

Evaluation of Near Miss Cases in Obstetrics in A Tertiary Care Centre in North Kerala



Medical Science

KEYWORDS : Maternal Near Miss, Near Miss Audit, Maternal Mortality

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ABSTRACT

Objective: To improve the obstetric care and to reduce the maternal mortality and morbidity

Method: A prospective study was conducted during May 2015 to April 2016 to assess the frequency and nature of maternal near miss cases (MNM) as per WHO criteria. For each case, primary obstetric complication leading to maternal morbidity was evaluated.

Results: There were 1934 deliveries, 1867 live births, 45 MNM cases and one case of maternal mortality. Haemorrhage and hypertensive disorders of pregnancy were the leading cause of MNM.

Conclusion: Developing countries carry a high burden of maternal mortality and morbidity which may be attributed to improper management of obstetric emergencies at referring hospitals, poor referring practices and poor access or utilisation of health care services.

INTRODUCTION

The global Maternal Mortality rate in 2013 was 210 maternal deaths per 1 lakh live births. Maternal death audit forms the mainstay of evaluation of maternal health services in developing countries. Maternal Mortality is frequently described as just the "tip of the iceberg", pointing to the vast base of the iceberg that is in the form of Maternal Near Miss (MNM) maternal morbidity which has largely been undescribed. An audit of these cases is called Near Miss Audit (NMA).

NMA provides an improved understanding of the determinants of maternal morbidity and helps to identify areas of substandard care. This transition from studying deaths to studying maternal morbidity has followed a worldwide trend because the absolute number of deaths is relatively small as compared to the number of cases of MNM which thus generate more information.

Large differences were found among countries in the incidence of MNM because of different settings and variation in the criteria used to define the MNM. In 2009 the WHO defined an MNM case as a woman who nearly died but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy.

In recent years, evidence from developing country settings and analysis of near miss cases has helped in understanding health system failure in relation to obstetric care. Reviews of MNM cases are likely to yield useful information as they are not as rare as maternal deaths, have the same pathways that lead to deaths and provide information regarding care received and possible means of prevention.

Materials and Methods

To assess the Maternal Near Miss events among obstetric cases managed at our hospital, we conducted a prospective study of the patients admitted to the Department of Obstetrics and Gynaecology at Pariyaram Medical College from May 2015 to April 2016.

For identification of MNM cases, we used the WHO criteria. We analysed the primary obstetric complication leading to severe maternal morbidity and the measures we took to save that mother.

For each case of MNM, demographic characteristics, gestational age at time of morbidity, nature of obstetric compli-

cation, details of delivery or abortion, need for blood transfusion, length of hospital stay and outcome were recorded.

Results

During the study period of one year, we had 1934 deliveries with 1837 live births, 45 cases of MNM and 1 case of maternal death. 93% of the MNM cases were booked outside and referred to our hospital with complications.

Sociodemographic and clinical variables for MNM cases

●Age of the patient

- <20 years-6
- 20-40 years-39

●Number of pregnancies

- Primi -9
- G₂-9
- G₃, G₃₊-11
- POSTPARTUM-16

●Gestational age

- 1st TRIMESTER-3
- 2nd TRIMESTER-2
- 3rd trimester-14
- 28-37 weeks-10
- 37+ weeks-16
- PP-16

●Mode of delivery

- Vaginal -6(Induced)
- CS-17
- Instrumental-2

●Length of Hospital stay

- 5-10 days-33
- 10+ days-12

in the age group 20-40 years. 44% were multigravidas and 16 cases (35%) were in the postpartum period. 3 patients of MNM were in the first trimester, 2 patients in the second trimester and 14(31%) belonged to the third trimester, the majority being between 28 to 37 weeks.

Regarding the mode of delivery, majority of them had Caesarean as the mode of delivery.

33(73%) of the MNM cases had a hospital stay of 5 to 10 days. 26% of them had to stay for more than 10 days.

Primary Determinants

Regarding the primary determinants of MNM, 28 cases (62%) were related to obstetric haemorrhage, 17 cases (37%) due to hypertensive disorders of pregnancy.

Primary determinants of Near Miss (Table 2)

Haemorrhage	28
Hypertensive disorders of pregnancy	17
Sepsis	4
Rupture Uterus	3
Anaemia without haemorrhage	1
Jaundice in pregnancy (AFLP)	1

Distribution according to WHO criteria

According to clinical criteria, 17 cases (37%) were in a state of shock at the time of presentation. 12 cases (26%) had features of clotting failure.

According to management based criteria 26% had to use continuous vasoactive drugs, 22% of MNM cases needed intubation, 28% had to undergo obstetric hysterectomy following haemorrhage. 35% received blood transfusion more than 5 pints.

During this study period, we had one case of maternal mortality which was a case of amniotic fluid embolism.

Discussion

It is clear that maternal death is merely the tip of the iceberg of maternal morbidity. This study yields useful information regarding the pathways leading to severe morbidity and death.

The incidence of MNM in this study is 24/1000 live births which was similar to that found in other hospital based studies in developing countries. Near Miss to Mortality ratio in our hospital is 24:1. The higher the ratio, the better is the health care.

In our study, the demographic profile was similar to that found in other studies of different parts of our country.

The causes of MNM and maternal mortality were compared with other studies. The most frequent determinants of MNM were haemorrhage and hypertensive disorders. Haemorrhage occurred in 62% of Near Miss. So we need to enforce the preventive methods like active management of the third stage, accurate measurement of blood loss, improving the protocol and education of the community.

Hypertension was the cause in 37% of Near Miss. Prevention of hypertension is still elusive. Regular blood pressure monitoring, use of MgSO₄ prophylaxis, protocol formulation and health education could help to reduce the complications.

Sepsis had a Near Miss of 8%. Prevention can be achieved by adopting techniques like hand hygiene, early diagnosis, rational use of antibiotics and early goal directed therapy.

Conclusion

The results show that serious maternal morbidity and Near Miss affected a significant number of women in the northern part of Kerala. Obstetric bleeding disorders were the most frequent cause of SMM & NM.

The monitoring of SMM/NM cases may allow for the evaluation of adequate obstetric care. The data from the study can be useful to help care providers to recognise early high risk pregnancies and develop interventions for the prevention of severe maternal morbidity.

References

1. Ronsmans C, Fillipi V. Reviewing severe maternal morbidity: learning from life threatening complications. Geneva World Health Organisation 2004 p 103-24
2. Geller S, Rosenberg D, Cox S, et al. Defining a conceptual framework for maternal near miss morbidity. J Am Med Women Asso. 2002; 57:135-9
3. Mantel GD, Buchmann E, Rees H, et al. Severe acute maternal morbidity: a pilot definition for near miss. BJOG. 1998; 105:985-90
4. Waterstone M, Bewley S, Wolfe C. Incidence and predictors of severe obstetric morbidity: case control study. BMJ. 2001; 322:1089-94
5. Basket T F, Sternadel J. Maternal near miss mortality in obstetrics. BJOG. 1998; 105:981-4.
6. Shrestha N S, Saha R, Karki C. Maternal mortality and morbidity at Kathmandu Medical College. Kathmandu Univ Med J. 2010; 2:222-6