Maternal Mortality at Lady Willingdon Hospital, Lahore

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A study conducted at Gynaecology Unit III, Lady Willingdon Hospital, Lahore from May 2001 to October 2002. The aim of the study was to identify the causes of maternal mortality. According to the results of the study the maternal mortality ratio (MMR) was 519/100,000 (31 deaths /5976 births). The leading cause of death was eclampsia in 12 patients, hemorrhage in 7 patients, complications relating to unsafe abortion in 6 patients. Majority of the patients were unbooked and presented in the hospital very late. Most of the factors responsible for maternal mortality were avoidable and the need to improve the primary health care was an important factor.
Key words: Maternal Mortality, Eclampsia, Hemorrhage, Sepsis.

According to WHO and FIGO maternal death is defined as death of a woman while pregnant or within 42 days of termination of pregnancy irrespective of size or duration of pregnancy from any cause related or aggravated by pregnancy and its management. According to International Classification of Disease (ICD 9th Revision), deaths are categorized into direct, indirect or fortuitous deaths.

Maternal morality rate represents the health statistics, which shows the greatest difference between developing and developed worlds. The reasons for the huge difference are many and include poverty, poor transport, limited access to clinical facilities, high parity, frequent chronic anemia, lack of clinical facilities, equipment, drugs and blood for transfusion, level of education of women and their status in their societies, availability of contraception and freedom to use child spacing measures.

More than half a million maternal deaths occur worldwide each year and 99% of them are in the developing world[1]. WHO estimates that 35-40 million women will suffer from acute complications, 15-20 million will suffer from serious long-term complications as a result of pregnancy.[2]. Because of the situation in Pakistan the exact MMR is not reported, but in hospital based studies it varies from 350 -950/100,000 [3, 4]. The aim of the study was to identify the causative factors for maternal mortality.

Patients and Methods:

The study was carried out at Gynae Unit III, Lady Willingdon Hospital Lahore from May 2001 to October 2002. Maternal death was defined as according to WHO and FIGO definition. Patients record performa was designed including patient's age, parity, education, duration of gestation, socioeconomic status, antenatal hospital booking, position of health care i.e., G.P., TBA, LHV, Dai, nature of delivery, distance from health facility and the place of delivery. Patients were defined as booked if they had 3 antenatal visits. Patient's clinical features were recorded along with relevant investigations and management done in the hospital. The admission to death interval was recorded.

Results:

During the mentioned period of 18 months, there were 5976 births and 31 maternal deaths occurred. Maternal mortality rate was 519/100,000.Direct obstetrical cause was responsible for 26 deaths (i.e, 84%), indirect causes for 4 deaths (i.e., 13%) while 1(i.e, 3%) death occurred due to fortuitous cause. In the study 26 patients (i.e, 84%) were unbooked and without antenatal checkup (Table 2).

All the patients were from low socioeconomic group. Out of 31 patients, 20 patients (64%) were uneducated while 7 patients (23%) had primary education and 4 patients (13%) had secondary education (Table .3). As majority of patients were unbooked, most of them presented in critical situation at the time of admission to the Lady Willingdon Hospital. Twenty-three maternal deaths (74%) occurred within 24 hours of hospital admission. Eight patients (26%) survived for more than 24 hours. Out of 31 deaths 5 deaths (16%) were prenatal, 20 deaths (64%) were postnatal and 6 deaths (20%) occurred due to complications of abortion.

The age of the patients ranged between 15-40 years, but about 2/3 deaths occurred in the age between 20-35 years of age (Table 1). The patients with age less than 20 years were 4 (13%) and all were primigravidae, 2 with eclampsia, one death due to unsafe abortion and 1 death due to post partum hemorrhage. The patients with age more than 35 years were grand multipara. Among 31 patients, 6 patients (19%) were primigravida, 19 patients (62%) were multipara and 6 patients (19%) were grand multipara.

Out of 31 patients, 22 patients (74 %) were at term or near term, while the patients with abortion complications were at 8-14 weeks of gestation. According to development of initial factor 12 deaths (i.e. 39%) occurred due to complications of eclampsia, 7 patients (23%) died due to hemorrhagic causes, 6 deaths (19%) occurred due to complications of abortion, while 2 deaths (6%) occurred due to complications of anesthesia. According to the study leading cause of death was eclampsia. All the patients with eclampsia were referred to the hospital after the eclamptic

fits either at home; private clinic or at a peripheral hospital. Out of 12 deaths due to eclampsia, 1 death was antenatal and 11 deaths were postpartum. The second leading cause of death was hemorrhage. It was antepartum in 2 patients and post partum in 5 patients. The patients with antepartum hemorrhage were received in the hospital in collapsed condition. Among the post partum hemorrhage 6 patients were referred cases while 1 patient was delivered in the hospital. Among the 6 patients who died of complications of abortion, 1 patient was unmarried and had induced abortion by a Dai. The other patients with abortion complications were multiparous. The reason for the abortion was to limit the family size. Two patients died due to anesthesia relating complications, 1 death due to amniotic fluid embolism, 1 death due to CCF, 1 death due to meningitis/enchaphlitis, and 1 death due to hepatic failure.

