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Perinatal Outcome of Eclampsia in Dhaka Medical College Hospital

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Abstract

Objectives: *The study was done with the objective to find the perinatal outcome in eclampsia patients and also to find out preventable causes of perinatal mortality and morbidity which are related to eclampsia.*

Materials & methods: *This was a cross sectional observational study carried out in the Eclampsia unit in the Department of Obstetrics and Gynaecology in Dhaka Medical College Hospital during the period from February 2001 to July 2001.*

Results*: Three hundred patients were selected for study. Three hundred mother's delivered 311 babies (11 sets of twins). Perinatal death(PND) which included stillbirth (SB) and early neonatal death (END) was 29%; stillbirth rate was 158/1000 live birth and early neonatal death rate was 132/1000 live births; 71% babies were born healthy. Maternal and fetal conditions were assessed and its relation with perinatal outcome was analyzed. Convulsion delivery interval > 12 hours, diastolic BP > 110mm Hg and Proteinuria > 3+ had significant higher perinatal death. (P<0.001, <0.01 and <0.001, respectively). Seventy percent babies had low birth weight. Among the live born neonates (n=262) 27.5% had jaundice, 34.7% had no complication and 15.6% had early neonatal death. Pre-maturity was common cause of early perinatal death (54%) and 39% death was due to asphyxia.*

Conclusion*: Still birth, prematurity and birth asphyxia are important causes of perinatal loss in eclampsia, so early referral of eclampsia patients, early resuscitative measures and good neonatal care can improve perinatal outcome.*

Introduction

Eclampsia is a multisystem disorder that involves vital organs and failure of these may lead to deterioration of maternal condition and hypoxia and acidosis of fetus resulting in high maternal and perinatal mortality and morbidity. Though globally the incidence has been reduced to 0.2-0.5 percent of all deliveries[1], in Bangladesh the incidence is 5 percent of total pregnancies.[2] In Bangladesh, eclampsia is one of the five major causes of maternal mortality. Perinatal mortality rates serves as the most sensitive index of maternal and neonatal care [3]. Eclampsia is a major cause of stillbirth and neonatal death. Intrauterine growth retardation (IUGR), lowbirthweight (LBW), prematurity and neonatal asphyxia are the other consequences. Though a number of patients delivered a healthy baby with good outcome, perinatal mortality is high to the extent of 30-50 percent in eclampsia[4].

Dhaka Medical College Hospital (DMCH) is the biggest tertiary referral hospital having 1400 beds. There is a separate eclampsia unit with 10 beds. These beds are always overloaded and patients of all socio-economic classes admitted here. There is a neonatal ward that is also over burdened and cannot receive all admissible babies. Due to limited availability and affordability sophisticated investigations usually used to assess the fetal and maternal condition was not possible. In this study attempt has been made to asses perinatal outcome of eclamptic patients.

Materials and methods

This prospective cross sectional observational study was carried out in the Eclampsia Unit in Department of Obstetrics and Gynaecology in Dhaka Medical College Hospital. Three hundred eclampsia patients who were admitted in the Eclampsia unit of DMCH and who stayed more than 48 hours after delivery,

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during the period from 1st February 2001 to 31st July 2001 were included in the study. Using pre-designed questionnaire informations were recorded. Relevant informations were collected from antenatal records, interviewing patient's attendants , observation and follow up during hospital stay. Convulsion was controlled by injection magnesium-sulphate unless contraindicated and hypertension controlled by injection hydralazine and other antihypertensives when required. Vaginal delivery was aimed but patients whose labour failed to progress or fetal distress developed, were delivered by caesarian section. Neonatal status of babies of eclamptic mother within 7 days of delivery were included in the study. Data were compiled and appropriate statistical analysis was carried out. Level of significance was considered when P value was <0.05.

Results

Perinatal outcome of 300 eclampsia patients were analyzed. Three hundred pregnancies resulted in 311births (11 set of twins). For the purpose of study intrauterine death and stillbirth were recorded as stillbirth cases. There were 42 (13.5%) fresh stillbirths (SB), 7 (2.3%) macerated intrauterine deaths (IUD). Stillbirth (fresh still birth and IUD) was 15.8%, i, e.158 per thousand live births and early neonatal death (END) was 41(13.2%), i, e.132 per 1000 live births; so perinatal mortality (SB+END) was found 290/1000 live births, 71.1% babies were discharged healthy.

Table- II shows that most of the patients (75%) were below 25 years of age (range 15-25 years); 61.30 percent patients were primiparous and PND was 34.23 percent. In that group 29% patients had no Antenatal care (ANC) and only 17.7 percent had regular antenatal check-up. Perinatal death was higher amongst those who had no or irregular ANC. 4.3 percent patients were of gestational age <28 weeks and perinatal death was higher (76.92%) among them. Only 40.7 percent of patients had gestational age ≥37 weeks and perinatal death was 16.39 percent and survival rates were 83.61 percent among them.

