ORIGINAL ARTICLE

FREQUENCY OF MATERNAL DEATHS DUE TO DIRECT OBSTETRICAL CAUSES AT A TEACHING HOSPITAL

Fauzia Anbreen[1], Samina Qadir[2], Irum Batool[1], Sadaf Rashid[3]

[1]Department of Gynae/Obs

[2]Department of Community Medicine

[3]Department of Anatomy, Gomal Medical College, D.I.Khan, Pakistan

ABSTRACT

Background: Majority of pregnant woman at risk of complications especially if not addressed properly, end up at mortality. Maternal mortality is much common in developing countries as compared to developed. Maternal mortality not only affects the family but also affects the community and surviving children. The objective of this study was to identify the leading obstetric causes of maternal deaths at a Teaching Hospital.

Material & Methods: It was a cross-sectional study conducted at Department of Gyne/Obs, DHQ Teaching Hospital, Dera Ismail Khan, from January 2012 to December 2014. Included patients were all those who expired due to direct obstetrical causes during this periods. Those with gynecological and medical comorbidities, and anaesthetic complications were excluded. The demographic variables were age, age groups and residence, and research variable were gravidity, state of pregnancy and cause of death. The categorical data was analyzed by count and percentage while numeric data was analyzed by mean and range.

Results: The total obstetric deaths during the study period were 54. The mean age of these patients was 38±2.34 years with a range of 21 years (23-43). Out of these, 31 had hypovolemic shock, 10 had eclampsia, and 8 had ruptured uterus.

Conclusion: Hypovolemic shock is the leading cause of maternal death due to direct obstetrical causes, followed by eclampsia and ruptured uterus.

KEY WORDS: Maternal mortality; Shock; Eclampsia.

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INTRODUCTION

Maternal mortality is defined as death of a woman while pregnant or within 42 days of delivery or termination of pregnancy, from any cause related to or aggravated by pregnancy or its management, but excluding deaths from incidental or accidental causes.[1]

Hospital Mortality rate refers to the percentage of patients who die while in the hospital.[2] Maternal mortality ratio of hospital indicates the standard of care provided to a patient. Maternal mortality is much more common in developing countries, exact number is not known because of poor statistics and record maintenance. According to the WHO and UNICEF, MMR in underdeveloped countries was 340 per 100,000 live births in 2006.[3] One of the Millennium Development Goals is to improve maternal health and to reduce maternal mortality by 75% between 1990 and 2015.[3] Improvement in MMR was noted in 2014 fact sheet published by WHO, according to which MMR in developing countries is 230/100,000 live births and It is 16/100,000 live births in developed countries.[4]

According to WHO, direct obstetric causes accounted for 73% of total maternal deaths between 2003 to 2009 globally. Haemorrhage 27%, hypertension 4%, sepsis 10%, abortion 7.9%, embolism 3.2% and all other causes of death were responsible for 9.6% of total maternal deaths. Most of deaths occur in low income and middle income countries and were avoidable. A key requirement for further advances

Corresponding Author:
Dr. Fauzia Anbreen
Assistant Professor
Department of Gynae/Obs
Gomal Medical College, D.I.Khan, Pakistan
E-mail: drfauziaanbreen@gmail.com

in reduction of maternal death is to understand the causes of deaths for effective policy and health programme decisions.[2,3]

In developing countries like Pakistan, there is critical condition of patients, non-availability of blood and blood banks and poor socio-economic status of patients, all these butters the operative morbidity and mortality.[4]

If one glances the causes of mortality in gynecology and obstetrics set up are mostly because of hemorrhage, hypertension, obstructed labour, abortions and anesthesia. Most of these complications can be prevented through proper ante natal checkup, proper Labor management and dedicated staffs.[5]

Hospital based data is more easily available though it is not a representative of general population and is biased, it does serve as a basis for policy making.

The studies were conducted in various areas of Pakistan, but there is no report in the literature on leading causes of mortality in Dera Ismail Khan. Early marriage high parity & poor utilization of Antenatal Services are common in this Populaiton.[6]

The aim of this study was to identify the causes of maternal deaths due to direct obstetrical causes at a Teaching Hospital.

MATERIAL AND METHODS

This was a cross-sectional study. The records for all the death in DHQ Teaching Hospital, Dera Ismail Khan, during three year from January 2012 to December 2014 were reviewed. Included patients were who expired due to direct obstetrical causes. Those expiries with gynecological and medical co morbidities or anesthetic complication were excluded.

The demographic variables were age, age groups, residence, and research variable were gravidity, state of pregnancy on arrival and cause of death. The categorical data was analyzed by count and percentages while numeric data was analyzed by mean, and range.

The data was collected from patients record and maternal mortality statistics of the year. The data was entered in the computer software program SPSS version 17 and analyzed.

RESULTS

Total deaths during the study period were 54. The total obstetric deaths during the study period were 54. The mean age of these patients was 38±2.34 years with a range of 21 years (23-43). Regarding the age groups, 2 (3.7%) patients were less than 20 years of age, 25 (46%) were of 21 to 30 years, 22 (41%) patients were of 31 to 40 years, and 5 (9.3%) patients were >41 years of age.

