



A STUDY OF NEAR MISS OBSTETRICAL EVENTS AT A TERTIARY CARE CENTRE AT MADHYA PRADESH

Gynaecology

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ABSTRACT

Background: Maternal mortality is the major indicator used to monitor maternal health. For every women, who dies, however, many suffer serious life threatening complications of pregnancy. Yet relatively little attention has been given to identifying a general category of morbidities that could be called near misses. Characterising near miss morbidity is valuable for monitoring the quality of hospital based case and for assessing incidence of life-threatening complications.

Besides mortality data, the identification and accurate documentation of "near-miss" morbidity (a more sensitive index) is extremely important to assess the quality of health care systems. It can suitably guide to adopt appropriate measures to reduce maternal mortality and morbidity.

Methods: A cross sectional observational study was conducted in department of obstetrics and gynecology, MGM medical college Indore (M.P.) over a period of 2 years. Out of all obstetric inpatients cases of near miss were taken, identified by WHO 2009 criteria. In all cases the demographic characteristics, frequency of near miss in each criteria, direct and indirect obstetric causes of maternal morbidity & mortality were noted. This study was approved by institutional ethical committee. The data was recorded in predesign coded case report form and statistical analysis was performed using the STATA 12.1.

Result: in the present study incidence of Near miss was 65.6, Maternal mortality ratio=558(2017) 590(2018) per 1 lakh live birth and Near miss to maternal death ratio was 11.4

Severe maternal outcome ratio=71.3 per 1000 live birth

Conclusion: Maternal near miss reviews provide evidence of where the main problem in overcoming maternal mortality and morbidity may lie, and analysis can be done in practical terms and highlight the key areas requiring recommendations for health sector and community action as well as guidelines for improving clinical outcomes.

KEYWORDS

maternal morbidity, maternal mortality, maternal near miss

INTRODUCTION

According to World Health Organization, definition of near miss refers to a woman who nearly dead but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy.

Maternal mortality is frequently described as "just tip of the iceberg", implying that there is a vast base to the iceberg - maternal morbidity - which remains largely undescribed.

Maternal near miss cases is an accurate measure of standard of maternal care. These cases may be defined as 'those women requiring critical care and/or transfer to intensive care unit. The analysis of maternal death had long been used as a criteria for evaluating women's health in addition to the quality of obstetric care. Most of these deaths occurring in developing countries and only about 1% in developed countries. For every women who dies, however, many suffer serious life threatening complications of pregnancy, yet relatively little attention has been given to identifying a general category of morbidities that could be called "near-misses".

So, besides maternal mortality data the identification and accurate documentation of "near-miss" morbidity (most sensitive index) is extremely important to assess the quality of health care system.² It can suitably guide to adopt appropriate measures to reduce mortality and morbidity.

Major causes of "near-miss" are:

- Severe obstetric haemorrhage.
- Severe hypertensive disorder of pregnancy
- Sepsis.
- Uterine rupture.
- Early pregnancy complications
- Rupture ectopic pregnancy
- Unsafe abortion and complications of abortion
- H. mole

The present study is an endeavour to assess the direct causes of "near-miss" and their influence on overall maternal mortality.

METHODS

This cross sectional observational study was worked out in the Dept. of Obstetrics & Gynecology, M.G.M Medical College & M.Y. Hospital, Indore over the period of 2 years from 1st January 2017 to 31st December 2018. Out of all admitted obstetric patients, cases of near miss were taken, identified by WHO 2009 criteria, but all components could not be taken into consideration in our set up. In all cases the demographic characteristics, frequency of near miss in each criterion, direct and indirect obstetric causes were noted. The following indices were calculated: Absolute number of near miss cases: No of near miss cases diagnosed by particular criteria.

Near miss incidence ratio: No. of near miss per 1000 live births

Severe Maternal Outcome Ratio (SMOR): Number of women in life threatening situation (MD+MNM) per 1000 live birth.

Maternal near miss to mortality ratio: Ratio between near miss and maternal death.

Basic demographic characteristics clinical presentation and laboratory findings were recorded in predesigned case report from all studied cases. Numerically coded data entered in MS excel 2007 worksheet and logical validation and editing was done before analysis. Categorical variables were summarized as frequency distribution and mean+SD was analysed using chi square or fisher's exact test as appropriate. Statistical analysis was performed using stata 12.1.

RESULTS

Pregnancy is normal, healthy state that most women aspire at some point in their lives, yet while pregnancy and childbirth should be an occasion for rejoicing, life threatening complications may occur, which if inappropriately managed, could lead to maternal death or disability. The Present study was focused on direct obstetrics causes of severe maternal morbidity and mortality.

During the study period of 2 years total obstetric admissions were 34,242 whereas no of total live births were 25,232 out of these 1656 (4.83% of total admissions) fitted the definition of near-miss and 145 (0.42% of total admissions) were maternal deaths.

Near miss incidence=65.6

Maternal mortality ratio=558(2017) 590(2018) per 1 lakh live birth

Near miss to maternal death ratio=11.4

Severe maternal outcome ratio=71.3 per 1000 live birth
Most of near miss 78.32 % and 78.95 % of maternal deaths were of age 21-30 years.

