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Perinatal Outcome in Eclampsia: A study in a tertiary care hospital, Dhaka, Bangladesh

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Abstract
Background: Eclampsia is a major cause of maternal injury and death in developing countries like Bangladesh. Still Eclampsia appears as one of the five major causes of maternal mortality in Bangladesh, despite the incidence dropped to 0.2%-0.5% of all deliveries.
Objectives: The aim of this study was to assess perinatal outcome in Eclampsia in a public hospital in Dhaka, Bangladesh.
Patients and Methods: A comparative cross-sectional study, enrolled 211 samples among them 97 study population from Eclampsia unit and 114 from Gynecology & Obstetric unit in public the hospital.
Results: In the study mean age of the cases and controls were 22.4 ± 4.5 and 24.0 ± 4.9 years respectively. The lowest and highest ages of cases and controls ranged from 17– 38 and 17– 42 years respectively. Study showed that among perinatal outcome 211, Eighty Four (84.47%) were live birth, 71.42% survived, 11.80% were early neonatal death (END), 15.52% were still birth (SB). Total perinatal death (END + SB) were 44 which representing 27.32% of total birth. This diagram shows that 32.56% babies out of 182 live birth had no complications in case group but 56.85 in control group. In control group 27.65% had developed neonatal jaundice but 26.5% in case group, 20.54% had developed septicemia in case group nut 18.56% in control group, 16.91% had respiratory distress in case group but 14.56% in control group. Six (6.25%) suffered from neonatal convulsion in case group but only 1.25% in control group.
Conclusion: The community should be educated regarding importance of antenatal care, especially during last trimester immediate referral to a tertiary center is necessary in all patients with morbid symptoms of pregnancy induced hypertension (P.I.H). Vigilant antenatal, intra-natal and postnatal management of all such patients will improve the maternal and perinatal outcome related to Eclampsia.

Keywords: eclampsia, pre-eclampsia, pregnancy, Primipara

1. Introduction
Eclampsia defined as 'the occurrence of convulsion associated with pregnancy complicated by preeclampsia [1]. Existing research and data reports that globally ten million women develop pre-eclampsia in each year; of which 76,000 women die from this condition. Most of these deaths occur in Low and Middle Income Countries (LMICs) [2, 3]. Furthermore, women in developing countries are likely to develop eclampsia ten times higher than these in the developed countries [2]. In Bangladesh as it is elsewhere in the developing countries eclampsia is a major cause of maternal injury and death. Despite of the incidence dropped to 0.2%-0.5% [4] of all deliveries, the incidence remains 5% of in Bangladesh [4, 5]. Still eclampsia appears as one of the five major causes of maternal mortality. Additionally, eclampsia is responsible for still birth and neonatal injury and death in the country. Eclampsia often result in low-birth weight (LBW), Intrauterine Growth Retardation (IUGR), neonatal asphyxia, neonatal hyperbilirubinaemia, neonatal sepsis, prematurity and neonatal asphyxia [4. In 2017, a survey shows 29% perinatal death was observed among the eclampsia patients in a hospital [6]. Another hospital studyshows that 32.8% perinatal death rate occurred among the patient with eclamptic condition. However, due to limited number of facilities-based service provision, availability, and affordability of patients a limited and/or no studies were conducted investigating fetal and maternal outcome of eclampsia in Bangladesh. Considering the scant amount of evidence we carried out this study in an attempt to assess perinatal outcome relating to clinical types and management of eclampsia. We believe this study will provide give new evidence that will help to policy planers, to formulate strategies to improve perinatal outcome in eclampsia and will create some interest for further research.

