ORIGINAL PROF-1578

MATERNAL MORTALITY 2007-2008;

"CONFIDENTIAL INQUIRIES OF GHULAM MOHAMMAD MAHAR MEDICAL COLLEGE HOSPITAL, SUKKUR"

DR. AISHA ABDULLAH SHAIKH, FCPS
Assistant Professor, Gynae & Obst
Ghulam Mohammad Mahar Medical College,
Sukkur

DR. SADIA SABOOHI, FCPS
Assistant Professor, Gynae & Obst.
Liaquat College of Medicine & Dentistry
Gulistan-e-Jauhar, Karachi

DR. RUBINA A D MEMON, FCPS
Associate Professor, Gynae & Obst.
Peoples Medical College,
Nawabshah

Article Citation:
Abdulla A, Memon R.A.D, Saboohi S. Maternal mortality 2007-2008; Confidential inquiries of Ghulam Mohammad Mahar Medical College Hospital, Sukkur. Professional med J Jun 2010;17(2):291-294.

ABSTRACT... Objectives: To analyse the maternal mortality with its causes and possible contributing risk factors at Ghulam Mohammad Mahar Medical College Hospital, Sukkur. **Setting:** This study was carried out at Gynae / Obs Unit-1 of Ghulam Mohammad Mahar Medical College Hospital, Sukkur from Jan-2007 to Dec-2008. **Study Design:** Descriptive case series study. **Subjects and Methods:** This study was conducted by analysing the death records of all maternal deaths who died over a period of two (02) years from Jan 2007 to Dec 2008. The demographic record included age, parity, booking status and education. The cause of death and possible contributing factors were evaluated. **Results:** 48 mothers died during this period making Maternal Mortality Ratio (MMR) of 1578/ 100,000 live births. Direct causes contributed to 79% (38) of maternal deaths while 21% (10) were due to indirect causes. The major causes of deaths were eclampsia 27% (13), haemorrhage 33% (11), Sepsis 21% (10), Obstructed labour 8% (4). Among indirect causes, hepatic encethalopathy, anemia and renal failure were observed. **Conclusions:** Eclampsia, haemorrhage and Sepsis are still the major killers. Factors which need urgent improvement include education, antenatal booking, early diagnosis and referrals to tertiary care centers.

Key words: Maternal Mortality, Eclampsia, Haemorrhage, Sepsis.

INTRODUCTION

Maternal death, according to ICD-10 issued by WHO is defined as "Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of duration and the site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes"[1].

About half a million women die each year due to pregnancy related complications[2] and 95% of these come from developing countries[3]. In Pakistan the estimated maternal mortality ratio ranges from 281 in Karachi to 653 in Balochistan[4]. The major causes of maternal mortality are haemorrhages, sepsis, hypertensive disorders obstructed labour and unsafe induced abortion[5].

Our hospital is a teaching hospital and it receives referrals from more than three districts including rural areas. Before this study we had no data with regards to causes and possible contributing factors of maternal mortality. The aim of this study was therefore to assess the magnitude and associated risk factors of maternal deaths in our hospital.

Article received on: 26/10/2009
Accepted for Publication: 22/12/2009
Received after proof reading: 30/03/2010
Correspondence Address:
Dr. Aisha Abdullah
Flat # 1, Al-Asif Pride opposite Income Tax Building,
Queens Road, Sukkur
dr.aishashaikh@hotmail.com

PATIENTS AND METHODS

This descriptive study was carried in Gynae /Obs Unit-1 at Ghulam Mohammad Mahar Medical Hospital, Sukkur over the period of two years i.e. Jan 2007 to Dec 2008. The records of all maternal deaths during this period were analyzed. The demographic data of each patient including age, parity, educational status, whether booked/un-booked was reviewed. Mode of delivery was noted i.e. whether vaginal or C-section was done. In our hospital vaginal deliveries are usual conducted by women Medical Officers while for a cesarean section always a senior doctor who is qualified obstetrician like Assistant Professor is called upon. Finally the cause of death was recorded. Possible contributing factors e.g. unavailability of blood etc. was also noted.

RESULTS

A total of 3041 deliveries took place during this period and 48 maternal deaths were recorded making MMR of 1578/100,000 live births. All the ladies were uneducated except 4 who had completed their primary education. 11 cases were resident of Sukkur city while the rest came from other districts either directly from home or referred from private clinics due to unavailability of Operation theater, surgeon, blood etc.