61.45% of near-miss and 68.42 % of mortality were uneducated.69.47 %of near-miss and 65.78 % of maternal deaths were from rural areas. Most of near-miss 71.49 % were referred from different rural sub-centre.

Maximum patients of near-miss were first handed by paramedical staff and referred to M.Y. Hospital in serious condition with no records about the severity of illness and treatment given. All cases of near-miss and maternal morbidities were unbooked cases.43.38 of near-miss and 39.48 % of deaths were primigravida, 2.40 % of near-miss were grandmulti.

The most common reason for near-miss was acute severe hypertension 41.9 %,acute severe hypotension 27.75%, , ruptured ectopic 7.2 %, ruptured uterus 4.8% .

postpartum hemorrhage 3.0 %, antipartum hemorrhage 20%placenta previa 18.2 %, ectopic pregnancy 14.45 %, ,inversion uterus .84%.

Primary direct obstetric factors for maternal mortality were acute severe hypertension (55.30%).similar results were showed in study conducted by Roopa PS et al.³

Most common level of delay identified was at the patient level. Ignorance, reluctance on the part of patient / relative, delay in transferring cases to health care center and lack of hard cash were major factors responsible for near-miss and mortalities

DISCUSSION

This study was focused on direct and indirect obstetric causes of severe maternal morbidity because they account for 80% of maternal deaths in developing countries and because appropriate and cost effectiveness are available for dealing with them.

Near-miss to maternal mortality ratio

Near-miss mortality identified nearly 11.42 times as many cases as maternal deaths.

Studies shows a large variation in death, near-miss viz. 1:5 (Pretoria, South Africa) 1:28 (Scotland from Scottish Assessors for the confidential enquiries into maternal death, 1:19 (France), 1:24 (Nova Scotia), 1:118 (London) and 1:48 (Nigerian Tertiary Centre), and 1:3.27 in present study. Most of the variation in the ratio described is due to different inclusion criteria.^{4,5,6}

Reasons for being as maternal 'near-miss' and primary initiating obstetric factor

The most common reason for near-miss was acute severe hypertension 41.9 %,acute severe hypotension 27.75%, , ruptured ectopic 7.2 %, ruptured uterus 4.8% .

postpartum hemorrhage 3.0 %, antepartum hemorrhage 20% placenta previa 18.2 %, ectopic pregnancy 14.45 %, ,inversion uterus .84%.

in our study primary obstetric factors for maternal near miss was acute severe hypertension 41.90%, Bansal M, et al⁷ showed that the main indications for near-miss were eclampsia (80%) while in Jayaratnam S, et al⁸ study obstetric hemorrhage (32.8%) and pregnancy induced hypertensions(17.2%) were the two main reasons for critical care.

This contrasts with reports from the USA and other European countries which put hypertensive diseases as the main or even the third cause. A similar trend is found when one compares the leading causes of maternal death between developed and developing countries.⁹

Obstetric hemorrhage and acute severe hypertension were the main reasons for near-miss and maternal mortality while both are preventable and at least manageable if diagnosed at an early stage.

CONCLUSION

Near-miss is measurable and may be a more meaningful way to measure improvements in health care. The near-miss to mortality ratio can possibly be a new indicator of maternal care and could be used to compare improvements in treatments more accurately than mortality data alone.

Near-miss allows for an effective audit system of maternal care because it is clinically based, the definition is robust and the cases identified reflect the pattern of maternal death. Lastly, every maternal death is tragedy, what is an even greater tragedy is failing to learn from why a mother died

Table 1: Demographic characteristics of the study group

Variable	Percentage (%)
Age (Years)	
20 – 30	78.38
31 – 39	17.32
>40	4.3
Locality	
Rural	69.47
Urban	30.53
Religion	
Hindu	78.2
Muslim	21.8
Education	
Illiterate	61.4
Primary	13.7
Middle	19.1
Secondary	5.7
Graduate	1.4
Occupation	
Daily wage worker	26.6
Farmer	4.9
Service	2.9
Housewife	65.7
Gravida	
primi	39.4
multi	60.6
Booking status	
Unbooked	56.2
Booked	43.8

Table 2 Direct Cause Of Maternal Near Miss

Direct cause	Maternal near miss
ACUTE SEVERE HYPERTENSION	40.04
Eclampsia	24.94
Severe pre eclampsia	15.1
ACUTE SEVERE HYPOTENSION	26.30
Ruptured uterus	1.2
Ruptured ectopic pregnancy	1.9
PPH	9.06
Abruption placentae/DIC	4.11
Placenta previa	3.66
Placenta accrete	0.57
Retained placenta	1.99
Inversion uterus	0.06
OBSTRUCTED LABOR	1.73
SEPTIC ABORTION	0.13

Table 3 Indirect cause of near miss

	Near miss(%)
Severe anemia	19.66
jaundice	8.42
Cardiac disease	2.37
Respiratory disease	1.35

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