2. Materials and methods
In this study we used a comparative cross-sectional study design, conducted in Dhaka Medical College Hospital (DMCH) in Bangladesh during the period from July 2010 to December 2010 in the biggest tertiary referral hospital with 1400 beds. We included Eclampsia patients admitted in eclampsia unit of the hospital with compared controls group south care in the department of Gynecology &Obstetric of the same hospital. Ninety seven patients who were diagnosed in Gynaecology & Obstetric department of DMCH in 6 months period from July to December of the year of 2010 as eclampsia. For comparison 114 patients were taken as controls. Eclampsia patient admitted during

the study period constitute the sample. After admission, diagnosis was made mostly on the basis of history and clinical presentation with minimum aids. We used Face to Face interview, examination findings & investigation reports, Semi Structured Questionnaire & check lists. Through proper administrative procedure by the researcher took the verbal consent of the patient to interview and examine her. Findings were recorded after data collection, data were checked for consistency and necessary corrections were made of needed. Data were analyzed by using computer software SPSS. According to the exclusion criteria the patients who were discharged within 48 hours of delivery and cases other than clinically confirmed eclampsia were excluded from this study.

3. Results

The participant's background, and henceforth were displayed in the statistical analysis. In Table I we have shown the age distribution between the two groups. From total study population 97 of participants were included in case group; while 114 participants were fell into the control group. In the cases, majority of the participants (72.2%) belonged to age of 20 -30 years; while, the corresponding figure was 78.9% in the control group. The lowest proportion (6.2%) of participant among the case were between the ages of above 30 years old which was 7% in control group. The mean age of the cases and controls were 22.4 ± 4.5 and 24.0 ± 4.9 years respectively. The lowest and highest ages of cases and controls ranged from 17– 38 and 17– 42 years respectively. Figure I showed the highest proportion of patient (81.4%) among the case had nulipara, while the figure was 47.4% among the control group. The prevalence of primipara was 8.2% among the case; while the corresponding figure among the control was 28.1%. Among the case 10.3% patient was identified as nulipara, while it was recorded as 24.6% among control. Figure II showed the prevalence of primigravida was 75.3% and 44.7% among the case and control groups respectively. The patient with multigravida was recorded as 24.7% among case group, while; the figure was recorded as 55.3% among control group. The mode of delivery (Figure III) between groups showed that the prevalence of vaginal delivery was recorded as 57.7% among the case, while the corresponding figure was 50% among the control group. Only 2.1% delivery was conducted through using vacuum technique among the case while the corresponding figure was 2.6% among the control group. The rates of caesarean section were 40.2% and 47.4% among case and control groups successively. Figure IV showed the birth weight of neonate. The prevalence of neonate with normal with was 39.1% among case group with the corresponding figure of 67.3% in control group. In both group the extreme low birth weight was lowest—11.6% in case group and 2.8% among control group. The low birth weights (LBW) were 26.1% among case and 20.6% among control group. The prevalence of neonates with very low birth weight was 32.2% and 9.3% among case and control group respectively. Distribution of perinatal conditions among live birth was shown in the Figure V.

Table I: Background characteristics of the study participants. (n=211)

Age in Years	Group	
	Case (n=97)%	Control (n=114)%
<20	21 (21.6)	16(14.0)
20-30	70(72.2)	90(78.9)
>30	6(6.2)	8(7.0)
Mean ± SD	22.4 ± 4.5	24.0 ±4.9
Range	17-38	17-42

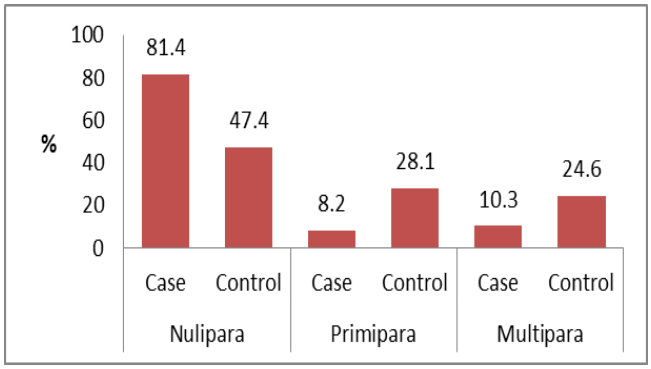

Fig I: Distribution of parity between groups (n=211)

