

A RETROSPECTIVE STUDY OF MATERNAL MORTALITY DUE TO POSTPARTUM HAEMORRHAGE OVER THE PERIOD OF LAST 10 YEARS IN A TERTIARY CARE CENTRE

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ABSTRACT

OBJECTIVE

To study the maternal mortality due to PPH over last 10 years at a tertiary centre.

MATERIALS AND METHODS

Retrospective study of all maternal death due to PPH from October 2004 to September 2014 was carried out.

RESULT

There were a total of 60 maternal deaths which occurred due to PPH. Majority of maternal mortality in women with parity >3 (56.67%). Unbooked cases accounted for 96.67% of maternal deaths. Most of the cases were in age group of 21-30 years. Commonest cause of maternal mortality due to PPH was atonic PPH (50%).

CONCLUSION

Effective measures should be taken to ensure provision of antenatal care to all pregnant ladies and safe hospital deliveries, prophylactic therapeutic management of anaemia as well as availability of blood bank at the peripheral centres. Training of health personnel at the peripheral level for timely identification and referral of the high risk cases, timely availability of blood products and to ensure that all women have access to the high quality essential and emergency obstetric services along with the provisions of safe abortion, contraceptive services, and family planning counselling to reduce unplanned pregnancy.

KEYWORDS

Maternal Mortality, PPH-Postpartum Haemorrhage, Anaemia, Active Management of Third Stage of Labour, Parity.

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INTRODUCTION

"A deep dark continuous stream of mortality- how long is this sacrifice to go on?" William Farr, the first Registrar General of England and Wales, asked this question about maternal mortality in England in 1838;⁽¹⁾ many years now this question still not been answered.

The International Code of Diseases (International Statistical Classification Of Disease And Related Health Problems, 10th revision)⁽²⁾ defines maternal death "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from the accidental or the incidental causes."

Haemorrhage remains as one of the top 3 direct obstetric causes of maternal mortality worldwide, with most deaths occurring within 24-48 hours of delivery.⁽³⁾

Reduction of the maternal mortality ratio by three quarters by 2015 is the target for one of the eight Millennium Development Goals (MDGs) set by 189 countries in 2000.⁽⁴⁾

Maternal mortality is currently estimated to be 529,000 deaths per year, a number that translates into a global ratio of 400 maternal deaths per 100,000 live births.⁽⁵⁾

Postpartum haemorrhage is the most common cause of maternal mortality and accounts for one quarter of maternal deaths worldwide. Fig. 1.

With improvement in obstetric services, increasing public awareness for antenatal care, availability of blood bank services, better anaesthetist care, newer more potent drugs, mortality rates in our country have also gone down although at a slower pace as compared to developed world.

In a developing country like ours where malnutrition, multiparity, hypoproteinaemia during pregnancy is more prevalent and haemoglobin levels are already low, even a small amount of blood loss can also be disastrous.

What is tragic is that most of these deaths due to postpartum haemorrhage are preventable. We need to ensure that all women have access to high quality essential and emergency obstetric services along with provisions for safe abortion and contraceptive services at FRU level to reduce mortality due to unplanned pregnancies.

MATERIAL AND METHODS

This retrospective study was conducted to study the maternal mortality due to PPH over last 10 years that occurred at the Department of Obstetrics and Gynaecology, Gajra Raja Medical College, Gwalior from October 2004 to September 2014.

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RESULTS

- Majority of the death occurred till September 2010 (76.7%) (Table No. 1).
- Most of the cases of maternal mortality due to PPH were in age group of 21-30 yrs. (Table No. 2).
- Majority of the maternal mortality was in the women with parity of 3 or more than three (Table No. 3).
- Most of the cases of maternal mortality due to PPH were the unbooked cases (Table No. 4).
- 70% of the cases were referred cases (Table No. 5).
- 75% cases were moribund at the time of admission in the Hospital (Table No. 6).
- Majority of maternal mortality due to PPH was seen in vaginal mode of delivery with 42 number of cases (Table No. 7).
- Commonest cause of maternal mortality due to PPH with was atonic PPH (Table No. 8).
- Majority of mortality was observed among the women of poor socio-economic status (73.3%) when compared to higher socio-economic status (Table No. 9).
- In most of the cases of mortality due to PPH, duration was <24 hours (Table No. 10).
- In majority of the cases, blood was either not arranged or arranged after 2 hours (Table 11).
- In 71.67% cases of mortality, there was severe anaemia (Table No. 12).
- The high risk factor anaemia is associated with majority of the cases (69.86%) (Table No. 13).
- In majority of the cases, atonic PPH was the main cause of maternal mortality due to PPH, hence oxytocin and uterine massage used in 38.46% of the cases, followed by packing 25.64% of the cases and repair of the birth canal in 20.51% cases (Table No. 14).

