Original Article

Epidemiology of Eclampsia in Bangladesh

Fatema Begum[1], Arshad Jahan[2], Sheuly Akter[3],

Farhana Dewan[4], Sinthia Tabassum[5].

Abstract

Background: *The purpose of these study was to find out the risk of eclampsia in relation to several demographic and anthropometric factor and to find out a way to prevent eclampsia.* ***Objective:*** *To find out the epidemiology of eclampsia and to reduce maternal and neonatal mortality and morbidity due to eclampsia.* ***Materials and Methods:*** *A cross sectional descriptive study was conducted to assess the fetomaternal outcome of eclampsia. The study was carried out at the Eclampsia unit, Dhaka Medical College Hospital, Dhaka over a period of six months from 1st July 2008 to 31st December 2008. A total of 48 patients with diagnosis of antepartum and intrapartum eclampsia were consecutively taken in the study. The test statistics used to analyse the data were descriptive statistics.* ***Results:*** *About 39.6% of the patients was under the age of 20 years, 43. 7% patient was between the age of 20-25 years. By occupation 77.1% patient was housewife, 17.9% patient was Garments worker and 4.1% patient was day labour. By level of education about 56.3% patient was illiterate, 29.2% patient was of primary level. About 57% of patients remained unconscious. About 7% of patients developed acute renal failure,16.7% CVA,14.6% HELLP syndrome and 39.6% pulmonary oedema. The mean hospital stay was 9.5 ± 3.3 days. Majority (93.8%) of the patients recovered while 6.3% died.* ***Conclusion:*** *Eclampsia is still a major cause of maternal mortality and morbidity in Bangladesh. A qualitative and quantitative improvement in prenatal consultation should make it possible to reduce incidence of eclampsia in our community. Monitoring of high-risk patients may reduce the complication rate.*

Introduction

Eclampsia is defined as seizure activity or coma unrelated to other cerebral condition in an obstetrical patients with preeclampsia.[1] Eclampsia is a potentially fatal disorder of pregnant woman that has been prevalent since the time of Hippocrates. It remains an important cause of maternal mortality throughout the world, accounting for about 50,000 death worldwide.[2] In developing countries the prevalence of eclampsia varies widely, from 1 in 100 to 1 in 1700.[3-6]

The incidence of eclampsia is high in Bangladesh-7.9% according to results of house to house survey.[7] For the period of 1998 to 2000 the rate of maternal death from eclampsia was 8.6%.[8] In Bangladesh, only 2.3% women end their pregnancy under medical supervision(whether it be abortion or delivery), the rest have no obstetric care.[9] As a result most preeclampsia cases remains unrecognized until severe complication, such as eclampsia. Because Dhaka Medical College and Hospital has a special unit and is the largest tertiary referral Govt. hospital in the country, the incidence of eclampsia is higher in this hospital setting at 9%.[10] Eclampsia is associated with increased perinatal mortality and morbidity.The different studies in Bangladesh showed perinatal death due to eclampsia was 28%,32.8%,29% respectively.[11-13]

1. Associate Professor (CC) and HOD, Department of Obstetrics and Gynaecology, KhwajaYunusAli Medical College and Hospital. Enayetpur, Sirajganj, Bangladesh.
2. Assistant Professor, Department of Obstetrics and Gynaecology, Gonoshasthaya SamajVittik Medical College, Dhaka, Bangladesh.
3. Assistant Professor, Department of Obstetrics and Gynaecology, Khwaja Yunus Ali Medical College and Hospital, Enayetpur , Sirajgonj, Bangladesh.
4. Professor and Ex-Head of Department of Obstetrics and Gynaecology, Shaheed Suhrawardy Medical College and Hospital, Dhaka, Bangladesh.
5. Intern Doctor, Khwaja Yunus Ali Medical College and Hospital, Enayetpur, Sirajganj, Bangladesh.

Correspondence: Dr. Fatema Begum, Associate Professor (CC) and HOD, Department of Obstetrics and Gynaecology, Khwaja Yunus Ali Medical College and Hospital, Enayetpur, Sirajganj, Bangladesh. Mobile: 0173452131, E-mail: drfatema.parul@gmail.com

It is a common problem in developing countries because illiteracy, lack of health awareness,poverty superstitious belief prevent women from seeking medical advice during pregnancy. Besides poor communication facilities is also an important factor.In Bangladesh about 80% population live in rural areas,where facilities do not exist to deal with patients with eclampsia, many of these patients come to referral hospital from distant place. Among the referral hospitals, DMCH is dealing with highest number of eclampsia patients.

Eclampsia is the second major cause of maternal death in Bangladesh (16%), preceded by HGE.[14] In developing country death from HGE and infection have been almost disappeared and eclampsia become the prime killer,indicating that death from eclampsia is particularly difficult to prevent.[15]

Maternal complication like pulmonary oedema,intracranial haemorrhage, DIC, aspiration pneumonitis, acute renal failure etc. are serious factor causing maternal mortality and morbidity.[16-18] The most common cause of fetal death is prematurity and birth asphyxia.[19]

The purpose of this study was to report the frequency of this lethal pregnancy associated disorder in terms of age, parity , occupation, residence, socioeconomic status,level of education antenatal care. Also to highlight the lapse of our setup which can be overcome to improve outcome and reduce its incidence.

