Journal of Medicine and Medical Sciences Vol. 4(10) pp. 394-398, October 2013
DOI: http:/dx.doi.org/10.14303/jmms.2013.084
Available online http://www.interesjournals.org/JMMS
Copyright © 2013 International Research Journals

Full Length Research Paper

Maternal mortality associated with eclampsia in an indian medical college: a four year retrospective study

Dr. Malay Sarkar, MD[1], Dr. Sanjay Basak, MD[2], Dr. Sajal Kr Mondal, MD[3], Dr. Sandhya Das, MD[4], Dr. Dibyendu Roy MS[5], Dr. Jaydeb Mandal, MS[6], Dr. Suresh Ch Mondal, MD[7], Dr. Sankar Kumar Das, MD*[8]

1Associate Professor, Dept. of G and O, Malda Medical College and Hospital, Malda
[2]RMO cum Clinical Tutor, Dept. of G and O, Malda Medical College and Hospital, Malda
[3]Assistant Professor, Dept. of G and O, Calcutta National Medical College and Hospital
[4]Assistant Professor, Dept. of G and O, Calcutta National Medical College and Hospital
[5]RMO cum Clinical Tutor, Dept. of G and O, Malda Medical College and Hospital, Malda
[6]RMO cum Clinical Tutor, Dept. of G and O, Malda Medical College and Hospital, Malda
[7]RMO cum Clinical Tutor, Dept. of G and O, Malda Medical College and Hospital, Malda
[*8]Associate Professor, Dept. of Paediatrics, Burdwan Medical College, Burdwan

*Corresponding author Email: sankr_das@yahoo.com

ABSTRACT

The study was carried out to determine the incidence of maternal mortality associated with eclampsia, to assess the mode of death in eclampsia and to determine the socio demographic profile of women influencing the maternal death. It is a retrospective study of 44 eclampsia related death and this study was conducted in Midnapur Medical College for period of 4 years from 1st January 2007 through 31st December 2010. Total death during that period was 97. Records of death and their demographic profile were retrieved from the medical records library of the Midnapur Medical College. Eclamapsia accounted for 45.36 % of total maternal death (total death 97) recorded within 4 year period with case fatality rate 4.96%. Commonest mode of death in eclampsia is pulmonary oedema. Eclampsia death commonly occurs in younger age group 18-22 years and in primi gravida and in unbooked lower socio economic status. Antepartum eclampsia contributes most of the eclmaptic death. Eclampsia still remains the major cause of maternal mortality in India due to unsupervised pregnancies and deliveries. There is need to educate and encourage the general public for antenatal care and hospital delivery by which this powerful enemy could be defeated.

Keywords: Eclampsia, maternal mortality, case fatality, India.

INTRODUCTION

Eclampsia is a serious complication of hypertensive disorder in pregnancy and is a leading contributor of maternal death (Ogunbode, 1997; Obed et al., 1999). Worldwide, it accounts for about 50,000 maternal deaths a year (Duley, 2005; Mahler, 1987; The Eclampsia Trial Collaborative Group, 1995). Eclampsia is defined as occurrence of convulsion or coma or both not caused by any coincidental neurologic disease such as epilepsy in a woman whose condition also meets the criteria of preeclampsia. Eclampsia usually occurs after 36 weeks of pregnancy there are several treatment regimens in eclampsia but magnesium sulphate is now drug of choice in the treatment of eclampsia (Hallak, 1999). Associated complications of eclampsia include CVA, pulmonary oedema, renal failure, HELLP syndrome, DIC and hepatic failure. In developed countries with effective antenatal screening programme, improved diagnostic and therapeutic criteria and extensive researches this

Table 1. Incidence of maternal mortality due to eclampsia

	2007	2008	2009	2010	Total during study period
Maternal deaths	26	24	28	19	97
Death due to eclampsia	11	9	15	9	44
Contribution to maternal death due to eclampsia	42.307%	37.5%	53.571%	47.368%	45.360%

Table 2.Incidence of eclampsia and case fatality rate among eclamptic mother

Year	Total No of delivery (n)	Total no of eclampsia (m)	Eclampsia death (p)	Incidence of Eclampsia (i) = m/n%	Case fatality rate (f) = p/m%
2007	9845	220	11	2.234%	5%
2008	10105	210	9	2.078%	4.285%
2009	11345	259	15	2.282%	5.791%
2010	10900	198	9	1.816%	4.545%
Total	42195	887	44	2.102%	4.960%

Overall incidence of eclampsia in study period 2.102% and overall case fatality rate during study period 4.960%

Table 3. Mode of death in eclampsia

Year	Pulmonary oedema	CVA	HELLP Syndrome	AKI	Others
2007	8	1	1	1	0
2008	7	2	0	0	0
2009	9	4	1	1	0
2010	8	0	0	1	0

Pulmonary oedema is the commonest mode of death in eclampsia in our study.

disease has become a rare complication of pregnancy. Unfortunately such changes have not occurred in developing countries and eclampsia continues to be common (Keeling et al., 1991). This study was undertaken to assess the incidence of eclampsia related maternal death, to assess the mode of death in eclampsia and to determine the socio demographic profile of women influencing the maternal death.

