

## Maternal Mortality at Lahore General Hospital

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### ABSTRACT

**Objective:** To identify causes and risk factors of maternal mortality in a tertiary care hospital.

**Study design:** Retrospective study

**Material and methods:** This study was done in Obstetrics and Gynaecology unit 1, Lahore General Hospital Lahore, from January 2010 to Dec 2010. The data was retrieved from hospital record to evaluate the causes and risk factors of maternal mortality in our setup.

**Results:** There were 19 maternal deaths out of 4049 deliveries took place in unit 1 with maternal mortality of 470/100,000.

**Conclusion:** Obstetrical haemorrhage and sepsis are major causes of maternal deaths.

**Key words:** Haemorrhage, mortality, pregnancy.

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### INTRODUCTION

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 aggravate by the pregnancy or its management, but not from accidental or incidental causes<sup>1</sup>.

The world Health Organization (WHO) estimates that in 2005 there were 53,6000 maternal deaths – equivalent one every minute of every day – and that the global maternal mortality rate (MMR) is now 400 / 100,000 live births<sup>2</sup>. Over 99% of deaths are in developing countries, and slightly more than half occurred in the Sub-Saharan Africa region alone, followed by South Asia<sup>3</sup>.

In Pakistan each year over five million woman became pregnant and of these 700,000 (15% of all pregnant women) are likely to experience some obstetrical and medical complications. Despite advances in medical technology, maternal mortality remains high in Pakistan; an estimated 30,000 women die each year because of obstetric. Complications' translating to one woman dying every 20 minutes and the MMR is 276/100,000 live births annually<sup>3</sup>.

The major causes of maternal mortality are Haemorrhage, Hypertensive and disorders, sepsis, obstructed labour and abortions<sup>4</sup>. Maternal mortality can in principle be prevented either by avoiding pregnancy, by preventing complications during pregnancy, or by making sure that the complications that do arise are taken care of effectively. Studies conducted in Pakistan on maternal mortality show

results which depend upon the population that specific hospital serve and whether the hospital is in public or private sector. Ever figures very greatly between cities. Two extremes examples are a study done in civil hospital Karachi 1979–1983. Which reported the MMR of 2736/100,000 live births during 1988 – 1999<sup>5</sup>. The purpose of this study was again determining the cause of maternal mortality in Lahore General Hospital, a tertiary care hospital.

### MATERIAL AND METHODS

This retrospective analysis of data was done in Obstetrics & Gynaecology Unit I Lahore General Hospital Lahore, over the period of one year (Jan, 2010 to 31<sup>st</sup> Dec, 2010). This hospital caters patients from the periphery of Lahore and district Kasur. Most of the patients who come to emergency in Obstetric & Gynaecology are unbooked and referred from different small clinics run by LHV's and Dais, so most of the patients have serious complications. In this study record of patient's age, parity, education, socioeconomic status, area of referral, contributing factors, management of patients, number of blood transfusions and cause of death was made.

### RESULTS

A total of 4049 deliveries took place in Obstetrics & Gynecology Unit I during the study period and there were 19 maternal deaths with maternal mortality of 470/ 100,000 births. Out of 19 patients 13 patients came with obstetric problems and remaining 6 patients came with gynecological problems. Age ranged from 18-35 yrs. Most of the maternal deaths (78.9%) occurred in age group b/w 21-35 yrs. Only 2 patients (10.5%) were less than 20 years as shown in

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table 1. Regarding parity, mainly pts were Multi Para (52.6%) & Primi Para (36.8%).

Table 1 Age distribution (n=19)

Age	Frequency	%age
< 20 yrs	2	10.5
21 – 35 yrs	15	78.9
> 35 yrs	2	10.5

Table 2: Pre existing contributing factors

Medical risk factors	Frequency	%age
Anaemia	13	68.4
Cardiac disease	4	21.0
Liver disease	8	42.1
Respiratory disease	6	31.5
Social Factors		
Educated	7	36.8
Un educated	12	63.1
Socio Economic status		
Lower middle class	13	68.4
Poor class	6	31.5
Booking status		
Booked	1	5.2
Unbooked	18	94.7
Area of referral		
Local	12	63.1
Kasur	3	15.7
Others	4	21.0

Table 3: Management of patients (n=19)

Management	Frequency	%age
Conservative	8	42.1
Surgical Management	11	57.8
B Lynch Suture	3	15.7
Internal Iliac A ligation	3	15.7
Obst. Hysterectomy	5	26.3
Laparotomy	4	21.0

Note: In surgical management some patients had more than one procedure.