Materials and Methods

The study was a cross sectional descriptive study conducted in Eclampsia unit of Dhaka Medical College and Hospital (DMCH) over a period of 6 months from 1st July 2008 to 31st December 2008. Total 48 patients were included in the study. Inclusion criteria was patients with diagnosis of antepartum eclampsia and intrapartum eclampsia. Exclusion criteria were all cases other than clinically confirmed eclampsia, postpartum eclampsia& preeclampsia. A consecutive sampling was done to include required number of patients. The demographic, anthropometric, obstetric and clinical variable were included in the study.

Prior permission were taken from Ethical review committee, DMCH to conduct the study. Keeping compliance with Helsinki Declaration for medical research involving Human subjects 1964, the study subjects were informed verbally about the study design, the purpose of the study and their right from with drawing them selves from the project at any time, for any reason, what so ever.

A structured data collection form was developed containing all the variables of interest which was finalized following pretesting. Data were collected by interview.

Data were processed and analyzed using SPSS (Statistical Package for Social Sciences). The test statistics used to analyze the data were descriptive statistics. The summarized data were presented in the form of tables and charts.
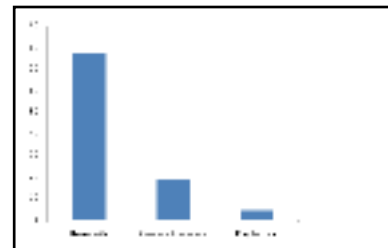
Results

Table I : Distribution of patient by age (n=48)

Age (years)	Frequency	Percentage
<20	19	39.6
20-25	21	43.8
e"25	08	16.7

*Mean age=(20.6±4.4)years; range=(15-32) years

39.6% was below 20 year of age, 43.8% between 20-25 years and the remaining 16.7% of patient was 25 year or above. The mean age of patient was 20.6 =4.4 years & the lowest & highest ages were 15 and 32 years respectively (Table-I)
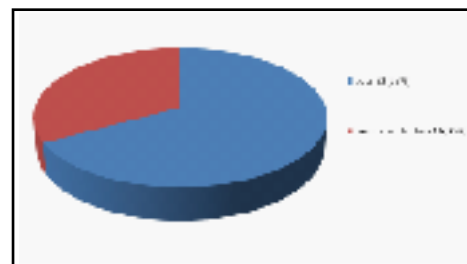

Figure 1: Distribution of patients by occupation (n=48)

Over three quarter (77.1%) of patient was housewife, 18.8% garments worker and rest 4.1% day labour (Figure 1)

Table II: Distribution of patients by residence (n=48)

Residence	Frequency	Percentage
Urban	09	18.8
Suburban	15	31.3
Rural	20	41.6
Slum	04	8.3

Nearly 20% of patients was urban resident, 31.3% suburban, 41.6% rural and 8.3% slum (Table II)

Figure 2: Distribution of patients by socioeconomic status (n=48)

Two-third (67%) of the patients was poor and rest 33% belonged to lower middle class (Figure 2)

Table III: Distribution of patients by level of education (n=48)

Level of Education	Frequency	Percentage
Illiterate	27	56.3
Primary	14	29.2
Secondary	07	14.6

Twenty seven (56.3%) of 48 patients were illiterate. About 30% was primary level and 14.6% secondary level educated (Table III)
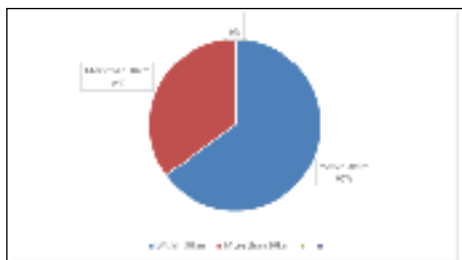
Figure 3: Distribution of patients by distance of residence from DMCH.

Nearly two-third (65%) had distance 30 kilometers or less and the remaining 35% more than 30 kilometers from DMCH (Figure 3)

Discussion

The results of the current study demonstrated that the mean age of the patients was 20.6±4.4 years, and the minimum and maximum ages were 15 and 32 years respectively. Onuh reported that the mean age of the study subjects were 27.1±5.6 years. Low also demonstrated the patients' ages to range from 16 to 45 years.

In the present study, over three-quarters(77.1%) of patients were housewives, 18% were garments workers and the remaining 4.1% were day labourer. Nearly 20% of the patients were urban residents, 31.1% were suburban, 41.6% were rural and 8.3% were slum dwellers. Two-thirds(67%) of the patients were poor, and the remaining 33% belonged to the lower-middle class. Twenty-seven(56.3%) out of the 48 patients were illiterate. About 30% of the patients were educated up to primary level, and 14.6% were up to secondary level. Dare[10] in a similar study reported that majority of the patients (86.7%) were from the low socio-economic class or of low educational status keeping consistency with findings of the present study.

