

# Maternal Mortality at Liaquat University Hospital, Hyderabad

Samina Memon, Shabnam Khowaja and Aijaz Ahmed Sohag

## ABSTRACT

**OBJECTIVE:** To identify causes and risk factors of maternal mortality.

**STUDY DESIGN:** Retrospective study.

**SETTING:** Obstetrics and Gynaecology Unit-II, Liaquat University Hospital, Hyderabad – Pakistan, from January 2006 to December 2007.

**MATERIAL AND METHODS:** The data were retrieved from hospital record to evaluate the causes and risk factors of maternal mortality in our setup.

**RESULTS:** The maternal mortality rate was 1122.86/100,000 births (69/6145). The identifiable factors were haemorrhage and sepsis both in 28.98% cases followed by eclampsia in 21.74% cases. Majority (81.16%) of the cases was unbooked. Most (52.17%) women were of more than 35 years age and 56.52% women were grandmultiparous.

**CONCLUSION:** Obstetrical haemorrhage and sepsis are still major causes of maternal death. Most of these deaths are preventable by providing quality care and by developing effective health care infrastructure.

**KEY WORDS:** Maternal mortality, quality of maternity care, causes and preventable measures, haemorrhage, sepsis.

## INTRODUCTION

According to ICD-10 issued by WHO, maternal mortality 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 causes.<sup>[1]</sup> The status of women and their health care system can be assessed by a country's maternal mortality rate, which shows the greatest difference between developing and developed worlds. More than half a million maternal deaths occur worldwide and 95 percent of these come from developing world.<sup>[2]</sup> The status of maternal health is poor in Pakistan. Around 30,000 women die each year in Pakistan as a result of pregnancy and childbirth related complications.<sup>[3]</sup> In our country the maternal mortality ratio reported within last 10 years varies from 204/100,000 from a small district Kohat,<sup>[4]</sup> and 290 from Lahore<sup>[5]</sup> up to 2736 in a government tertiary care hospital.<sup>[6]</sup> The causes are complex, multiple, interrelated and mostly preventable. Majority of maternal deaths results from poor health which begins at birth, grows worst through adolescence and becomes critical at the time of childbirth.<sup>[3]</sup> The causes of maternal mortality include haemorrhage, hypertensive disorders, sepsis, obstructed labour, and abortion. Majority of them is preventable most of the times, as they depend strongly on quality of health care.<sup>[7]</sup> The purpose of this study was to determine the causes of maternal mortality and to identify preventable factors leading to maternal mortality in our setup.

## MATERIAL AND METHODS

This retrospective analysis of data was carried out in Obstetrics and Gynaecology Unit-II Liaquat University Hospital, Hyderabad – Pakistan, over the period of two years from January 2006 to December 2007. The catchment area of this hospital is almost all of Sindh – rural and urban (except Karachi) and even some parts of Balochistan. Maternal death records were studied for age, parity, education, socioeconomic status, catchment area, antenatal care, causes of delay, and causes of death. A single underlying cause of death was assigned to each case. The underlying cause of death was defined as the disease which initiated the chain of events that ultimately led to death of the woman.

## RESULTS

There were 6145 deliveries and 69 maternal deaths in two years giving maternal mortality rate of 1122.86/100,000 births. Maternal mortality was most frequent in more than 35-years old grandmultiparous poor women accounting 52.17%, 56.52% and 68.11% cases respectively. Most of these women were uneducated (92.75%) and came from far-flung areas (65.22%). These baseline characteristics are detailed in **Table I**. Fifteen (21.74%) of these women were reported to have no health care at any level while only 5 (7.25%) women approached to doctor for antenatal care (**Table II**). The most common cause of delay in seeking health care was lack/difficulty of transportation and the most common causes of maternal death were haemorrhage and sepsis – causing 28.98% deaths each (**Table III**).