Table 4: Blood and blood products Transfusions

Number of units	Frequency	%age
Blood		
< 2	8	42.1
2 – 5	6	31.5
> 5	4	21.0
FFP		
< 2	4	21.0
2 – 5	4	21.0
> 5	2	10.5
Platelets		
	2	10.5

As patients came from very poor locality with unbooked status (94.9%) and were mainly un educated (63.1%), so risk factors were very common in such patients. Out of which anaemia was seen in 13(68.4%) cases as shown in table 2. Regarding management of these 19 patients, 8 patients were managed conservatively and surgery was done in 11 patients. Detail of surgery was shown in table 3. In

surgical management some patients had more than one procedure. Out of 13 obstetrics patients 7 were delivered by SVDs and other 6 were underwent C/Section. Details of blood and blood products transfusion were shown in table 4. Causes of maternal death were shown in table 6. Few patients were having more than one cause of death.

Table 5: Delay in blood and blood products Transfusions

Delay in hrs	Frequency	%age
30 min	5	26.3
1 – 2 hrs	7	36.8
> 2 hrs	3	15.7

Table 6: Cause of maternal death

Causes	Frequency	%age
APH	2	10.5
PPH	6	31.5
Sepsis	5	26.3
Eclampsia	2	10.5
Uterine rupture	2	10.5
Pulmonary Oedema	3	15.7
Hepatic failure	1	5.2
Pulmonary Embolism	3	15.7
DIC	4	21.0
Blood transfusion reaction	1	5.2

Note: Few pts were having more than one cause of death.

## DISCUSSION

Pregnancy is not a disease and pregnancy related morbidity and mortality are preventable<sup>6</sup>. Half a million people die each year due to pregnancy related complications and 95% of them come from developing world. South Asian developing countries such like Pakistan, India and Bangladesh have major share in maternal death worldwide. In Pakistan MMR is reported to be 327-1300/100000 live birth<sup>7</sup>.

The most common cause of maternal mortality are haemorrhage 21%, hypertensive diseases 18.6%, spices 13.3%, abortion 11% and other 36% (1989-90 SOGP survey)<sup>8</sup>.

According to our study maternal mortality rate is 470/100000 birth which is higher. The reason of which is that the Lahore General Hospital is a teaching as well as a tertiary care hospital so we receive various cases with complication and also complicated cases of other district Hospitals as well. The major cases are haemorrhage, hypertensive disorder and sepsis. The reason believed this are the deliveries in home are unsafe and unhygienic conditions by untrained birth attendants.

Main bulk of maternal death was caused by the haemorrhage including (APH, PPH, uterine rupture and DIC due to hypovolemic shock)>60% in our study. Death due to haemorrhage are preventable. Successful treatment requires immediate, effective and resuscitative measures<sup>9</sup>.

Sepsis was the second most common (26.3%) cause of the maternal mortality. Unhygienic home deliveries done by the untrained birth attendants were the major cause. Septic induced abortions make a significant proportion of maternal deaths. Our mortality due to sepsis was much higher compared to Farooq N<sup>11</sup> (13.8%) Jafarey SN<sup>1</sup> (19.2%)

In Europe and western countries sepsis continues to be a major contributor to maternal deaths. A review covering a period of 20 years in Norway postpartum sepsis accounted for 4 out of the 47 deaths and was the third leading cause of death<sup>12</sup>. In Lahore General Hospital sepsis is the leading cause to transfer to intensive care unit. In South Africa sepsis is one of the main indications of emergency peripartum hysterectomy.

Sepsis is most commonly seen in induced septic abortion in our study and cause of death in these cases. All research reports revealed that sepsis is a preventable cause of death<sup>13</sup>. Improving the number of booked patients, selection of high risk cases for hospital confinement, early referrals, training of birth attendants with more knowledge of female genital tract anatomy hazards of unsafe procedures proper training to them to understand the problem and to refer the patients to properly equipped referral centers are key to success in reducing maternal mortality.

Eclampsia is still a major cause of maternal mortality worldwide. The frequency of Eclampsia and hypertensive disorders is high in our country. Between 10-15% of maternal deaths are due to hypertensive disorders while 10% deaths are associated with eclampsia<sup>14</sup>. In our study hypertensive disorders were responsible 10.5% maternal deaths.

One of the major underlying problems contributing to high rate of maternal mortality is generally poor educational and socio-economic standing of women in Pakistan. Our literacy rate among females is one of the lowest in the world that is 28%<sup>15</sup>, which keep them ignorant about their reproductive rights and health facilities. This study also revealed increased frequency of maternal mortality with increasing age, lower socio-economic status, illiteracy, socio-cultural factors and poor access to health facility. Improving the number of booked patient especially high risk patient. Emergency obstetrical care should be available to all women round the clock and availability of trained health professionals may also significantly reduce maternal mortality in Pakistan. Health care should be free for all women. Referral system should be properly organized so that delay in seeking help could be avoided.

## CONCLUSION

Mother is most important member of family so every attempt should be done to save the lives of mothers. Improving the health care in rural and in far off areas in Pakistan, increasing the educational status of women, training of the birth attendant.

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