ORIGINAL ARTICLE

An Audit Of Maternal Mortality At Jinnah Postgraduate Medical Centre Karachi

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ABSTRACT:

Objective: To evaluate the maternal deaths andits causes in a tertiary care hospital.

Materials and Methods: This is an observational analytic study of one year from January 2012 - December 2012, carried out at the department of Obstetrics and Gynaecology Unit 1, Jinnah Post Graduate Medical Centre Karachi.A prospective analysis of one year data comprised of total obstetric admissions, total no of deliveries, live birthsand number of maternal deaths was done.

Results: During the period of one year the total number of deaths certified in the department was 55. During the same year the total number of obstetric admissions and total number of deliveries were 7784 and 6980 respectively. Fifty three(96.4%) maternal deaths were amongst non booked patients.Direct causes were responsible for 70.9% of deaths. Hemorrhage was the direct leading cause and was responsible for 22 (40.2%), deaths. Eclampsia was responsible for 9 (16.4%) deaths. It was the leading cause among all women having their first baby. Ruptured uterus was seen in 3 (5.4%) Patients Three (5.4%) patients died as a result of complications of unsafe abortion. Anemia was the leading indirect cause of death responsible for 14.5% of cases followed by hepatic failure in 6 (10.9%) cases. Two patients died as a result of cardiac disease.

Conclusion: Maternal mortality still remains very high in the tertiary care centers, mainly due to high percentage of referred cases from the periphery brought in moribund condition.

Key words: Maternal Mortality, Audit, Safe Motherhood, Millennium Development Goal.

INTRODUCTION:

Maternal death is defined by "the death of a woman while pregnant or within 42days of termination of pregnancy, irrespective of the duration or site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental causes. In 2005, the global estimate for MMR was 402 maternal deaths per 100,000live-births, with 99% of the burden borne by developing nations Sub-Saharan Africa accounts for 50% of all maternal deaths globally. Of those, 70-80% is due to direct obstetric causes (complications of pregnancy, labor, delivery or the postpartum period)demonstrates the global distribution of the causes of maternal death. Indirect causes of maternal death account for women who die from any other disease during the maternal period (pregnancy and up to 42days postpartum or postabortion). Indirect causes represent a varying spectrum of the burden of maternal deaths, from an average of approximately4% in Latin America up to 13% in Asia and 17% in Africa. Overall disparities in maternal mortality between developed and developing countries are vast and unjustified, clearly illustrating the gap in access to quality healthcare services. In an analysis of 34 worldwide databases by a researcher the ranges found in the proportion of deaths attributable to a specific maternal cause across the region are good evidence of widespread social inequality; for example, taking the primary cause of global maternal deaths - postpartum hemorrhage (PPH) it is said that, in Africa alone, the percentage contribution of PPH to total maternal deaths varied between 13.3 and 43.6% Even within individual low-resource countries, inequities in the risk of maternal death are prevalent The result is not just reflected by the approximately 500,000 maternal deaths each year; it also leaves 10-20million women affected by various degrees of illness related to pregnancy and childbirth[1] In the mid- to late-19th century, the first phase of maternal mortality decline was observed in northwestern Europe (Sweden, Norway, Denmark and the Netherlands) and several decades later in Britain and the USA Based on data from Sweden from between 1870 and 1900, the first phase of this reduction is attributed to the effectiveness of skilled attendance at childbirth. A second phase of maternal mortality decline was seen between the 1930s and the 1960s, and was a result of many advances in medicine, including cesarean section, penicillin, blood transfusion, institutional delivery and antenatal care Maternal mortality decline in the USA and the Netherlands observed in the 1990s was also attributed to changes in population age-structure and parity[2]

Maternal mortality has a serious impact, not only on the family, but the community and the nation. Surviving children are at a 17-fold increased risk of death during the first 6 months.[3, 4] In spite of several initiatives, there has been no substantial reduction in maternal mortality in all developing countries, which contribute to approximately 98% of all maternal deaths. One of the Millennium Development Goals is to improve maternal health. Maternal death was chosen as the outcome measure with which to judge progress. The target is to reduce maternal mortality by 75% between 1990 and 2015[5, 6] Periodical study and analysis of maternal mortality are therefore important to monitor progress. The present study was carried out to analyze maternal deaths in a tertiary care hospital.

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MATERIALS AND METHODS:

Jinnah Postgraduate Medical Centre being the busiest and the premier referral hospital of the city, has 135 beds in the Obstetrics and Gynaecology Department with the annual admissions exceeding 16000 and approximately 14000 deliveries taking place every year. Booked cases are 20% and majorityare referred cases, with the some patients traveling over distances of 100 to 500km from province of Baluchistan and periphery of Sindh. An analysisof all maternal deaths in obstetric unit 1 of Jinnah postgraduate medical centre (JPMC), over a period of one year was done.Relevant data of number of obstetric admissions,number of deliveries, total number of maternal deaths and their characteristics have been obtained from the records of the department. Information was collected about women's booking status, age, parity, socio economic status and reasons for delay in reaching the hospital. Women who received antenatal care at least three times in this hospital were classified as booked while those referred from other institutions were classified as unbooked. The Causes of mortality were classified as in the international statistical classification of diseases and related health problems (ICD10)[5].More than one factor may have led to death but the apparently dominating condition was listed as the cause of death. This was based on clinical judgment, as post mortem examinations were not done.