**TABLE I:  
BASELINE CHARACTERISTICS (n=69)**

Age Group	Frequency	Percentage
16-20 years	16	23.19
21-35 years	17	24.64
>35 years	36	52.17
<b>Parity</b>		
Primipara	16	23.19
Multipara	14	20.29
Grandmultipara	39	56.52
<b>Education</b>		
Educated	5	7.25
Uneducated	64	92.75
<b>Socioeconomic Status</b>		
Lower middle class	22	31.89
Poor class	47	68.11
<b>Booking Status</b>		
Booked	13	18.84
Unbooked	56	81.16
<b>Catchment Area</b>		
Rural	45	65.22
Urban	24	34.78

**TABLE II:  
LEVEL OF HEALTH CARE (n=69)**

Healthcare Level	Frequency	Percentage
Doctors	5	7.25
Lady health visitor	21	30.43
Dai (TBA)	28	40.58
None	15	21.74

## DISCUSSION

Safe motherhood goes beyond individual women, but it also has a communal and public health goal. The survival and well-being of mother and children is central to family and community life and social flourishing. Reducing maternal mortality is an attainable goal for countries around the world. Statistics show that among the women who die of pregnancy related causes 25% of the women die during pregnancy, 16% die during delivery and 61% die after delivery, with most of these deaths occurring within one week. Hence in total, about 75% of all maternal deaths are those, associated directly or indirectly with some sort of health care facility.<sup>[7]</sup> For women in industrialized countries the lifetime risk of death from pregnancy related complications is 1 in 2,800 but the same risk

**TABLE III:  
CAUSES OF DELAY AND DEATH (n=69)**

Causes of Delay	Frequency	Percentage
Lack of transportation	31	44.93
Economical restrictions	25	36.23
Ignorance of health care	13	18.84
<b>Causes of Maternal Death</b>		
Haemorrhage	20	28.98
Antepartum	8	11.59
Postpartum	12	17.39
Sepsis	20	28.98
Eclampsia	15	21.74
Anaemia	6	8.7
Pulmonary oedema	4	5.8
Hepatic failure	4	5.8

for women worldwide is 1 in 74 due to unawareness or inaccessibility of antenatal care, or substandard maternity care.<sup>[8]</sup> The available data show maternal mortality ratio in Pakistan continue to remain high despite attention paid in Maternal Health. In Pakistan each year over 5 million become pregnant, out of these 0.7 million (15%) of all pregnant women are likely to experience some obstetrical and medical complications<sup>[9]</sup>. The lack of well recorded data and un-reported cases make it extremely difficult to assess level of maternal mortality in Pakistan. About 89% deliveries take place at home and approximately 80% of deliveries are conducted by traditional birth attendants who are unable to manage complications<sup>[10]</sup>. In our study the maternal mortality rate is 1122.86/100,000 births, which is high because complicated cases from other hospitals are also referred to Liaquat University Hospital, the major causes are still haemorrhage, sepsis and eclampsia. We found that haemorrhage was one of the most common causes of maternal mortality in our study. Deaths due to haemorrhage are mostly preventable with immediate and effective resuscitative measures.<sup>[11]</sup> Another most common cause of maternal mortality in present study was sepsis. Unsafe deliveries in unhygienic conditions lead to puerperal sepsis. Septic induced abortions make a significant proportion of maternal deaths<sup>[12]</sup>. Eclampsia found to be the next most common culprit of maternal deaths, as is also killing mothers worldwide.<sup>[13]</sup> Among the major underlying causes of high maternal mortality rate are generally illiteracy and poor socioeconomic status of women in Pakistan, which lead to malnutrition and anaemia that are the major contributors in increasing the maternal mortality rate. Our study also revealed increased frequency of maternal mortality with in-

creasing age, high parity, lower socio-economic status. Our literacy rate is 28%<sup>[14]</sup>. Pakistan is the seventh most populous country of the world with population of 170 million by the year 2007 and population growth ration of 2.6%. It spends less than 1% of GNP on health and education. Current statistics indicate that there is one doctor per 1520 persons.<sup>[15]</sup> However this distribution is not uniform especially in rural areas and majority of them are concentrated in urban areas. Improving the number of booked patients especially grandmultipara, availability of safe blood and positive approach towards life saving surgery can reduce maternal deaths to great extent. Selection of high-risk cases for hospital confinement, early referral and careful use of drugs to control fits can greatly reduce maternal deaths. Furthermore family planning service can play a major role in preventing maternal deaths by reducing health risks associated with unplanned pregnancy.