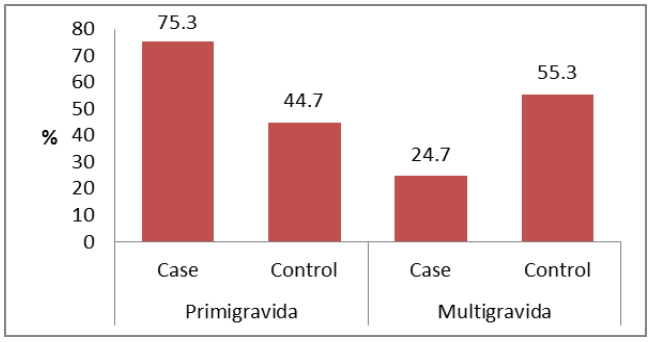

Fig 2: Distribution of gravidity between groups (n=211)

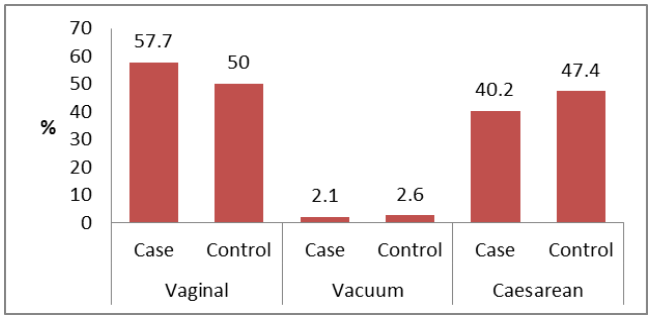

Fig 3: Mode of delivery between groups (n=211)

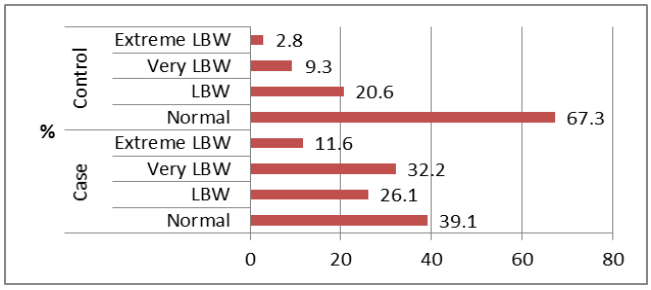

Fig 3: Comparison of birth weight between groups (n=211)

Table 2: Outcome of pregnancies among the study participants (n=211)

Parameters	Case (n=97)		Control (n=114)	
	N	%	n	%
Live birth	67	69.07	101	88.59
Survived	50	51.54	76	66.66
Early neonatal death (END)	5	5.15	7	6.14
Stillbirth(SB)+ Fresh SB	10	10.3	15	13.15
Macerated	2	2.06	3	2.63

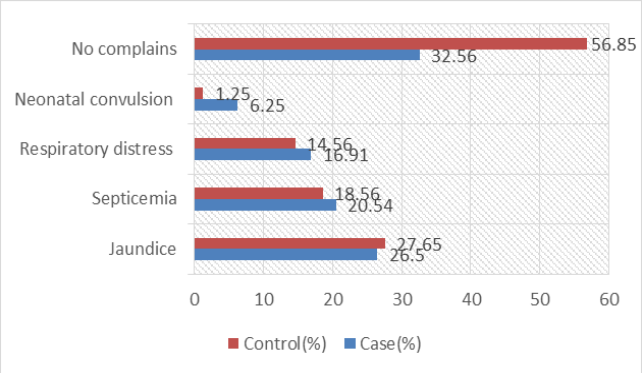

Fig 5: Distribution of perinatal conditions among live birth (n=182)

