



## ORIGINAL ARTICLE

### Obstetric Haemorrhage Related Maternal Mortality: A Two-Year Experience at a Teaching Hospital in Bangladesh

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[Received on: 1 February 2021; Accepted on: 20 March 2021; Published on: 1 July 2021]

#### Abstract

**Background:** Bangladesh is one of the developing countries where the maternal mortality is extraordinarily high. **Objectives:** This study was conducted to find out the number and cause of obstetric haemorrhage related maternal death. **Methodology:** This retrospective study was conducted in the department of obstetrics & gynaecology at M.A.G Osmani Medical College Hospital, Sylhet, Bangladesh from January 2006 to December 2007. From all maternal deaths related to pregnancy occurred in that period, only death due to obstetric hemorrhage were enrolled. Thereafter, the records of hemorrhage related death patients were scrutinized and data were collected from death register. All necessary information was collected in a pre-designed clinical data sheet and analyzed. **Results:** Among all deaths in obstetric unit, maternal mortality due to obstetric haemorrhage was 32.09%. The deaths were common among multipara (3-4) in 26-30 years age group. Most of them were from lower socio-economic condition having no or irregular antenatal checkup. Among the causes of obstetric haemorrhage, PPH was the commonest. Atonic uterus was the main cause of PPH. Injudicious use of oxytocin and obstructed labour were the common cause of rupture of uterus. Although the causes of haemorrhage were different, most of the patients died due to haemorrhagic shock. **Conclusion:** This study helps to detect the magnitude of problem and major causes of maternal deaths specially haemorrhage related maternal deaths. [*Journal of Current and Advance Medical Research, July 2021;8(2):90-94*]

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**Cite this article as:** Ahmed T, Haque N, Debnath B, Begum S. Obstetric Haemorrhage Related Maternal Mortality: A Two-Year Experience at a Teaching Hospital in Bangladesh. *J Curr Adv Med Res* 2021;8(2):90-94

**Funding:** This study has been performed without any funding from outside else.

**Conflict of Interest:** There was no conflict of interest to any of the authors.

**Contributions to authors:** TA and NH were involved in study designing, data collection, compiling, data analysis. BD wrote the manuscript. Rests were involved in overall supervision.

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#### Introduction

Maternal mortality is the vital indicator with the greatest disparity between developed & developing countries. Every year more than 200 million women

become pregnant<sup>1</sup>. Child birth is a joyous event of a women's life. But in many cases it ends in fear, suffering and event death. Globally it has been estimated that about half a million women die in

each year of pregnancy related causes. 99 percent of them are in developing countries<sup>2</sup>.

In developing countries, maternal mortality is one of the important cause of deaths among women of reproductive age. According to WHO, a maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental cause<sup>3</sup>.

Pregnancy and childbirth related complications are the leading cause of maternal mortality and morbidity in Bangladesh. Causes of maternal death in Bangladesh are PPH (26%), abortion (21.0%), eclampsia (13.0%), Puerperal sepsis (11.0%), obstructed labour (8.0%) and other obstetric causes (18.0%)<sup>4</sup>. An estimate shows that about 28,000 maternal deaths occur each year in Bangladesh due to pregnancy and delivery related complications<sup>5</sup>. Maternal mortality ratio of 3.2 per 1,000 live- births at present<sup>6</sup> is unacceptably high even by the standards of other developing countries.

In developing countries like Bangladesh, obstetric haemorrhage is still the primary cause of maternal death. Obstetric haemorrhage refers to heavy bleeding during pregnancy, labour or the puerperium. Bleeding may be vaginal and external or less common but more dangerous one is internal, into the abdominal cavity. According to BMMS, 2001, haemorrhage is responsible for 28.37% of maternal death in Bangladesh<sup>7</sup>. Among them PPH is the most common cause.

M.A.G Osmani Medical College hospital is the only tertiary referral hospital for Sylhet Division. Here patients from remote villages and Upazilla come to receive adequate and prompt treatment particularly when complicated and at risk of death. The purpose of the present study was to determine the total number of maternal deaths due to obstetric haemorrhage and also to find out the underlying cause of death during the study period.

## Methodology

This retrospective study was conducted in the department of obstetrics & gynecology, M.A.G Osmani Medical College Hospital, Sylhet, Bangladesh from January 2006 to December 2007. It was a tertiary hospital dealing with a large number of complicated patients. There are three obstetric units having facilities for emergency

management round the clock. From all maternal death related to pregnancy occurred in that period, only death due to obstetric hemorrhage were enrolled for the study. A written permission was taken from the Hospital Authority. After that, the records of hemorrhage related death patients were scrutinized and death cases collected from death register. All necessary information was collected in a pre-designed clinical data sheet (maternal death review form) and finally the findings were compiled. Necessary statistical analysis was then done using SPSS version 20.0 (statistical package for social science). Ethical permission has been taken from the local ethics review committee.