RESULTS:

During one year period total numbers of deaths certified in the department were 55, during the same year the total number of obstetric admissions and total numbers of deliveries were7784and 6980respectively. The demographic profile of all maternal deaths is given in (Table 1). Majority (96.4%) of maternal deaths were seen in non booked patients only two patients died who were booked at JPMC. More than half of the maternal deaths (50.9%) belong to 21 - 30 years of age and 41.9% of them were multipara. Majority of the patients 30 (54.5%) patients died in immediate post partum period as shown in (Table -1).

Direct causes were responsible for 70.7% of deaths. Hemorrhagewas the direct leading cause and was responsible for 22(40.2%)deaths, nearly 60% of the patients died of post partum hemorrhage and they delivered outside the hospital either at their homes or at some small private maternity clinics Eclampsia was responsible for 9 (16.4%) deathsit was the leading cause among all women having their first baby.Ruptured uterus was seen in 3 (5.4%) patients.Three (5.4%) patients died as a result of complications of unsafe abortion.Anemia was the leading indirect cause of death responsible for 14.5% of cases followed by hepatic failure in 6 (10.9%) cases. Two patients died as result of cardiac dieses as shown in (Table 2).

Table 1
Demographic Profile Of Maternal Deaths

Parameters	**Maternal Deaths**
No. of Maternal Deaths	**n = 55**
Booked	2 (3.6%)
Un-booked	53 (96.4%)
Age in years	
15 - 20	7 (12.7%)
21 - 30	28 (50.9%)
31- 40	18 (32.8%)
> 40	2 (3.6%)
PARITY	
0 + 0	19 (34.5%)
1 - 4	23 (41.9%)
5 & more	13 (23.6%)
Delivery Status	
Abortion	5 (9.0%)
Un-delivered	20 (36.5%)
Delivered	30 (54.5%)

Table: 2
Cause of deaths

n = 55	
Haemorrhage	22 (40.2%)
Eclampsia	9 (16.4%)
Ruptured uterus	3 (5.4%)
Abortion	3 (5.4%)
Embolism	2 (3.6%)
Anemia	8 (14.5%)
Hepatic failure	6 (10.9%)
Cardiac disease	2 (3.6%)

DISCUSSION:

In Pakistan each year over 5 million women become pregnant. Of these 0.7 million (15% of all pregnant women) are likely to experience some obstetrical and medical complications. An estimated 30,000 women die each year due to pregnancy related causes. [7, 8] Reduction of maternal mortality is an important Millennium Development Goal of special concern in low income countries like Pakistan. Direct causes of maternal mortality are still the leading causes in this institution, similar to other developing countries and the other teaching institutions of this country [9, 10, 11,12.] Hemorrhage and Eclampsia were collectively responsible for 56.6% of maternal deaths in this institution during the study period. This is again probably due to late referral of complicated cases to the hospital. In the present analysis obstetrics hemorrhage is the leading cause of maternal deaths. Majority of these deaths were due to post partum hemorrhage and they delivered outside the hospital either at their home or at some small private maternity clinics. These women were brought moribund, in irreversible hypovolaemic shock and succumbed despite availability of specialist doctors and blood transfusion facilities.

Although obstetric hemorrhage was managed immediately and appropriately but they could not saved. Hemorrhage is the commonest cause of death globally with an estimated 166,000 deaths from hemorrhage each year an estimated half occur in sub-Saharan African and more then a third in South Asia.[13, 14, 15]

Deaths from eclampsia constituted 16.4% of deaths. This is also comparable with other studies of developing countries and the other teaching institution of this country [13,14,15,16,17]women who died due to complication of unsafe abortion 5.4% This reconfirms the fact that even in a metropolitan city like Karachi where access to family planning clinics is not an issue, women do not use contraception but opt for abortion to terminate an unwanted and unplanned pregnancy, usually under unsafe conditions [7, 16, 17, 18] Ruptured uterus due to obstructed labour resulted in 5.4% of deaths. Similar observations were made by other authors.[19, 20, 21]

Deaths from severe anemia resulting in anemic failure are still high, accounting for 14.5% of deaths. Reason for this is the high prevalence of anemia in the population especially in pregnant women. This is also comparable with other studies from within and outside the country [22, 23, 24] Pre-existing anemia worsens as pregnancy advances leading to congestive heart failure and death. Anemia also contributed to deaths due to hemorrhage and infection. The majority of patients who died of hemorrhage had pre-existent anemia some of them quite severe. Similarly all the patients who died of infection had lowered resistance because of anemia. Yet another factor is the lack of antenatal care. Most of the women in this country as yet do not realize the significance of antenatal care and therefore seek no advice and have no treatment during pregnancy.[24, 25]

CONCLUSION:

Maternal mortality still remains very high in tertiary care centers, mainly due to high percentage of referred cases from periphery in moribund conditions. Ensuring appropriate provision of emergency obstetric care at peripheral first referral level hospitals can reduce the number of seriously ill patients at the tertiary care hospitals. Medical causes of maternal deaths are largely dependent on the various social factors, such as socioeconomic status, literacy, high parity and health status of women, and should be addressed properly.

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