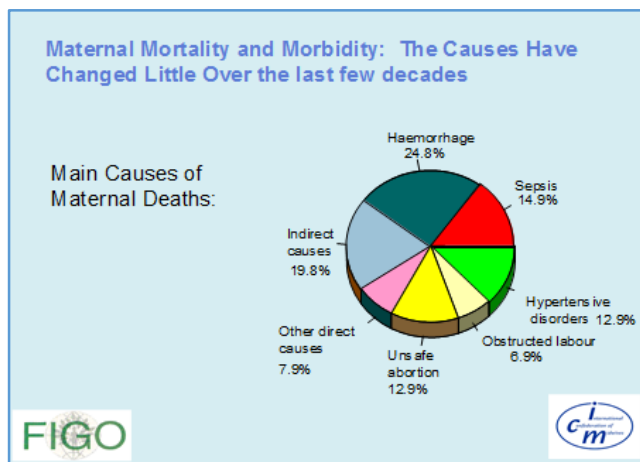


Fig. 1

Year Wise Mortality	No. of Cases	%
October-2004 To September -2005	6	10
October -2005 To September -2006	2	3.33
October -2006 To September -2007	9	15
October -2007 To September -2008	7	11.67
October -2008 To	7	11.67

September -2009		
October -2009 To September -2010	15	25
October -2010 To September -2011	1	1.67
October -2011 To September -2012	2	3.33
October -2012 To September -2013	4	6.67
October -2013 To September -2014	7	11.67
Total	60	100

Table 1: Distribution According to year wise Mortality

Age (years)	No. of Cases	%
<20 or 20	7	11.6
21-30	42	70
>30	11	18.33

Table 2: Distribution According to Age

Parity	No. of Cases	%
P1	15	25
P2	11	18.3
≥ P3	34	56.67

Table 3: Distribution According to Parity

Antenatal Care	No. of Cases	%
Booked	2	3.33
Unbooked	58	96.67

Table 4: Distribution According to Antenatal care

Direct or Referral	No. of Cases	%
Referral	42	70
Direct	18	30

Table 5: Distribution According to Direct or Referral Cases

Condition on Admission	No. of cases	%
Moribund	45	75
Stable	15	25

Table 6: Distribution According to Condition on Admission

Mode of Delivery	No. of Cases	%
Vaginal	42	70
Caesarean section	8	13.3
Laparotomy for rupture uterus	10	16.6

Table 7: Distribution According to mode of Delivery

Cause of PPH	No. of Cases	%
Atonic PPH	30	50
Atonic traumatic PPH	7	11.6
Traumatic	7	11.6
Rupture Uterus	10	16.6
Uterine inversion	2	3.3
Retained placenta	2	3.3
DIC	2	3.3

Table 8: Distribution According to Cause of PPH

Socioeconomic Status	No. of Cases	%
Poor	44	73.33
Average	12	20
Good	4	6.67

Table 9: Distribution According to Socioeconomic Status

Duration of Stay (in hrs.)	No. of Cases	%
< 1	10	16.67
1-6	20	33.33
6-24	20	33.33
>24	10	16.67

Table 10: Distribution According to Duration of Stay

Time Lapse between PPH and Blood Availability	No. of Cases	%
< 2 hrs.	14	23.34
> 2 hrs.	26	43.33
Blood not arranged	20	33.33

Table 11: Distribution According to Time Lapse between PPH and Blood Availability

Degree of Anaemia	No. of Cases	%
Mild	9	15
Moderate	8	13.33
Severe	43	71.67

Table 12: Distribution According to Degree of Anaemia

Associated Factors	No. of Cases	%
Anaemia Cases (Severe / Moderate)	51	69.86
Previous 2 LSCS	2	2.73
Previous LSCS	3	4.10
IUD	3	4.10
Malaria	2	2.73
Jaundice	4	5.47
Pre-Eclampsia	1	1.36
Obstructed Labour	2	2.73
Twin	2	2.73
Grand Multiparity	3	4.10
Total	73	100

Table 13: Distribution According to Associated Risk Factors

Management	No. of cases	%
Oxytocin + Uterine massage	30	38.46
Packing	20	25.64
Repair of birth canal	16	20.51
Internal iliac artery ligation	4	5.12
Caesarean hysterectomy	4	5.12
Uterine reposition	2	2.56
Manual removal of placenta	2	2.56
Total	78	100

Table 14: Distribution according to Management

DISCUSSION

In our study, mortality due to PPH is maximum in the age group of 21-30 years which is 70%.