MATERIALS AND METHODS

This is a retrospective study of maternal deaths from eclampsia recorded in Midnapur Medical College and Hospital, West Bengal, India for a period of 4 years (four) with effect from 1st January 2007 to 31st December 2010. Out of total 97 maternal death recorded over the study period (four), records of 44 patients who suffered from eclampsia related deaths were retrieved from the medical records library of Midnapur Medical College. Information pertaining to their age, parity, booking status, gestational age at delivery, and type of eclampsia were also obtained from the records for analysis. In the study period all eclmapsia cases treated with magnesium sulphate.

Exclusion criteria

- The pregnant women with known seizure disorder were excluded from our study
- Eclampsia mother who have not got magnesium sulphate were also excluded

RESULTS AND ANALYSIS

Table 1 shows total maternal death and total eclampsia death during the study period and eclampsia contributes 45.36% of total maternal deaths.

Table 2 shows that overall incidence of eclampsia in a 4 years study period is 2.102% with overall case fatality rates during the study period is 4.960% .

Table 3 shows mode of maternal deaths in eclampsia and its shows that pulmonary oedema is the commonest mode of death in our study.

Table 4. Types of eclampsia in mothers who died (n = 44)

	2007	2008	2009	2010	Total during study period	Percentage
Antepartum	8	7	11	7	33	75
Intrapartum	1	1	1	0	3	6.8182
Postpartum	2	1	3	2	8	18.1818

Antepartum eclampsia death is common 75%.

Table 5. Parity distribution in eclamptic mothers who died (n=44)

Parity	2007	2008	2009	2010
Primi	8	6	11	6
2nd gravida	2	2	3	2
3rd gravida or more	1	1	1	1

Eclampsia commonly occurred in primi gravida.

Table 6. Age distribution in eclamptic mothers who died (n=44)

Age (in yrs)	2007	2008	2009	2010	Total during study period
18-22	7	6	11	6	30
23-26	2	2	2	2	8
27-29	1	0	1	0	2
30-35	1	1	1	1	4

Table 7. Booking status in eclamptic death (n=44)

Booking status	2007	2008	2009	2010	Total during study period
Booked	9	8	12	7	36
Unbooked	2	1	3	2	8

Table 8. Socio economic status (SE Status) in eclamptic deaths (n=44)

SE status	2007	2008	2009	2010	Total during study period
High	0	0	1	0	1
Middle	2	1	2	1	6
Low	9	8	12	8	37

Table 4 shows that type of eclampsia in mothers who died and antepartum eclampsia the commonest culprit in eclampsia death

Table 5 shows that parity distribution in eclampsia death and primi gravida is the commonest sufferer.

Table 6 shows that age distribution in eclampsia mother who died.

Eclampsia commonly found in younger age group 8-22 years.

Table 7 and VIII shows that eclampsia commonly occurs in unbooked case and lower socio economic status.

Table 8 shows that eclampsia commonly occurs in 3rd trimester between (36-40 weeks) of gestational age.

Table 9. Gestational age distribution in eclamptic mothers who died (n=44)

Gestational Age	2007	2008	2009	2010	Total during study period
36-40 wks	8	7	12	6	33
32-35 wks	2	2	2	3	9
< 32 wks	1	0	1	0	2

DISCUSSION

Previously, obstetric hemorrhage was the major cause of maternal mortality in India in primary, secondary and tertiary care set up, but recently paradigm shift in the pattern of maternal mortality has been observed in tertiary health care set up like medical colleges. In our study it is observed that eclampsia contributing 45.360% (40-50%) (Table 1) of all maternal deaths whereas eclampsia causes 12% of all global maternal death (WHO 1999). Decreased incidence of maternal death from obstetric hemorrhage probably due to better facility to control bleeding in tertiary health care set up by availability of oxytocin, methylergometrin, prostaglandin and timely surgical interventions.

In our study, eclampsia incidence 2.102% with case fatality 4.960% was observed (Table 2). Eclampsia incidence is similar to other Indian studies (Saha et al., 2002; Majhi et al., 2001; kamilya et al., (2005). Case fatality rate is of low figure than other Indian studies (Coyaji, 1991; Nobis, 2002; Saha et al., 2002). While reviewing the mode of death in eclampsia it was observed that pulmonary oedema is the commonest cause of death in eclampsia in our study (Table 3). Incidence of pulmonary oedema is higher in eclampsia due to leaky pulmonary capillaries. In our set up due to lack of intensive care monitoring, poorly monitored fluid therapy due to lack of central venous pressure monitoring and pulmonary capillary wedge pressure monitoring leads to increased risk of pulmonary oedema. Lack of ventilatory support is another cause of increased incidence of maternal mortality in pulmonary oedema in our study.