This table shows statistical analysis of the factors influencing the perinatal outcome, degree of convulsion

Table-I

Outcome of pregnancies

Parameters	Number of patients	Percentage
Perinatal outcome (n=311)		
Live birth	262	84.2
Survived	221	71.1
Early neonatal death (END)	41	13.2
Stillbirth (SB)	49	15.8
Macerated	7	14.55 85.44
Fresh SB	42	
Perinatal death (END + SB)	90	29

Table-II

Relation of maternal factors with perinatal mortality

Parameters	Total birth (n=300) No.	Total birth (%)	Perinatal death No	Perinatal death (%)
Age (years)				
15-25	225	75%	62	27.55
26-31	75	25%	26	34.66
Parity				
0	184	61.30	63	34.23
1-2	115	38.2	24	20.86
≥3	23	7.60	1	4.34
Antenatal care	None	87	29.00	28 32.18
Irregular	160	53.30	48	30.00
Regular	53	17.70	12	22.60
Duration of gestation (weeks)				
<28	13	4.30	10	76.92
29-36	165	55.00	58	35.15
≥37	122	40.70	20	16.39

Table-III

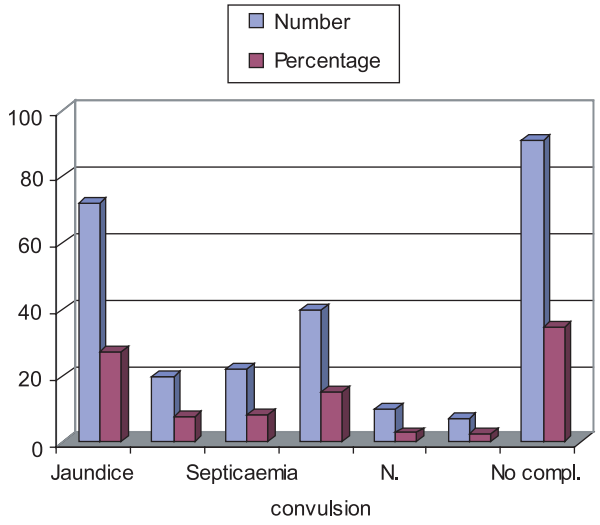
Factors influencing perinatal outcome.

Variables	Total birth No	Perinatal Death No	(%)	P value
Fit and delivery interval (Hours)d"12 >12	14883	3644	(24.32)(53.01)	0.001***
Proteinuria0, +, and ++>++	155145	2662	(16.67)(42.76)	0.001***
Diastolic blood BP(mmHg) d"110 >110	200100	4642	(23.00)(42.00)	0.003**
Uric Acid (mg%)[3] 6<6	180120	6028	(33.33)(23.33)	0.071[NS]
Babies Weight (Kg)<2.5[3] 2.5	21893	6327	(28.89)(29.03)	1.000[NS]

[a]Fisher's exact test
[NS]Not significant
**Significant at P < 0.01
*** Significant at P < 0.001

and delivery interval, level of proteinuria, diastolic blood pressure, and level of blood uric acid and birth weight of babies. Analysis showed that convulsion and delivery interval, degree of proteinuria and diastolic blood pressure had significant relationship with perinatal mortality. Uric acid level was higher in perinatal death(PND) group but this was not statistically significant. Relationship between birth weight and PND was not significant.

This diagram shows that 91 (34.7%) babies out of 262 live birth had no complication and 27.5 percent developed neonatal jaundice, 15.2 percent had respiratory distress and 3.8 percent suffered from neonatal convulsion and 91 (34.7%) had no complications.



Perinatal morbidity (n=262)

Discussion

During the six months study period, there were 5270 obstetric admissions of which, the number of eclampsia was 410 and prevalence of eclampsia was 12.85 percent among hospital admitted cases. Out of these 410 cases, 300 who fulfilled the inclusion criteria were included in this study.

Perinatal death was very high compared to Baha's[6] study (11.8%). But in Bangladesh in several studies perinatal death were 32.1 percent[7], 28 percent[8] and 26.8 percent[9].

In a review of four different studies presented at the First International Conference of Obstetrics and Gynaecology held in Bangladesh, perinatal mortality in eclampsia varied from 31 to 41 percent[10], and it appeared very high in comparison to general perinatal mortality rate in Bangladesh which at present is 70 per thousand livebirths[11]. In developed country, perinatal mortality in pre-eclampsia varied from 35 to 160/1000[5]. All of the cases were unregistered and 29 percent of them had no antenatal care (ANC); 53.3 percent had irregular ANC or were attending the hospital for the first time after being referred. Most of them came from low socioeconomic background.

In this study, 61.3 percent mothers were primipara. Previous studies also showed higher prevalence of primipara, 58 percent[12] and 71 percent[13] in two other studies, Primipara contributed to 71.59 percent of total PND. Thirty nine (13%) patients had no proteinuria, 97 % babies discharged healthy and among this group, 48 % patients had proteinuria > 2+ and PND was about 33 %. Stillbirth was high among > 2+ proteinuria group. The difference was statistically significant (P < 0.001). But in other studies patient with massive proteinuria delivered significantly earlier than patient with mild proteinuria and infants had significantly lower birth weight[14]. Neonatal morbidity appears to be a function of prematurity rather than of

massive proteinuria itself[14]. Two hundred (66.7%) patients had diastolic blood pressure <110 mmHg, and PND in this group was 23 percent. Thirty-three percent patients had diastolic blood pressure >110 mmHg, and PND was 42 percent, which is statistically significant (P<0.01).

