

ONE YEAR REVIEW OF MATERNAL MORTALITY ASSOCIATED WITH ECLAMPSIA IN A TERTIARY CARE LEVEL HOSPITAL

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Summary

To enlist the causes of maternal death in patients of eclampsia and to determine how socio-demographic and clinical characteristics of the women influence the death in eclampsia in our setup. This study was conducted in obstetrics and gynaecology department of Chittagong Medical College Hospital, Chittagong, from January 2011 to December 2011. Patients were admitted through emergency obstetrics care unit. Patients demographic record including age, parity, education, socio-economic status along with antenatal care records, level of care and distance from hospital number of fits, gestational age, type of eclampsia, presence of complications, mode of delivery and causes of death were analyzed. All this information was collected from patients records. Eclampsia accounted for 38 (37.7%) of the 101 total maternal deaths recorded within the 1 year period, with case fatality of 9.9%. All patients were unbooked and majority were primigravida (63%) and less than 20 years (39%). Education and socio-economic status were poor. Ante partum eclampsia was the cause in 78.9% and 5.2% of the pregnancies were not delivered before their death. Overall 23% patients had at least one complications and the remaining 67% had more than one complications. The complications leading to eventual death were pulmonary oedema 7 (18.4%), LVF 6 (15.7%), CVD 6 (15.7%), Multiorgan failure 6 (15.7%), HELLP 4 (10.5%), DIC 3 (7.8%), Renal failure 3 (7.8%), peroperative cardiac arrest 2 (5.2%) and pulmonary embolism 1 (2.6%). The distance from the hospital was 10km to 150km. The level of care at nearest health facilities were estimated. 52.6% was attended by traditional birth attendant, 6.9% by skilled birth attendants, 2.9% by doctors and for 25.7%, no level of care was available. Eclampsia still remains the major cause of maternal mortality in our setup resulting from unsupervised pregnancies and deliveries. There is need to educate and encourage the general public for antenatal care and hospital delivery.

Key words

Multiorgan failure; HELLP; DIC

Introduction

Eclampsia is a serious complication of hypertensive disorders of pregnancy accounting for about 50,000 maternal deaths a year world wide [1]. It is defined as “ the occurrence of convulsions not caused by any coincidental neurologic disease such as epilepsy in a woman whose condition also meets the criteria of preeclampsia [2]. Like other developing countries, eclampsia remains amongst the commonest cause of maternal and perinatal death in Bangladesh. Associated complications of eclampsia include HELLP Syndrome (3%), disseminated intravascular coagulation (DIC) (3%), renal failure (3%), cerebral haemorrhage or oedema, cardiac failure and adult respiratory distress syndrome (ARDS) (1%) [3]. Perinatal morbidity and mortality are increased with this disease often as a result of a iatrogenic premature delivery, intrauterine growth restriction or placental accidents such as placental abruption. Following eclampsia, the risk of problems in future pregnancies have been estimated at around 20% for pre eclampsia and around 2% each for recurrent eclampsia abruption and perinatal death [4]. In developed countries with effective antenatal screening programmes, improved diagnostic and therapeutic criteria and extensive research the disease has become a rare complication of pregnancy. Unfortunately such changes have not occurred in developing countries and eclampsia continues to be common [5]. In Bangladesh eclampsia is the second major cause of maternal death (20%) preceded by hemorrhage (31%) [6]. The purpose of this study was to determine causes of maternal death in patients of eclampsia and to determine how socio-demographic and clinical characteristics of the women influence the death in eclampsia in our setup.

Materials & methods

Over a period of one year from January 2011 to December 2011, a cross-sectional prospective study based on purposive sampling technique was conducted at the department of Obstetrics & Gynaecology Chittagong Medical College Hospital, Chittagong.

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The nature of admission is mostly an emergency and referred from other hospitals in critical condition. Predesigned proforma was filled in for each patient with observational facts. A detailed history was taken from attendants or from patient (if conscious and well oriented in time and space). A through general and obstetrical examination was done and a bedside test for proteinuria was performed. Predesigned proforma included the background information regarding patients age, parity, education, socio-economic status, antenatal care, level of care and distance from hospital, number of fits, gestational age, type of eclampsia, presence of complication, mode of delivery and cause of death. All collected data was wire analyzed using statistical program for social science (SPSS) version 10, in the form of percentage (relative frequencies) of variables.

Inclusion Criteria

All patients died due to eclampsia in the study period.

Exclusion Criteria

Maternal deaths not due to eclampsia in the study period.

Results

During the period under review, a total 13867 deliveries were recorded, 383 cases had eclampsia, giving a prevalence rate of 2.76% of the total deliveries. Magso4 is the sole anticonvulsant used for all the cases. Total death from eclampsia were 38 out of the 101 maternal death over the same period accounting for 37.7% of the total maternal death and a case fatality rate of 9.9% (9900/100,000) and eclampsia related maternal mortality ratio (MMR) of 99/100,000 deliveries.