Regarding residence, out of these 54 patients, 39 were from rural and 15 from urban area. Among these, 4 (7.4%) patients were primi-gravida, 19 (35%) multi-gravida, 24 (44%) grand multi-gravida and 7 (13%) were great grand multi-gravida. Patients who came in delivered state were 35 (65%), undelivered 17(31%), and with abortion 2 (3.7%). (Table 1)

All these patients presented in a critically ill state. Hypovolemic shock was the leading cause of death in 31 (57%) patients followed by eclampsia in 10 (18.5%) patients. Ruptured uterus was responsible for the death of 8 (15%) patients, and abortion in 2 (3.7%) patients. The cause of death was unknown in 3 (6%) patients. (Fig. 1)

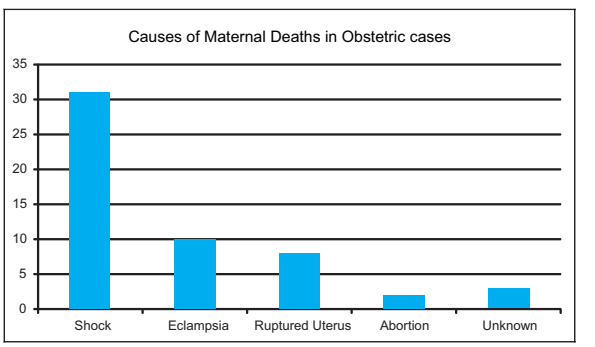

Figure 1: Frequency of causes of maternal deaths in obstetric cases (n=54).

Table 1: Distribution of maternal deaths according to parity.

Parity	Number	Percentage
Primi-gravida	4	7.4%
Multi-gravida	19	35%
Grand multi-gravida	24	44%
Great grand multi-gravida	7	13%

DISCUSSION

In Pakistan each year over five million women become pregnant. Of those 0.7 million (15% of all pregnant women) are likely to experience some obstetric and medical complications. The maternal mortality rate reflects the quality of health care provision particularly for child bearing women. In Pakistan it witnessed an improvement from 350/100,000 in 2001-2002 to 260/100,000 in 2010-2011.[9,10]

In this study 35 patients came in delivered state and in serious condition. In Pakistan over 80% of the deliveries are still taking place at home, the majority of these being conducted by a traditional birth attendants. Most of them are not properly trained, not supervised at their work, and there is no back-up support at the time of need.[8]

A study was conducted at maternal mortality at Jinnah Postgraduate Medical Center Karachi, which shows 41 patients died in hospital and were brought in serious condition.[11] Midwives should be competent enough regarding basic skills. The contributing factor over here is of mid wives.

Regardless of how skilled an attendant at delivery is, very little can be done when patient is in serious condition. In this study 31 patients were received in the state of shock. Now this is the test of hospital regarding emergency obstetric care. Shock patients can't be rescued on I.V line and plasma expanders unless the patient had blood or blood products transfusion and the underlying cause is treated quickly. A study conducted in Sindh by Siddqui et al[10], has shown the lack of emergency facilities as the underlying cause of most obstetric deaths. WHO gives prevalence of post-partum haemorrhage as 34% in Pakistan.[11,13]

Hypovolumic shock was the leading cause of death in this study 31 (57%). This study is also comparable to a study conducted at Jinnah Postgraduate Medical Center, Karachi, which shows that most of the patients were delivered outside the hospital and brought in moribound condition.[11] Similarly a study published by Jafarey SN[18] shows that haemorrhage is the leading cause of mortality. According to the WHO the prevalence of PPH in Pakistan is 34%.[11,13]

Haemorrhage accounted for 36.9% of deaths in Northern Africa, but only for 16.3% in developed regions. Hypertensive disorders were a particularly important cause of death in Latin American and Caribbean, contributing to 22.1% of all maternal deaths in a region.[18]

In our study eclampsia was responsible for 18.5% of maternal deaths as compared to 30.7% deaths at Ayub Teaching Hospital.[14] This again indicates the poor antenatal checkups and poor referral system.

Rupture uterus was responsible in 15% of patients. But is less as compared to study conducted at Abbottabad 34.6%[13] and at a Nigeria hospital 93.2%.[14,17] Advancing maternal age, increasing parity poor utilization of obstetric services are responsible for shock, eclampsia and obstructed labor. Current statistics Economic study 2009 indicates that there is one doctor per thousand population.[15,16] The distribution of health facilities is not uniform as majority of WMOs are concentrated as demonstrators and at those stations where emergency obstetrics is not handled.

CONCLUSION

Hypovolemic shock is the leading cause of maternal death due to direct obstetrical causes, followed by eclamsia and ruptured uterus.

It is recommended to apply safe motherhood strategies all over Pakistan. Proper training of all health care providers especially auxiliary health personnel regarding identification of high risk pregnancy, their emergency management and timely referral if needed. As hypovolemic shock is leading cause of death in our study, blood banks availability and accessibility needs attention. Creating awareness among general population about importance of maternal health using all sources of information.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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None declared.