## Results

The total maternal deaths from all causes during the study period was 243. Obstetric Haemorrhage related mortality was 78. Therefore, the percentage of Obstetric Haemorrhage related mortality was 32.09. Most of the patients (32.05%) were belonged to age group 26-30 years followed by 31-35 years (25.64%) and from lower socio-economic background (76.92). Most (35.89%) of Obstetric haemorrhage related death occurred in multipara (3

**Table 1: Socio-economic and obstetric profile of studied population (n=78)**

Variables	Frequency	Percent
<b>Age Group</b>		
• 16 to 20 Years	06	7.69
• 21 to 25 Years	14	17.94
• 26 to 30 Years	25	32.05
• 31 to 35 Years	20	25.64
• 36 to 40 Years	12	15.38
• 41 to 45 Years	01	1.28
<b>Socio-economic condition</b>		
• Low	60	76.92
• Middle	18	23.08
<b>Parity</b>		
• 0	7	8.9
• 1 to 2	17	21.79
• 3 to 4	28	35.89
• More than 4	26	33.33
<b>Gestational Age</b>		
• 6-28 weeks	9	11.53
• 28-40 weeks	69	88.46
<b>Antenatal check-up</b>		
• No	40	51.28
• Irregular	26	33.33
• Regular	12	15.38

to 4) followed by grand multipara (>4). In this study we found that, at 28 to 40 weeks gestation most of the cases died (88.46%). Half of the patients (51.28%) did not have any antenatal check-up (Table 1).

**Table 2: Causes of Haemorrhage Related to Maternal Death (n=78)**

Causes	Frequency	Percent
PPH	30	38.46
APH	17	21.79
Ruptured uterus	23	29.48
Ectopic pregnancy	4	5.12
Molar pregnancy	2	2.56
Coagulopathy	2	2.56

Among the causes of haemorrhage related maternal death, PPH (38.46%) was most common followed by rupture uterus (29.48%) and APH (21.79%) (Table 2).

The critical analysis of maternal death due to PPH showed that main cause of PPH was atonic uterus (46.66%) and retained placenta (6.66%) (Table 3).

**Table 3: Critical Analysis of Maternal Deaths due to PPH (n=30)**

Variables	Frequency	Percent
<b>Parity</b>		
• Para 1	8	26.6
• Para 2	4	13.33
• Para 3	4	13.33
• Para ≥4	14	46.66
<b>Cause of PPH</b>		
• Atonicity	14	46.66
• Retained Placenta	11	36.66
• Genital Tract Injury	2	6.66
<b>Treatment Offered</b>		
• Hysterectomy	1	3.33
• Manual removal of placenta	11	36.66
• Repaired	2	6.66
<b>Cause of Death</b>		
• Haemorrhagic shock	27	90
• Septicaemia	3	10

In this study, we found that injudicious use of oxytocin (91.3%) and obstructed labour (8.69%) were the most common reason behind uterine rupture (Table 4).

**Table 4: Critical analysis of maternal deaths due to ruptured uterus (n=23)**

Variables	Frequency	Percent
<b>Parity</b>		
• Para 2	4	17.39
• Para 4	8	34.78
• Para 5	6	26.08
• Para ≥8	5	21.73
<b>Cause of Rupture</b>		
• Injudicious use of oxytocin	21	91.3
• Obstructed labour	2	8.69
<b>Treatment Offered</b>		
• Subtotal Hysterectomy	13	56.52
• Repaired	1	4.34
• Undelivered	9	39.13
<b>Cause of Death</b>		
• Haemorrhagic shock	22	95.65
• Septicaemia	1	4.34

The causes of APH were placenta previa (52.94%) and abruptio placenta (47.05%). Although the causes of haemorrhage were different, most of the patients died due to haemorrhagic shock (Table 5).

