 weeks which was the highest. This trend was followed by 71 (39.89%) were with >37 weeks and 12 (6.74%) were with <28 weeks. In our study we found in total 148 live births from total 178 mothers which were 83.15% against total study population. Among all the babies 139 were survived which was 93.91% among total live births. Death after birth was 9 in number which was 6.08% among total live births. Early neonatal death was 13 in number which was 7.3% against total mothers. Stillbirths were 16 in number which was 9% against total mothers. In perinatal complication analysis we found 42 babies with jaundice which was 28.38% among live births. Babies with septicemia were 28 (18.92%), with respiratory distress 25 (16.89%), with neonatal convulsion were 7 (4.73%) and with no complication were 46 (31.08%).

Table-I: Age distribution of participants (N=178)

Age (Years)	n	%
<20	21	11.80
20-30	120	67.42
>30	37	20.79

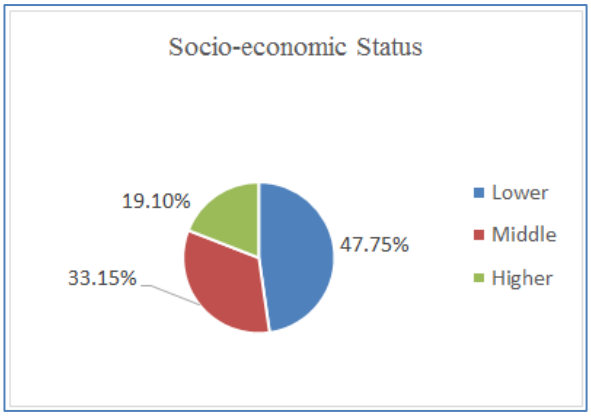

Fig-I: Distribution of socio-economic status of participants (N=178)

Table-II: Distribution of parity of participants (N=178)

Parity	n	%
0	69	38.76
1-2	95	53.37
≥3	14	7.87

Table-III: Status of antenatal care of participants (N=178)

Antenatal care	n	%
None	49	27.53
Irregular	98	55.06
Regular	31	17.42

Table-IV: Duration of gestation among participants (N=178)

Duration (Week)	n	%
<28	12	6.74
29-36	95	53.37
>37	71	39.89

Table-V: Outcome of pregnancies among the study participants

Parameters	n	%
Live birth	148	83.15
Survived	139	93.91
Death after birth	9	6.08
Early neonatal death (END)	13	7.30
Stillbirth (SB)	16	8.99
Macerated	3	1.69
Perinatal death (END + SB)	29	16.29

Table-VI: Distribution of perinatal conditions/complication among live birth (n=148)

Complications	n	%
Jaundice	42	28.38
Septicemia	28	18.92
Respiratory distress	25	16.89
Neonatal convulsion	7	4.73
No complication	46	31.08

DISCUSSION

Frequency of eclampsia in the hospitals of developing country is more common than the other part of the world. The occurrence of Eclampsia in Eastern India is 3.2%. In Kerla is 3.8%, 4.9% in Andra Pradesh, 15% in Madya Pradesh and 20.7% in Bihar [10]. These statistics are greater parallel to developed countries. In a study it was stated that, 'the incidence of 1 in 3250 pregnancies in US [11] and 1 in 2000 pregnancy in Europe[12] were found. The incidence of eclampsia in developed countries is considerably low. In our study, majority of the cases (88%) were un-booked cases and/or irregular Antenatal care, and with low socio economic status. The signs and symptoms of pre-eclampsia were not detected until development of eclampsia was observed. In our study eclampsia was common in young pregnant woman same as in the (83%) study of Chaurvedi *et al*. [13]. Concerning parity, our study shows eclampsia was meaningfully linked to primigravida (53.37%) and this finding is constant with finding of Acharya G *et al*. (71.42%) this may explain the immunological causes for preeclampsia and eclampsia and PND is the highest in this group. In relation to perinatal outcome, it shows that 83.15% was born alive and total still birth in eclamptic patients were 9% which are similar to study formerly done in Bangladesh. The hypertensive disorders throughout pregnancy are significant sources of maternal death all over the world and most of these deaths are recognized to eclampsia. The hypertensive syndromes also subsidize widely to still birth and neonatal morbidity and death. In our study, perinatal death was 16.29 % which is inferior to that of study done by chowdhury P where the rate was 20% Patan hospital 31.25%, 38.6%. We also showed that 31.08% babies out of 148 live birth had no complication and 28.38% developed neonatal jaundice, 18.92% had developed septicemia, 16.89% had respiratory distress and 4.73% suffered from neonatal convulsion. These statistics is similar to many studies done in Bangladesh, earlier. Hypertensive expectant mothers (or gravidas) are predisposed to the improvement of potentially fatal complications of pregnancy particularly abruption placentae, distributed intravascular coagulation cerebral haemorrhage hepatic miscarriage and acute renal failure. Perinatal death was very high in our study compared to Baha's [9] study (11.8%). But in Bangladesh in several studies perinatal death was 32.1%7, 28%8 and 26.8% [14]. In a review of four different studies presented at the First International Conference of Obstetrics and Gynecology held in Bangladesh, perinatal mortality in eclampsia various from (31 to 41) % [16], and it seemed very high in contrast to general perinatal mortality rate in Bangladesh which at present is 70 per thousand livebirths [17]. In developed country, perinatal mortality in pre-eclampsia diverse from 35 to 160/10005. In our study 27.53 % of them had no antenatal care (ANC); 55.06% had unbalanced ANC or were attending the hospital for the first time after being talk about. Most of them came from low socioeconomic background. In our present study the majority of patients belong to age group of 20 – 30 (67.42%) years. Several studies were done to see the risk factors of perinatal outcome of eclampsia and presented that eclampsia was found to be predominantly common in adolescent and young pregnant women. The finding is consistent with the study done by chowdhury P, as the adolescent pregnancy constitutes a large number of hospital admission in obstetric unit and it may explain the higher no of cases of eclampsia in this age group. This cause of still birth may be due to late arrival of patients after onset of fits result in severe intrauterine hypoxia and intrauterine death. This may reveal lack of public awareness, lack of antenatal checkup ignored position of female in the family poor decision making facility of female, poor communication system and demerits of conservative method in patient management. Sources of early neonatal death may be as a result of high rate of eclampsia in preterm pregnancy affecting high preterm delivery and high perinatal loss. Other causes may be influenced by the availability and skills of neonatal care facilities in hospitals.

LIMITATIONS OF THE STUDY

This was a single centered study with a small sized sample. So the findings of this study may not reflect the exact scenario of the whole country.

CONCLUSION AND RECOMMENDATIONS

It is known that social and economic determinants are associated with higher maternal and perinatal mortality. Our findings also show that lower income families have a worse performance in all obstetric health care indicators among women with eclampsia. Improving health systems is a must to reduce morbidity and deaths in women of reproductive age and their offspring. Proper health care and mental health facilities in order to get better obstetric and perinatal outcomes might be the faster route to reduce severe maternal outcome due to eclampsia. Succeeding emergency obstetric health care by encouraging continued staff training and growing the number of well-equipped health care facilities are a more acceptable and expedient way not only for women in Bangladesh, but also emerging nations who endeavor to relieve the burden of eclampsia.

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