Antepartumeclampsia accounted for majority (85%) of patients and intrapartumeclampsia for 15%.

Lopezconducted a similar study and reported that 97.4% of the patients with antepartum eclampsia. Ikechebelualso noted intrapartumeclampsia in majority (82.4%) of the cases.[20,21]

The mean gestational age was 34.6±2.4 weeks, and the minimum and maximum ages were 28 and 40 weeks respectively. Majority (83.3%) of the patients were primipara and 16.7% were multiparas. About 5% of patients received infrequent and 10.4% regular antenatal care during pregnancy. Begum reported that the mean gestational age (±SD)was 30.65±2.38 weeks, and the range was 24-34 weeks which is almost consistent with our study. Chen observed that 27% of the patients received regular ANC during pregnancy.[22]

Conclusion

Eclampsia is still a major cause of maternal and fetal mortality and morbidity in Banglades. It can be prevented by proper antenatal care, availability of health care facilities and prompt referral to tertiary care hospital. Improving socio-economic condition and literacy will raise awareness among the pregnant women to take proper care during antenatal period which will go a long way in preventing the development of eclampsia. Raising awareness will also motivate the patient's relatives and attendance to take their patients to nearby hospitals for receiving emergency obstetric care as soon as convulsion arises.

Besides these steps, monitoring of high-risk patients will reduce the maternal and neonatal mortality, and morbidity.

Acknowledgement

References

1. Fugate SR, Crow GE.Eclampsia, 2005 available at http// www.emedicine.com/med/topic633.

2. DuleyL.Maternal mortality associated with hypertension disorder of pg in Africa,Asia,Latin America and the Caribbean.Dr. J. ObstetGynaecol 1992;99:547-553.

3. Onuh S.O. and Aisien A.O. Maternal and Fetal outcome in Eclamptic patients in Benin City,Nigeria. JObstet and Gynaecology 2004; 24(7):765-768.

4. World Health Organization. International collaborative study of Hypertensive disorders of pregnancy.Geographic variation in the incidence of hypertension in pregnancy. Am J Obstet Gynaecol 1988;158:80-83.

5. Low JJH, Yeo GSH.Eclampsia-Are we doing enough? Singapore Med J 1995;36:505-509.

6. Bergstrom S, Povey G, Songane F & Ching C. Seasonal incidence of Eclampsia an its relationship to materiological data in Mozambique. J Perinat Med 1992;20:1953-1958.

7. BIRPERHT Bangladesh institute for promotion of essential and reproductive health & technology proceeding of dissemination workshop on maternal morbidity study.Hotel Sheraton, Dhaka 1994.

8. Begum MR, Begum A, Quadir E,Akhter S & Latifa Samsuddin.Medscape General medicine 2004;52.

9. Yasmin HA, rahman MH & Chowdhury FK.Baseline Survey for assessment of emergency obstetric care service in Bangladesh.Bangladesh institute of Research for promotion of of Essential & Reproductive Health & Technologies (BIRPERHT),March 1995;10.

10. Dare FO, EniolaOA,Bariweni AC, 1998. Eclampsia revisited. Nig.J. Med.7:168-171.

11. Samsuddin L,Rouf S &KhatoonH.Perinatal outcome in Eclampsia.Bangladesh J obstetgynaecol 1995;1065-1072.

12. Shahabuddin AKM, HasnatM, Hamid T & Rahman AKMF. Perinatal outcome in eclampsia. Bangladesh Journal of Child Health. 1996;20:8-14.

13. IrinPerveen, Alam.A study of perinatal outcome in Eclampsia in DMCH(Dissertation) Bangladesh College of Physicians & Surgeons in 2002.

14. FauveauV,KNij KA,Chakrabarty J & Chowdhury AL.Causes of maternal mortality in rural Bangladesh.Bull WHO 1988;66:643-651.

15. Redman C.Eclampsia still kills.Br Med J 1988;296:1290-1310.

16. Villar MA &Sibai BM.Eclampsia ,ObstetGynaecol North AM 1988;15:355.

17. Sibai BM,Cubbis JH &AndersonGD.Wclampsia observation from 67 recent cases.ObstetGynaecol 1981;58:609.

18. Davies AM. Epidemiology of Hypertensive Disorder of Pregnancy. Bull WHO 1979;57(3):373.

19. Prathranchinayan MD. Management & outcome of Eclampsia of Rajavithi Hospital. Journal MED Assoc THAI 1998;81:579-584.

20. Lopez-Llera M.Main clinical types & sub-types of eclampsia. Am J Obstet&Gynaecol 1992;166:4-9.

21. Ikechebelu JI, OkoliCC.Review of eclampsia at the NnamdiAzikiwe University Teaching Hospital,Nnewi. Journal of Obstetrics and Gynaecology.2002; 22:287-380.

22. Chen CY,Kwek,Tan KH & Yeo GSH.Our experience with Eclampsia in Singapore.Singapore Med J 2003; 44(2):88-93.