

Maternal Mortality: A 10-Year Study at Nishtar Hospital Multan

H QUDDUSI M S MASOOD S MAZHAR M S AKHTAR

Department of Obstetrics & Gynaecology, Nishtar Medical College/ Hospital, Multan

Correspondence to Dr. Huma Quddusi, Associate Professor. E. mail: quddusi50@hotmail.com.

Objective: To analyse causes of maternal deaths and to identify preventable causes leading to this tragedy in our setup. **Design:** An analytical, hospital-based study. **Place and duration of study:** Department of Obstetric and Gynaecology, Nishtar Hospital Multan from June-August 2005. **Patients and methods:** During the study period retrospective data was collected for period of 10 year from January 1995 to December 2004. This data was analyzed in order to determine the Maternal Mortality Rate (MMR), causes of death and characteristics of the mothers who died including her age, parity and whether they were booked or unbooked. **Results:** A total numbers of 30031 deliveries took place during the study period and there were 178 maternal deaths with maternal mortality rate of 593/100,000 LB (live births). 7(3.9%) patients were below the age of 20, 74(41.5%) were in the age group of 21-30 and 82(46%) in 31-40 years age range. 15(8.42%) were above the age of 40. Most of them (69%) were grand multiparas (Parity >5). The major causative factors were haemorrhage 63(35.4%), eclampsia 41(23.03%), sepsis 25(14.04%), anaemia 18(10.1%), hepatic encephalopathy 14(7.9%), abortion 11(6.2%). Majority of the patients were unbooked and presented in the hospital very late. **Conclusion:** A high proportion of potentially preventable maternal deaths indicate the need for improvements in education for both patient and health care provider. The provision of skilled care and timely management of complications can lower maternal mortality in our setup. **Key words:** Maternal mortality, obstetrical complications, preventive measures

Maternal deaths do not happen by chance. Women die because of lack of obstetric care, unsupervised child birth, unsafe abortion, or lack of access to modern contraception. Although pregnancy is not a disease and pregnancy related mortality is almost always preventable, yet more than half a million women die each year due to pregnancy related complications, 95% of these come from developing world¹. The status of maternal health is poor in Pakistan. An estimated 30,000 women die each year due to pregnancy related causes². About 500 maternal deaths occur per 100,000 live births each year in Pakistan. Recent estimates (WHO & UNICEF) place the figures around 340/100,000 live births which may be even higher because of under registration of deaths in the country and absence of cause of death information³.

Maternal mortality is a sensitive indicator of the status of women, access to care, adequacy and quality of health care. The purpose of this study was to analyse causes of maternal deaths and to identify preventable causes leading to this tragedy in our setup.

Material and methods

This was an analytical hospital based study conducted in the Department of Obstetrics and Gynaecology, Nishtar Hospital Multan during June-August 2005. During the study period retrospective data was collected for period of 10 year from January 1995 to December 2004. This data was analyzed in order to determine the Maternal Mortality Rate (MMR), causes of death and characteristics of the mothers who died including their age, parity and whether they were booked or unbooked. Postpartum autopsy was not possible; consequently, the cause of death was based on clinical assessment and investigations. Maternal death was defined as maternity case that died upon arrival or

after admission. Number of maternal deaths/100,000 maternity cases was calculated as MMR.

Results:

This retrospective study analyzed 178 cases of maternal deaths during ten years period from January 1995 to December 2004, in a tertiary referral hospital. The total numbers of deliveries were 30031. Maternal mortality rate, measuring the risk of death specifically during pregnancy, was calculated to be 593/100,000 LB (live births). The age range was between 16 - 44 years. The number of maternal deaths was lowest in females under 20 and it rose gradually with age. However, maximum deaths occurred in women between 31-40 years (Table 1). The relation of maternal mortality with parity showed a rise in maternal deaths with increasing parity (Table 2). The classical triad of infection, toxemia and haemorrhage accounted for more than half of all maternal deaths (66.3%) (Fig 1). Majority of the patients were unbooked and presented in the hospital very late.

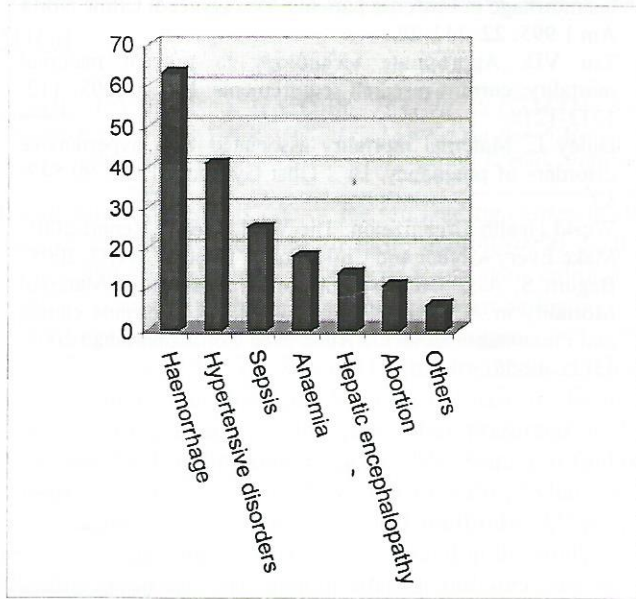
Table 1: Distribution of maternal deaths in relation to age (n=178)

Age group	No.	%
< 20 years	7	3.9
21-30 years	74	41.5
31-40 years	82	46
>40 years	15	8.42