Regarding the management all patients were given initial resuscitation and were managed according to their respective merit. Out of 12 patients with eclampsia, 6 patients had vaginal deliveries while 6 patients had LSCS. The patients with hemorrhagic causes, 4 patients had ccsarean hysterectomy. Out of 6 patients with complications of abortion, 4 patients had laparotomy and one patient had colpotomy.

Table 1: Age of the patient

Age Group	n=	% age
< 20 Years	4	13
20-35 Years	20	64
> 35 Years	7	23

Table .2: Antenatal checkup

Booking	n=	% age
Unbooked Patients	26	84
Regular	5	16

Table 3: Educational Status

Educational status	n=	% age
Uneducated	20	64
Primary Education	7	23
Secondary Education	4	13

Table 4: Parity

Gravidity	n=	% age
Primigravida	6	19
G2-5	19	62
G6 or above	6	19

Table. 5: Antenatal Care and Health Facilities Comparison

Area	Antenatal Care	Deliveries at Health Facilities	Skilled Attendants at Delivery
Global	68%	46%	57%
Asia	52%	26%	34%
Pakistan	27%	13%	18%

Source: WHO/Family and Reproductive coverage of maternity care, 1997.

Table 6: Causes of death

Causes	n=	%age
Eclampsia	12	39
Hemorrhage	7	23
Abortion Related	6	20
Anesthesia Related	2	6
Amniotic Fluid Embolism	1	3
CCF	1	3
Encephlitis/Menengitis	1	3
Hepatic Failure	1	3

Discussion

It is estimated that 585,000 women die every year as a result of pregnancy and child birth[5]. Over 98% maternal mortality occurs in the developing world[6]. International ranking of countries on the basis of selected health indicators places Pakistan near the tail end of the list, close to the least developed regions of the world[7]. The current morbidity and mortality levels among Pakistani women are with hundreds of precious lives being lost every day although it is widely and openly acknowledge that much of this is preventable. Disease prevention, adequate health care, early diagnosis and timely appropriate treatment should thus be the goal of the members of the medical community. Maternal deaths associated with complication of pregnancy are high because of repeated and closely spaced and high parity pregnancies.

The study depicts the high maternal mortality rate 519/100,000. It is estimated that about 500 maternal deaths occur per 100,000 live births each year in the country but recent estimates (WHO and UNICEF) place this figure around 340[8]. The high figures are also reported by a Peshawar based study[9]. Such high figures worlds wide are quoted from places where there is no access to health facilities e.g., 1238/100,000 from Zambia[10].

In the study the maternal deaths were in comparative younger age group. The reason for this was early marriages and lack of family planning practices. The age at which a woman has her first child has important consequences. The maternal deaths which were observed in the study at late age group were in the grandmultiparae. The two main factors leading to increased risk are short birth interval and childbirth at older ages (35 years or more).

In the study low socioeconomic status, illiteracy, and lack of antenatal care being the key issues. It is also observed in the survey conducted by the National Institute of Pakistan Studies, Islamabad 2001[11].

In the study 84% patients were unbooked (Table 2) and presented in the hospital very late. More than 2/3 (two third) of our population lives in the rural areas. It is estimated that only 55% of the population has access to health services, the situation being much worse in rural areas. At these areas only primary health care centers are available. These centers lack trained staff, basic

instruments, laboratories, blood bank and even medicines. These centers have no direct road approach, and are also difficult to access. The patients living in these areas do not have conveyance and financial arrangements for delivery. This was also observed in study as most of patients belonged to the low socioeconomic group. Most of them were afraid of coming to the hospital and afraid of sharing their problems with health care providers.

The leading cause of death in the study was complications relating to eclampsia while the other leading cause was hemorrhage. These causes were consistent with those from within the country and from other developing countries[12-14]. It was observed in the study that 7 (23%) deaths occurred due to hemorrhage. These patients presented very late. Most of the patients who presented with hemorrhage were successfully resuscitated. In the study 6 deaths (19%) occurred due to complications (sepsis) of unsafe abortion. Two deaths occurred due to complications relating to anesthesia. These patients had cardiac arrest. Tragically the complication was not recognized earlier so therefore not treated promptly.

In the study the parity was strong determinant of the maternal mortality. High parity was observed in more than 70 % of patients. Similar results have been observed in already published studies[15]. It was observed in the study that most of the women were not aware of the normal and abnormal findings in the pregnancy. It is also observed that at primary level either trained health care providers were not available or there was lack of facilities. There was also a problem in shifting of the patients from the concerned place to the tertiary care hospital.

Conclusion:
Most of the factors (eclampsia, hemorrhage, sepsis) responsible for the maternal mortality are avoidable. By improving patient's education, family involvement, improvement of primary health facilities, integrated community based health system, early referral in indicated cases can reduce the maternal mortality markedly.

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