**Table 5: Critical analysis of maternal death cases due to APH (n=17)**

Variables	Frequency	Percent
<b>Parity</b>		
• Para 1-4	9	52.9
• Para 5-10	8	47.1
<b>Cause of APH</b>		
• Abruptio Placenta	8	47.1
• Placenta previa	9	52.9
<b>Complication</b>		
• Shock	9	52.9
• P/V bleeding	8	47.1
<b>Treatment Offered</b>		
• LUCS	8	47.1
• Caesarian Hysterectomy	3	17.6
• Vaginal delivery	3	17.6
• Undelivered	3	17.6
<b>Cause of Death</b>		
• Haemorrhagic shock	17	100.0

**Discussion**

The risk of a woman dying as a result of pregnancy or childbirth during her life time is about one in six

in the poorest parts of the world compared with about one in 30,000 in Northern Europe<sup>8</sup>. Bangladesh is one of the developing countries where the maternal death rate is unexpectedly high. Maternal deaths are clustered around labour, delivery and the immediate post-partum period, obstetric haemorrhage being the main cause of death<sup>8</sup>.

During the study period, admitted patients who died from obstetric haemorrhage were included in this study. This study found that total maternal deaths during study period were 243, obstetric haemorrhage related mortality was 78(32.1%). In comparison to world picture, haemorrhage is the leading cause of maternal mortality in Africa, accounting for 34.0% of maternal death and also in Asia, where it accounts for 31.0% of maternal deaths<sup>9</sup>. This reflects lack of basic obstetric care to be the most important reason of high mortality rate in the developing countries.

Most of the Patient (32.1%) in this study belonged to age group 26-30 years which is near consistent with the findings of Khatun<sup>10</sup> and final report of NIPORT<sup>11</sup>. Though the risk is higher in patients of higher age group, the number is decreasing in recent years because of increased acceptance of family planning measures and natural decline of fertility<sup>11</sup>.

In this study, most of the patients were of Para (3-4), but in Khatun<sup>10</sup> and final report of NIPORT<sup>11</sup>, it was common among primi gravida. In the final report of NIPORT, the pattern of maternal mortality by parity had shown that highest number of maternal death was in patients with first pregnancies, lowest in 2<sup>nd</sup> Pregnancies and then steadily raising.

Most of the maternal deaths occurred in patients hailing from low socio-economic condition having no or irregular antenatal checkup and the findings are consistent with that of Khatun<sup>10</sup>. The findings of NIPORT<sup>11</sup> have shown that risk is lower in economically better off patients, higher in poorer but highest is found in middle class group<sup>11</sup>. In some cases death is not always avoidable but regular antenatal check up by well-trained health personals can recognize the high risk groups or a complication at an early stage and appropriate measures can be taken.

The main cause of haemorrhage related maternal death has showed in Table 2. The finding of this study is consistent with the findings of Jalil<sup>12</sup>. But

in contrast, Paul<sup>13</sup> has showed that most of the patient died from rupture of uterus. In another study by Khatun<sup>10</sup> has found that PPH was the leading cause of death among deaths due to obstetric hemorrhage. Besides these common causes, 5.12% of patients presented with shock and diagnosed as cases of ectopic pregnancy & died due to haemorrhagic shock. Another 2.56% patient presented with pervaginal bleeding with shock, were diagnosed as molar pregnancy. DIC was solely responsible for 1 death in post-partum period of one multiparous lady with IUD and another coagulopathy related death was due to severe jaundice with pregnancy in a primi patient.

In this study, 30 patients out of 78 died from PPH. Among them atonic uterus was the main cause. In another study by Paul<sup>13</sup>, atonic uterus was the main cause (60% case of PPH) followed by retained placenta (20%) and genital tract injury (20%) which are consistent with this study.

We found that the reason behind rupture uterus was injudicious use of oxytocin in multipara patients and obstructed labour. The causes of APH was placenta praevia and abruptio placenta and most of the patients presented with shock and vaginal bleeding. In a study by Paul<sup>13</sup> showed that all cases of APH were due to abruptio placenta. But the ultimate cause of death in our study was haemorrhagic shock in most cases which is consistent with Paul<sup>13</sup>.

This study conducted in a peripheral level tertiary hospital is revealing a fact that maternal mortality is unacceptably high in this part of the country reflecting overall level of substandard care. Immediate attention must be paid to reduce the level to an acceptable minimum.

## Conclusion

This study was conducted in a tertiary hospital to detect the magnitude of problem and major causes of maternal deaths specially haemorrhage related maternal deaths. Among all deaths in obstetric unit, one third death was due to obstetric haemorrhage. Most of the patient was multipara and belonged to lower socio-economic background.

PPH was the most common cause of haemorrhage. Injudicious use of oxytocin and obstructed labour were the most common reason behind uterine rupture. Although the causes of haemorrhage were different, most of the patients died due to haemorrhagic shock

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