Table 2: Distribution of maternal deaths according to parity (n=178)

Parity	No.	%
Primigravidas	17	9.5
Multigravidas	39	21.91
Grand Multigravidas	122	68.53

Fig-1: Causes of Maternal Mortality (n=178)



Discussion:

The death of a woman in childbirth is not only a tragedy but an unnecessary and wasteful event that carries with it a huge burden of grief and pain. Global maternal mortality statistics reflect the widening gap between the developed and developing world. Half a million women die each year due to pregnancy related complications and 99% of them come from developing world². The lifetime risk of a woman dying of pregnancy related causes in developing countries is 1:40 as compared to 1:3600 in developed world³. Haemorrhage, hypertension, sepsis, obstructed labour and abortion are the major direct obstetric causes, which can be prevented through proper understanding, diagnosis, management of labour complications and most important by strong health care infra structure. It is extremely important to strengthen the four pillars of safe motherhood including family planning, antenatal care, clean safe delivery and essential obstetrical care, which can bring the increase in maternal mortality to an halt.

In our study the maternal mortality rate is 593/100,000 live births, which is higher than a previous local studies conducted in Pakistan³. The reason for this difference is that Nishtar Hospital Multan receives serious cases not only from within the city but also complicated cases referred from periphery of South Punjab.

The major cause of maternal death in our study was haemorrhage (33.3%) which is mostly preventable. Successful treatment requires immediate, effective and resuscitative measures. Hemorrhage is difficult to predict and reducing deaths from hemorrhage requires generous facilities and sophisticated skills. Haemorrhage accounts for 25% of all maternal deaths globally, with primary haemorrhage (PPH) representing the largest share of the cases.

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 eclampsia⁴. In our study hypertensive disorders were responsible for 8(20.8%) maternal deaths.

Sepsis came out to be the 3rd most common cause of maternal mortality (12.5%) in our study. Intrapartum and postpartum genital tract infection accounts for about 80,000 maternal deaths and for considerable morbidity, mostly in developing World. Unsafe deliveries in unhygienic conditions lead to puerperal sepsis. Septic induced abortions make a significant proportion of maternal deaths. Optimal aseptic technique can markedly reduce this proportion.

MMR varies with the age of the mother. Our study also revealed increased frequency of maternal mortality with increasing age and high parity. The results of present study are similar to the study by Shamshad begum, Aziz Un Nisa, Iqbal Begum, which showed an increase in maternal death with increasing age and parity¹³. Increase in maternal mortality with advancing age is probably best explained on the basis of increasing frequency of hypertension and the greater tendency to uterine hemorrhage. Advanced age and high parity act independently to increase the risk of childbearing but their effects are usually additive and in actual analysis, it is difficult to dissociate these two factors.

Maternal deaths are tragic but preventable occurrence. Critical analysis of the maternal deaths suggested that more than 80% were totally preventable. Factors that would reduce the high rate of maternal mortality in this region include more widespread use of prenatal care, training of traditional birth attendants in asepsis, referral of high-risk pregnancies, and improved transportation in rural areas.

Conclusion:

While a number of health indicators have improved over the last two decades, maternal mortality and ratios have shown little improvement. Therefore, there is an urgent need to protect women's health, improve their social status, provide education and empower them. Community involvement is critical, as only when communities take responsibility for resolving the challenges to their health will true and lasting improvement in health status be achieved.

References:

1. Tinker AG. Improving women's health in Pakistan. Human Development Network Series. The World Bank, Washington, DC, 1998.
2. Jafary SN. Maternal Mortality in Pakistan: an overview. Maternal and Prenatal health. TWEL Publication Karachi 1991; 21-31.
3. National Health Survey of Pakistan. Pakistan medical Research Council, Islamabad, Pakistan 1995.

Maternal Mortality: A 10-Year Study at Nishtar Hospital Multan

4. AbouZahr C, Wardlaw T, Stanton C, Hill K. Maternal mortality. *World Health Stat Q* 1996; 49:77—87.
5. AbouZahr C, Wardlaw T. Maternal mortality at the end of the decade: signs of progress? *Bull World Health Org* 2001; 79(6): 561-8.
6. Drife J. Maternal mortality: National and international perspectives. In: *The Yearbook of Obstetrics and Gynaecology*. Vol. 8, Shaughn PM, O'Brien (edi). 2000; 91.
7. Bouvier-Colle MH, Ouedraogo C, Dumont A, Vangeenderhuysen C, Salanave B, Decam C. Maternal mortality in West Africa: Rates, causes and substandard care from a prospective survey. *Acta Obstet Gynecol Scand* 2001; 80(2): 113-19.
8. Lodhi SK, Khanum Z., Maternal mortality at Lady Willington Hospital Lahore. *Ann King Edward Med Coll* 2002; 8(4):286-8.
9. Knuppel RA, Hatangadi SB. Acute hypertension related to haemorrhage in obstetric patients. *Obs Gynecol Clinic North Am* 1995; 22: 111-29.
10. Tsu VD. Appropriate technology to prevent maternal mortality: current research requirements. *BJOG* 2005; 112: 1213-1218.
11. Duley L. Maternal mortality associated with hypertensive disorders of pregnancy. *Br J Obst Gynaecol* 1992; 99:547-53.
12. World Health Organization. *The World Health Report 2005. Make Every Mother and Child Count*. Geneva: WHO, 2005.
13. 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): 49-52.