### CONCLUSION

Quality of maternity care has a direct on maternal mortality ratio. The leading cause of maternal mortality are haemorrhage, hypertensive related disorders and infection. Most are preventable and the majority of these deaths could be prevented with access to quality emergency obstetrics care, delivered through well established healthcare infrastructure.

### REFERENCE

1. Maternal mortality in 2000. Estimates developed by WHO, UNICEF and UNFPA, Geneva, Switzerland, WHO; 2004.
2. Begum S, Aziz-un-Nisa, Begum I. Analysis of maternal mortality in a tertiary care hospital to determine causes and preventable factors. J Ayub Med Coll Abbottabad 2003;15(2):61-3.
3. Akbar N, Shami N, Asif S. Maternal mortality in a tertiary care teaching hospital. J Coll Physician Surg Pak 2002;12:429-31.
4. Jabeen M, Gul F, Rahman M. Maternal mortality ratio and its causes in a District Headquarter Hospital of NWFP. J Postgrad Med Inst 2005;19:377-81.
5. Kausar S, Khalid S, Yousaf F, Akbar M. Maternal mortality in a tertiary care hospital, Lahore – a four year review. Biomedical 2006;22(1):5-8.
6. Jafarey SN. Maternal mortality in Pakistan – compilation of available data. J Pak Med Assoc 2002;52:539-44.
7. Shah N, Khan NH. Third delay of maternal mortality in a tertiary hospital. Rawal Med J 2007;32:163-7.
8. Drife J. Maternal Mortality: National and international perspectives. In: Shaughn PM, O'Brien (eds). The Year book of Obstetrics and Gynaecology. Vol. 8. Philadelphia, WB Saunders,2000:91.
9. Jaffery SN. Review of maternal mortality over 10 years period at JPMC, Karachi. J Pak Med Assoc 1972;22(3):71-6.
10. Begum I. Analysis of maternal mortality in tertiary care hospital Abbottabad. Pak J Med Res 2000;39(3):107-10.
11. Knuppel RA, Hatangadi SB. Acute hypertension related to haemorrhage in obstetric patients. Obs Gynecol Clinic North Am 1995;22:111-29.
12. Jaffary SN. Characteristics and practices of traditional birth attendants, a preliminary study. J Pak Med Assoc 1981;31:288-91.
13. Duley L. Maternal mortality associated with hypertensive disorders of pregnancy. Br J Obst Gynaecol 1992;99:547-53.
14. National report for 4<sup>th</sup> world conference on women at Beijing. Government of Pakistan, Ministry of Women's Development, Islamabad Pakistan 1995.
15. Economic survey 2000-2001. Economic Advisors Wing, Government of Pakistan, Islamabad Pakistan 2001.



#### AUTHOR AFFILIATION:

**Dr. Samina Memon** (*Corresponding Author*)  
Department of Obstetrics & Gynaecology,  
Liaquat University of Medical & Health Sciences  
(LUMHS), Jamshoro, Sindh-Pakistan.  
Email: memon\_sultana@yahoo.com

**Dr. Shabnam Khowaja**  
Consultant Gynecologist  
Aga Khan Maternal & Child Care Centre  
Hyderabad, Sindh-Pakistan.

**Dr. Aijaz Ahmed Sohag**  
Directorate of Admissions (UG)  
LUMHS, Jamshoro, Sindh-Pakistan