All the cases were un-booked except 2 who had 3 antenatal visits but no follow-up for last two (02) months.

Majority of deaths were seen who were > 29 years of age and with parity more than 4.

Direct causes contributed to 79% (38) of maternal deaths the commonest being eclampsia 27% (13) followed by haemorrhage 23% (11) and sepsis 21% (10). Obstructed labour as a cause of death was seen in 8% (4) of cases.

21% (10) of maternal deaths had indirect causes which included hepatic encephalotathy 10% (5), anemia 8% (4) and renal failure 2% (1).

Among all above maternal deaths 12 had emergency c-section done and 15 delivered vaginally. 12 cases were already delivered when they arrived at our unit. 9 cases did not deliver at all as they were dead on arrival or they died within 2-hours of arrival at our hospital.

Relationship of Age & Parity with Maternal Mortality	
Age (yrs)	n (%)
< 20	8(17)
21-30	16(33)
31-40	15(31)
41^{+}	9(19)
Parity	
0	16(33)
1-3	15(32)
4^{+}	17(35)

Causes of Maternal mortality	
Direct Causes	**Maternal deaths [n (%)]**
Eclampsia	13 (27)
Haemorrhage	11 (23)
Sepsis	10 (21)
Obstructed labour	04 (8)
Total no. of Maternal deaths	38 (79)

Causes of Maternal mortality	
Indirect Causes	**Maternal deaths [n (%)]**
Hepatic Encephalopathy	05 (10)
Anaemia	04 (08)
Renal Failure	01 (02)
Total no. of Maternal deaths	10(21)

Mode of Delivery	No. of Patients
Em. C-Sections	12(25%)
Vaginal Deliveries	27(56%)
Did not Deliver	09(19%)
Total	48

DISCUSSION

Pregnancy is not a disease and morbidity & mortality related to it are preventable[6]. According to WHO, Maternal Mortality is an important measure of a woman's health and indicative of the performance of health care systems[7]. Unfortunately there is a big divide between developed and developing world on the score of maternal mortality. Developed countries have MMR of around 20/100,000[8] while countries like Afghanistan the figure is 1600/.100,000[9].

According to National Health survey of Pakistan the MMR of +country is 400/100,000 live births[10] but the figure could still be higher as there is no systemic reporting of maternal mortality especially in rural areas.

The MMR in our study was 1578/100,000 live births which is quite comparable with the studies carried in big tertiary hospitals at Hyderabad[11] and Karachi[12]. The high MMR of our study is because of the fact that our hospital receives mostly the cases which are usually un-booked and late referrals. Many times the patients die on their way to the hospital because of transport problems. In our study the indirect causes contributing to maternal death were 21% while it is only 4-5 % in D.I Khan[13] and Civil Hospital Karachi[14]. Among indirect causes, hepatic encephalopathy was the most common cause, the fact that still in the rural areas awareness about prevention and transmission of hepatitis is poor leading to chronic infection and ultimately death.

Eclampsia remained the most common cause (27%) of maternal death which is same as shown by Hassan et al[11] and Nusrat[14]. This is in contrast with the results from other studies[13,14,15] which showed haemorrhage to be the leading cause of maternal death.

Haemorrhage came out to be the 2nd most common cause (23%). 6 cases had severe Antepartum haemorrhage (APH) while 5 had Postpartum haemorrhage (PPH). This is in contrast with the study carried by Shah et al[5] which showed haemorrhage to cause 60% of maternal deaths.

Sepsis was the 3rd leading cause of maternal death in our study which is quite similar to that shown by Begum et al[2] at Ayub Medical College Abbotabad. Our results in this regard also match with Hassan[11] and Shah[14] Sepsis is no more a leading cause of maternal mortality in developed countries.

Most of the deaths (55%) occurred in women who were between 25-35years of age. Highest mortality was seen in primigravidas and grand multiparas (parity more than 4).

In Pakistan MMR (400/100,000)[10] is alarming. Reducing maternal mortality by 2015 is part of millennium development goals (MDG[s]) set forth by International community and endorsed by the Government of Pakistan, by virtue of which we are committed to reach the stated target in the next six years[16]. According to Regional Health Forum, the three delays increase the risk to a woman's life i.e. delay in deciding to seek care, delay in reaching a medical facility and delay in receiving quality care at facility[17].

The MMR in Srilanka has declined from 630 in 1948 to 57 in 2000[18]. This gain is achieved by improving female education, women empowerment and availability of emergency obstetric care. In Pakistan poor education, poverty and cultural setup are the major factors which need to be given serious attention.