In UK, commonest cause of death in eclampsia is CVA (Tuffnell et al., 2005; Lewis, 2007) which is different from our study. The majority of death was in antepartum period in our study (Table 4) and this comparable to other Indians study (Saha et al., 2002; pal et al., 1997). But a few studies reported the predominance of intrapartum eclampsia over the antepartum eclampsia (Majhi et al., 2001) and postpartum eclampsia has an upward trend (kamilya et al., 2005). The antepartum eclampsia death is mainly due to late referral, poor antenatal check up and transfer of moribund patients just before death to the tertiary hospital.

In the present study, it is observed that eclampsia more commonly occur in younger age group and in primigravida compare to elderly and multigravida mothers (Table 5, 6). This is comparable to other studies in India (pal et al., 1997; Majhi et al., 2001). Eclampsia commonly occurs between 36-40 wks of pregnancy in our study and it is similar to previous observation (Table 7).

CONCLUSION

Eclampsia no doubt contributes significantly to maternal mortality in India. Efforts should be made by all concern to improve facilities and social infrastructure that kill directly or otherwise minimize the occurrence of eclampsia. Skilled and prompt attendant of patient in emergency situations will help to curtail the mortalities from preventable morbidities.

REFERENCES

Coyaji BJ (1991). Maternal mortality and morbidity in the developing countries like India. J Matern Child Health Ind; 2: 3-9.

Duley L (2005). Maternal mortality associated with hypertensive disorders of pregnancy in Africa, Asia, Latin America and the Caribbean. Br J. Obstet Gynecol; 99: 547-553.

Hallak M (1999). Hypertension in pregnancy. In: High risk pregnancy management options. 2nd ed James DK, Steer PJ, Wiener CP, Gonik B eds. W.B Saunders London; 639-64.

Kamilya G, Bhattacharya SK, Mukherjee J (2005). Changing trends in the management of eclampsia from a teaching hospital. JIMA; 103: 132-135.

Keeling J, Binns AM, Ashley DE, Golding J (1991). Maternal mortality in Jamaica. Health Care Provision and Causes of death. Inr J Obstet Gynecol; 35: 19.

Lewis G (Ed) (2007). The Confidential Enquiry into Maternal and Child Health (CEMACH). Saving mother's lives: Reviewing Maternal deaths to make Motherhood Safer 2003-2005. The Seventh Report

Mahler H (1987). The safe motherhood initiative – a call to action. Lancet; 1: 668-70.

Majhi AK, Chakraborty PS, Mukhopadhyay A (2001). Eclampsia – Present scenario in a Referral Medical College Hospital. J Obstet Gynecol Ind; 51: 143-147.

Nobis PN (2002). Maternal outcome in eclampsia. J Obstet Gynecol Asia; 6: 25-28.

Obed SA, Wilson JB, Sakay A (1999). Determinants of maternal mortality in eclampsia at Karle Bu teaching Hispital in Accra, Ghana. Ghana Med J. 33: 88-9.

Ogunbode O (1997). Clinical aspects of eclampsia at Ibadan, Nigeria. Nigeria Med J. 7: 162-6.

on Confidential Enquiries in to Maternal death in the United Kingdom. London: CEMACH.

Pal B, Niyogi G, Patkar V (1997).Maternal mortality in eclampsia. J Obstet Gynecol Ind; 47: 11-17.
Saha S, Ghosh S, Ganguly RP, Das A (2002). Comparative study of efficacy of magnesium sulphate and diazepam in the management of eclampsia in a peripheral rural medical college (A cross over study of 440 cases). J. Obstet Gynecol Ind; 52: 69-72.
Tuffnell DJ, Jankowicz D, Lindow SW, Lyons G, Mason GC, Russell IF, Walker JJ (2005). Outcomes of severe preeclampsia / eclampsia in Yorkshire 1999/2003. Br. J. Obstet Gynecol; 112: 875-80.
The Eclampsia Trial Collaborative Group (1995). Which anticonvulsant for women with eclampsia? Evidence from the collaborative eclampsia trial. Lancet 1995; 345: 1455-1463.
Which anticonvulsant for women with eclampsia? (1995). Evidence from the collaborative eclampsia trial. Lancet; 345: 1455-1463.
WHO (1999).Causes of maternal death: Global estimation in reduction of maternal mortality: A Joint WHO/UNFPA/UNICEF/World Bank Statement. Geneva: WHO.

How to cite this article: Sarkar M, Basak S, Mondal SK, Das S, Roy D, Mandal J, Mondal SC, Das SK (2013). Maternal mortality associated with eclampsia in an indian medical college: a four year retrospective study. J. Med. Med. Sci. 4(10):394-398