4. Discussion

The hypertensive disorders during pregnancy are important causes of maternal death throughout the world and most of these deaths are attributed to eclampsia. The hypertensive disorders also contribute extensively to still birth and neonatal morbidity and death. Hypertensive expectant mothers (or gravidas) are predisposed to the development of potentially lethal complications of pregnancy notably abruptio placentae, disseminated intravascular coagulation cerebral haemorrhage hepatic failure and acute renal failure. In my study the majority of patients belongs to age group of 20 – 30 years. Study shows that eclampsia was found to be particularly common in adolescent and young pregnant women, 21% in comparison to 16% in control of same age distribution. It was found from table-1 that the control were on average 1.59 years older than the cases and this difference of age was statistically significant (P=0.016). Several studies were done to see the risk factors of perinatal outcome of eclampsia. The finding is consistent with study done by chowdhury P (a) [7] As the adolescent pregnancy constitutes a large number of hospital admission in Obstetric unit of DMCH and it may explain the higher number of cases of eclampsia in this age group. Regarding parity, study shows eclampsia was significantly associated in primigravida (75.3%) compared to controls, where 44.7% were primigravida and this finding was consistent with finding of Acharya G *et al*. (71.42%)b this may explain the immunological causes for preeclampsia eclampsia. The cause of discrepancy may be differences in antenatal care hospital admission, patient's socioeconomic and environmental factor that need further evaluation. Approximately 60% of the cases had normal vaginal delivery followed by 40% with caesarian delivery and 2.1% vacuum extraction in comparison to half of the controls experienced normal vaginal delivery. Vaginal delivery rate in DMCH is much higher than that found in chowdhury P(a)[7] this indicates our conservative approach in management of eclamptic patients and it is inherent in DMCH management. If fits are well controlled and patient is stabilized clinician can await spontaneous vaginal delivery after inducing labour. Study shows 60.9% a babies were born with low birth weight and mean birth weight 2210.87 gm, SD 622.54 gm. This finding correlates with that of incidence of preterm birth in eclamptic patients. On the other hands, mean birth weight of babies of eclamptic patient were less than that of control group (2669.35 gm). This may explain placental insufficiency in mother with eclampsia. According to table-VI perinatal outcome shows that 71% of the babies in case group was born alive, while 92% in control group were born alive. Total still birth in eclamptic patient were 28.8% in comparison to only 9% still birth in control group with early neonatal death were also higher 23.7% than control (4.4%) similarly perinatal asphyxia rate was significantly higher among cases (75.4% vs 25.7%) NICU admission were 49.3% in cases compared to 8.6% a in control group. In this study perinatal death was 52.5% which is much higher than found in study done by chowdhury P (a) [7] where the rate was 20% Patna hospital 31.25% (b), 38.6% (e). 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. The incidence in developed countries is much lower due to provision of antenatal care to all pregnant women and better access to health care facilities [8, 9, 10]. This may reflect lack of public awareness, lack of antenatal checkup neglected position of female in the family poor decision making ability of female, poor communication system and demerits of conservative approach in patient management. Causes of early neonatal death may be due to high rate of eclampsia in preterm pregnancy causing high preterm delivery and high perinatal loss. Other causes may be influenced by the availability and skills of neonatal care facilities.

5. Conclusion

Incidence of eclampsia is alarming in economically deprived population. The maternal and perinatal mortality and morbidity associated with eclampsia is many fold. We should not forget the cost of treatment of such patients and burden on the staff and the hospital. It is therefore important that we should adopt the global initiative provided by the Safe Motherhood Concepts. The community should be educated regarding importance of antenatal care, especially during last trimester immediate referral to a tertiary center is necessary in all patients with morbid symptoms of pregnancy induced hypertension (P.I.H). Vigilant antenatal, intra-natal and postnatal management of all such patients will improve the maternal and perinatal outcome related to eclampsia. This was a single centered study with a small size of samples. So the result of this study may not reflect the exact scenario of the whole country.

6. References

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