Humaira Naz et al 2008⁽⁶⁾ in their study found that 17(34%) cases of mortality due to PPH in the category of 21-25 years of age. This may be a reflection of early age of marriage still prevalent and the younger age of marriage in our country is associated with the relative increased gravidity and parity at the younger age.

In the present study, parity 3 or more is associated with majority of the cases of the maternal mortality due PPH and is statistically significant (P value=0.028).

Munim S et al 2000⁽⁷⁾ reported three-fold increased risk of PPH in grand multiparous woman.

In our study, 58(96.67%) cases were unbooked and 42 (70%) number of cases were referred.

Study done by Humaira et al.⁽⁶⁾ in which 28(58%) patients who developed PPH were unbooked and referred from emergency department.

Tayyab S 1996⁽⁸⁾, Begum I 2000.⁽⁹⁾, Wasim T 2001⁽¹⁰⁾, Subtil D et al 2004⁽¹¹⁾ mentioned that most of the patients were unbooked who presented with PPH, which is the main cause of maternal mortality.

Hence, these unbooked cases presented to the hospital when they had severe, life threatening condition.

In this study, majority of mortality, 44 cases were observed among the women of poor socio-economic status (73.3%) when compared to higher status.

In the study of Neetu Singh et al (2014),⁽¹²⁾ majority of the cases of PPH belong to low socio-economic status 83.75%. In the present study, major cause of the maternal mortality was found to be atonic PPH 30 cases (50%) with p value=0.93, but is not significant, which may be due to the reason that most of the cases were referred at a very poor general condition and nowadays active management of third stage of labour (AMTSL) started at peripheral centres, but still it is the major cause among all the causes.

The main cause of PPH in the study of Neetu Singh et al.⁽¹²⁾ was uterine atony with a frequency of 38.48% (289 cases).

In our study, maximum number of cases i.e. 50 cases had duration of stay less than 24 hours. A study done by Nishu Priya et al (2010)⁽¹³⁾ where 54.63% of deaths occurred within 24 hours of admission.

In our study, 43(71.6%) cases had severe anaemia.

In the study of Humaira,⁽⁶⁾ 44 (80%) patients had anaemia. Out of these, 20(45.5%) had mild anaemia, 13(29.5%) had moderate and 11(25%) had severe anaemia.

In our study, 42(70%) of vaginal mode of delivery associated with the mortality due to PPH.

In the study of Humaira Naz et al.,⁽⁶⁾ vaginal mode of delivery associated with PPH.

In our study, as the main cause of the PPH was uterine atony, uterine massage with oxytocin was required far more frequently in most of the groups.

In the present study, various risk factors associated with the PPH such as major risk factor anaemia (moderate and severe) which worsens the condition of the pregnant woman. Other than this, the risk factors which were observed in decreasing frequency were jaundice (5.47%), previous LSCS (4.10%), IUD (4.10%), grand multiparity (4.10%), malaria (2.73%), obstructed labour (2.73%), twins (2.73%), previous 2 LSCS (2.73%), preeclampsia (1.36%).

In the studies of Hazra et al 2004.⁽¹⁴⁾, Shaheen F et al.⁽¹⁵⁾, Japaraj RP et al 2003.⁽¹⁶⁾, it was mentioned that obstructed

labour, pre-eclampsia, and failure to progress are all the risk factors associated with PPH and the frequency of PPH is more in the patients with APH.

CONCLUSION

The number of maternal mortality has fallen steadily in western world, but situation in part of developing world is appalling despite an increase in institutional deliveries, most pregnant women do not receive any antenatal care, and are at risk of obstetric complications. In this study, large magnitude of maternal mortality due to PPH cases may be attributed to improper management of obstetric emergencies at referring hospitals and poor, access/utilisation of health care services.

Through PPH is preventable cause of maternal mortality which can be achieved by accurate assessment of risk factors and blood loss during the delivery, with proper use of oxytocics and active management of third stage of labour. In addition, program of activities seek to expand community awareness, response and demand for quality maternal health services and should include activities within the health system to review all maternal deaths and severe morbidity and to act on lessons learned.

Early age of marriage worsens the life of women both physically as well as mentally and aggravate the present and future pregnancy. Timely monitoring of the labour such as use of partogram helps in early recognition of abnormal labour and hence helpful in timely referral, but negligence on the part of the family member regarding blood donation and society myths attached to it further exacerbate the condition. Improper habits of delivery like use of fundal pressure, mismanaged third stage of labour and control cord traction, injudicious use of uterotonic and untrained health personnel proves a great barrier.

Hence, if effective measures are taken to ensure provision of antenatal care to all pregnant ladies, safe hospital deliveries and timely referral of high risk pregnancies, complications are expected to decrease.

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