CONCLUSION

Our study showed that majority of mothers who died were uneducated and almost all of them belonged to poor socioeconomic group. This low literacy keeps the women ignorant about their health. Poverty, malnutrition, anemia and infection are inter-related problems.

Educating females about hygiene, vaccination and basic health problems through lady health visitors should be encouraged. Training of Doctors, LHV's and mid wives through workshops with regards to family planning, antenatal care, eclampsia, anemia, clean safe delivery and essential obstetric care will help to reduce maternal mortality to greater extent.

Basic and Rural Health Centers should be provided ambulances so that early referral can be made possible. In tertiary care centers, we need to improve easy availability of screened blood and ICU care. Availability of senior consultants including obstetricians/ anesthetists and trained staff round the clock will also help to reduce our MMR.

REFERENCES

1. **Maternal Mortality in 2000.** Estimates developed by WHO, UNICEF and UNFPA, Geneva, Switzerland, WHO; 2004.
2. Begum S, Aziz-un-Nisa, Begum I. **Analyses of Maternal Mortality in a tertiary care hospital to determined causes and preventable factors.** J Ayub Med Coll Abottabad 2003;15:49-52.
3. Hafez G. **Maternal Mortality: a neglected and socially unjustifiable tragedy.** Eastern Mediterr Health J 1998;4:7-10.
4. Fikree FF, Middhet F, Sadruddin S, Berendes HW. **Maternal Mortality in different Pakistani sites: ratio, clinical causes and determinants.** Acta Obsted Gynecol scand. 1997;76: 63745.
5. Shah RJ, Ali I, Bandray A, Fazili A, Khan I. **Analysis of Maternal Mortality in a small teaching hospital attached to tertiary care hospital (A 10 year review).** Indian J Community Med [Serial online] 2008 [cited 2008 Dec 29];33:260-2.
6. Schritemaker NW, Grauenthorst JB, VanDouger. **Maternal Mortality and its prevention.** Eur J Obs Gynaecol 1999;42 :531-5.
7. Abouzahr C, Wardlaw T. **Maternal Mortality at the end of decade: Signs of progress?** Bulletin of WHO 2001;79:561-8.
8. WHO, UNICEF, UNFPA. **Maternal Mortality in 2000 estimates developed by WHO, UNICEF, UNFPA.** Geneva:WHO,2003.
9. **Maternal Mortality in central Asia** (http://www.cahr.info/index files/page 0023.htm). Central Asia Health Review (CAHR), 2 June 2008.Pakistan Demographic Health Survey 2006. National Institute of Pop.Studies Islamabad, 2002.
10. Pakistan Demographic Health Survey 2006. National Institute of Pop. Studies Islamabad, 2002.
11. Hassan N, Srichand P, Zaheen Z. **One year analysis of Maternal deaths at Liaquat University Hyderabad.** J Liaquat Uni Med Health Sci Sep-Dec 2007;6(3):98-102.
12. Shah N, Hussain N, Shoaib R, Hussain A, Gillani R and Khan H. Journal of Col of Phy and Surg Pak: JCPSP 19(2):95-8 2009 Feb.
13. Sultana A, Saba N, Ghazala. **Materna death and its causes A challenge for achieving millenium goals.** Ann King Edward Med Coll Jan-March 2007;13(1):3-6.
14. Shah N, Khan H. **3rd delay of Maternal Mortality in a tertiary hospital.** Rawal Med J 2007;32:163-167.
15. Onah HE, Okara JM, Umeh U, Chigbu CO. **Maternal Mortality in Health Institutions with emergency Obstetric care facilities in Enugo state, Nigeria.** J Obstet Gynaecol 2005;25:569-74.
16. Pakistan Millennium Development Goals Report 2006. Planning Commission, Govt. of Pakistan. Islamabad 2007.
17. Rai NK, Dali SM. **Making pregnancies in South East Asia.** Regional Health Forum WHO, South East Asia Region. 2007 (Vol 6, No.1).
18. Annual Report Family Health. Colombo, Sri Lanka: Evaluation Unit, Family Health Bureau, Ministry ofHealth,2000.

PREVIOUS RELATED STUDIES

Mahnaaz Roohi, Robina Ali. High maternal mortality at Faisalabad. (Original) Prof. Med Jour 6(4) 556-568 Oct, Nov, Dec, 1999.