In the present study 148 patients had delivery <12 hours after convulsion and PND was 36 (24.3%). Eighty-three patients had convulsion delivery interval of > 12 hours, among which PND was 54 percent, which was statistically significant (P < 0.001). In the present study, incidence of PND was not significantly high in patients with high serum uric acid levels (> 6 mg/dl), which correlates with the findings of another study[15]. But in a study by Gopalan, patients with > 6 mg% serum uric acid had a higher incidence of stillbirth[16].

Among the babies who were alive at birth (n=262), 34.7 percent had no neonatal complications and 27.5 percent had jaundice. This high incidence was due to large number of premature babies. About nine percent babies had septicaemia. In a study, neonatal respiratory distress syndrome was 48 percent among preterm babies. Prematurity also contributes to respiratory distress syndrome and jaundice[14].

In DMCH as we did not had prompt biochemical, bacteriological or cardiotocographic facilities, so the exact cause of asphyxia, infection septicaemia, intraventricular haemorrhage, necrotizing enterocolitis could not be identified in most cases and diagnosis of END was clinical. In some cases, more than one cause was identified as the cause of death. Studies carried abroad showed prematurity and sepsis as major causes of neonatal death in eclamptic mothers[14]. In a study carried out in Bangladesh, asphyxia was a major cause of neonatal death with or without prematurity[7].

Conclusion

Eclampsia is mostly preventable by early diagnosis and management of pre-eclampsia and hypertensive disease. As stillbirth, prematurity and birth asphyxia are most important causes of perinatal loss, so in eclampsia early referral of eclampsia patients, better obstetric management, early resuscitative measure and good neonatal care facilities can improve the perinatal outcome. Eclampsia is still major causes of perinatal loss in our country. Team management by obstetricians, neonatologists, pediatrician and anaesthesiologists in management of eclampsia will reduce the maternal as well as foetal loss in our facility.

References:

1. Decherney AH, Pernoll ML. Current obstetric and gynaecologic diagnosis and treatment. 8th ed. Appleton and Lange, 1994; 184-5.
2. Khatun S, Nilufar S, Bhuiyan AB, Begum K. Perinatal outcome in eclampsia. Bangladesh J Obstet Gynaecol 1994; 9: 53-60.
3. Rao KB. Perinatal mortality. In: Ratnam SS, Rao KB, Kumaran SA. Obsterics and gyanaecology for postgraduates. Vol. 2, 1st ed. Chennai: Orient Longman Ltd., 1997; 20: 252-9.
4. Datta DC. Textbook of obstetric including perinatilogy and contraception. 4th ed. Calcutta. 1998; 51, 51, 236-9, 648-9.
5. Robson SC. Hypertensiona and renal disease in pregnancy. In: Edmonds DK, editor. Dewhurst's text book of obstetric and gynaecology for postgraduates. 6th ed. London: Blackwell Science Lt., 1999: 166-77.
6. Sibai BM. Maternal perinatal outcome in 254 consecutive cases. Am J Obstet Gynecol 1990; 163: 1049-54.
7. Shahabuddin AKM, Hasnat M, Hamid T, Rahman AKMF Perinatal outcome in eclampsia. Bangladesh J Child Health 1996; 20: 8-14
8. Shamsuddin L, Rouf S, Khatoon H. Perinatal outcome in eclampsia. Bangladesh J Obstet gynaecol 1995; 10: 65-72.
9. Lope M, Lera L. Complicated eclampsia: fifteen years experience in a referral medical center. Am J obstet Gynecol 1982; 192: 25-8.
10. Begum F, Begum R, Khatoon S. Management and outcome of eclampsia: a comperative study, In: Proceeding of First International Conference on Obstetrics and Gynaecology (OGSB), 11-14 December, 1992.
11. Newborn health in Bangladesh. A situation analysis. Survey Newborn Life (SNL), SCF (USA), 2001.
12. Akhter M. Study of hypertensive disorder of pregnancy in Mitford Hospital [dissertation].

Dhaka: Bangladesh College of Physicians and Surgeons, 1994.

13. Begum A. A study of eclampsia in Dhaka Medical College Hospital for a period of six months (July to December, 1998). J Dhaka Med. Coll. 2000; 9: 71-4.

14. Newman MG, Robichaux AG, Stedman CM, Jaekle RK, Fontenot MT, Dotson T and Lewis DF, Perinatal outcomes in preeclampsia that is complicated by massive proteinuria. Am J Obstet Gynecol 2003; 188:264-8).

15. Aziz S. Uric acid and foetal outcome in pregnancy induced hypertension [dissertation] Dhaka: Bangladesh College of Physicians and surgeons, 2000.

16. Gopalan S. Hyperuricaemia and pregnancy induced hypertension: reappraisal. Indian J Med Sci 1996; 50.

17. Shansunnahar, Hasan KA, Chowdhury TA. Clinical significance of thrombocytopenia in eclampsia. Bangladesh Med. J 1998; 45-7.