Table 1 : Distribution of Maternal deaths in relation to age, parity, educational status, and socio-economic condition

	Frequency(n=38)	Percent(%)
20 years and <	15	39.4
22-25 years	13	34.2
25-30 years	04	10.5
30-35 years	01	2.6
35 & >	05	13.1
Primigravidas	24	63.1
Multigravidas(2-4)	10	26.3
Grand multigravidas(5&>)	04	10.5
No education	25	68
Primary incomplete	13	32
Primary complete	0	0
Secondary incomplete	0	0
Secondary complete or higher	0	0
Higher class	0	0
Upper middle class	0	0
Lower middle class	8	21.1
Poor class	30	78.9

Table II : Evaluation of causes of maternal mortality

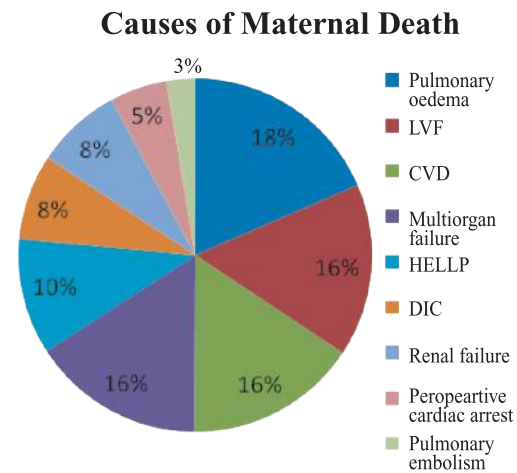


Table III : Cause of delay, distance from hospital and Level of care in relation to maternal mortality

	Frequency(n=38)	Percent(%)
Lack of transport	5	13.16
Poverty and inability to afford cost	10	26.32
Familial taboos	4	10.5
Ignorance about health care facility	19	50
10 to 40 km	10	26.32
40 to 70 km	15	39.48
70 to 100 km	9	23.68
100 to 150 km or more	4	10.5
Traditional Birth Attendants	20	52.63
Skilled birth attendants	5	13.16
Doctors	3	7.8
None	10	26.32

Table IV : Gestational age in weeks, Type of eclampsia and number of fits and presence of complications on admission, and mode of delivery

	Frequency(n=38)	Percent(%)
20-24 weeks	0	0
24-28 weeks	03	7.8
30-34 weeks	19	50
34-38 weeks	13	34.2
38 or more weeks	03	7.8
Antepertum	30	78.9
Intrapertum	06	15.7
Postpertum	02	5.2
10 or more fits	19	50
5 to 10 fits	13	34.2
Upto 5	6	15.8
At least one complication	9	23
More than one complication	29	77
Delivery by C/S	25	65.79
Assisted Vaginal Delivery	7	18.42
Vaginal Delivery	4	10.52
Not Delivered before death	2	5.2

Discussion

Hypertensive disorders of pregnancy are a major cause of maternal and fetal morbidity and mortality all over the world [6]. Eclampsia is a well recognized complication of hypertensive disorders of pregnancy. In the developing countries like, UK eclampsia is rare, complicating about one in two thousand pregnancies; But in developing countries the prevalence has been estimated to be up to 20 times higher [7-10].

Of the estimated 600,000 women world wide who die each year of pregnancy related caused more than 50,000 die of pre eclampsia or eclampsia, and 99% of these deaths occur in developing countries [4].

There is no hard evidence that the incidence of pre eclampsia is higher in developing countries than in developed ones. But when it does occur it tends to be more severe and life threatening for the following reasons: With little or no antenatal care available in developing countries, pre eclampsia tends to remain undiagnosed until the condition has reached an advanced stage; women in these countries tend to have underlying health and social problems which increase their risk of developing re eclampsia and worsen the outcome for them and their babies. In our study, the overall the highest maternal mortality was found in primigravida which accounted for 63% of the maternal deaths, 68% of them were uneducated; around 70% of the patients that died were 25 years or younger; and poverty was a major contributing factor (78.9%), which were also similar to other studies [8,9].

In our study, antenatal care status was observed and none of patient was booked with any of health care facility. All patients were ignorant about the importance of antenatal checkups. Delay in seeking help was identified in >80% of cases (31 deaths). The major causes of delay are given in (Table-III) and it favours the observation in other studies [11,12,13].

Regarding complications, it was observed in this study that most common complications were infection, acute renal failure and DIC followed by cereberovascular accidents, ARDS, HELLP syndrome abruption placentae and blindness. The same results were seen in studies done in UK and Colombia [14,15]. Study done in Colombia showed that 24% patients had at least on complication and remainder had multiple complications.

In this study about 23% patients had at least one complication and remainder had more that one complication which is constent with other studies [14-17].

About 65% patients had surgical intervention showing high rate of surgery in these patients with its attendant consequences as shown by other studies in United Kingdom, USA and also in developing countries [7,12,16-18].

The complications leading to eventual death were pulmonary oedema 7(18.4%),LVF 6(15.7%),CVD 6(15.7%), Multiorgan failure 6(15.7%), HELLP 4(10.5%), DIC 3(7.8%), Renal failure 3(7.8%), peroperative cardiac arrest 2(5.2%) and pulmonary embulism 1(2.6%). Similar results was observed in studies conducted both in developed and developing countries [8,16,17,19,20].

The distance from the hospital was between 10km to 150km.The level of care at nearest health facilities were estimated.52.6% was attended by traditonal birth attendant, 6.9% by skilled birth attendants, 2.9% by doctors and for 25.7%, no level of care was available.

The major deiffernces in the cause of maternal death in eclampsia between developed and developing countries are related to availability of medical care and substandered care was identified in 80% of these deaths which also resembles in our study as depicted in table III [7,9,21,22,23].

These very risk patients require intensive monitoring thorough investigation, prompt and rational treatment whenever necessary. But in our setup the lack of some investigation facilities, ICU support and patient overload sometimes hinder standard care. In our study 25% patient did not get ICU support before death which they needed and 50% patient got ICU support but not in time due to lack of bed in ICU unit which indicated substandard care for these unfortunate women.

Conclusion

There is no doubt that Eclampsia is a significant factor in maternal mortality in our hospital. Maternal condition on admission and associated complications are the major determinants of maternal outcome. Effort should be made by all concern to improve health care facilities and social infrastructure for antenatal care, early detection and management of PET, prompt, skilled and standard management of eclampsia can greatly reduce mortality and morbidity in our setup.

Disclosure

All the authors declared no competing interestes.

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