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Original Research Article

A Study of the Clinical Profile, Causes, Management, and Outcomes of Maternal Near-Miss Cases at Sanjay Gandhi Memorial Hospital, Mangolpuri, Delhi, India

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Abstract

Background: Maternal near miss (MNM) refers to a woman who nearly died but survived a life-threatening complication occurring during pregnancy, childbirth, or within 42 days following termination of pregnancy. Maternal near-miss assessment provides valuable information regarding the quality of obstetric care and helps identify factors contributing to severe maternal morbidity. Evaluation of these cases may help improve the timely recognition and management of life-threatening obstetric complications.

Aim and Objective: To evaluate the clinical profile, causes, management, and outcomes of maternal near-miss cases at Sanjay Gandhi Memorial Hospital, Mangolpuri, Delhi, India.

Method: This retrospective observational study was conducted in the Department of Obstetrics and Gynaecology, Sanjay Gandhi Memorial Hospital, Mangolpuri, Delhi, India. Data were collected retrospectively from hospital records for a period of two years, from January 2018 to January 2020. Women who developed life-threatening obstetric complications during pregnancy, childbirth, or within 42 days following termination of pregnancy and fulfilled the specified maternal near-miss criteria were included.

Results: During the 24-month study period, 4,066 deliveries were recorded, of which 72 women were identified as maternal near-miss cases. The prevalence of maternal near miss was 1.78%, corresponding to approximately 18 maternal near-miss cases per 1,000 deliveries. Haemorrhage (39%) and hypertensive disorders of pregnancy (30%) were the leading causes.

Conclusion: Haemorrhage and hypertensive disorders of pregnancy were the leading causes of maternal near-miss events, followed by sepsis and severe anaemia.

Keywords: Maternal Near Miss; Severe Maternal Morbidity; Haemorrhage; Hypertensive Disorders of Pregnancy; Sepsis; Obstetric Complications.

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Introduction

A maternal near-miss event refers to a woman who nearly died but survived a life-threatening complication occurring during pregnancy, childbirth, or within 42 days following termination of pregnancy [1]. Identification of factors associated with maternal near miss may help strengthen healthcare systems and improve the prevention and management of severe maternal morbidity [2].

The World Health Organization (WHO) proposed standardized criteria for identifying maternal near-miss cases based on clinical, laboratory, and management indicators of organ dysfunction [1].

Table 1: WHO Criteria for Identification of Maternal Near-Miss Cases

Clinical criteria	Laboratory criteria	Management criteria
Acute cyanosis	Oxygen saturation <90% for >60 min	Continuous use of vasoactive drugs
Gasping	pH <7.1	Intubation and ventilation for ≥60 min unrelated to anaesthesia
Loss of consciousness lasting ≥12 h	PaO_2/FiO_2 <200 mmHg	Hysterectomy following infection or haemorrhage
Loss of consciousness with absence of pulse/heartbeat	Lactate >5 mmol/L	Dialysis for acute renal failure
Respiratory rate >40 or <6/min	Creatinine ≥300 µmol/L or ≥3.5 mg/dL	Transfusion of ≥5 units of red blood cells
Stroke	Acute thrombocytopenia (<50,000/mm³)	Cardiopulmonary resuscitation
Shock	Bilirubin >100 µmol/L or >6.0 mg/dL	—
Uncontrollable paralysis	Loss of consciousness with glucose and ketoacids in urine	—
Oliguria non-responsive to fluids or diuretics	—	—
Jaundice in the presence of pre-eclampsia	—	—
Clotting failure	—	—

WHO Near Miss Criteria [1]: Maternal near-miss surveillance provides valuable information regarding gaps in obstetric healthcare, including limitations in diagnostic facilities, availability of equipment, trained manpower, referral services, and timely access to emergency care. Review of maternal near-miss cases can therefore help identify areas requiring improvement and contribute to strengthening maternal healthcare services [3,4].

Systematic evaluation of maternal near-miss cases using standardized criteria can help identify high-risk pregnancies, recognize major causes of severe maternal morbidity, and assess gaps in emergency obstetric care. Therefore, the present study was undertaken to evaluate the clinical profile, causes, management, and outcomes of maternal near-miss cases at Sanjay Gandhi Memorial Hospital, Mangolpuri, and Delhi.

Aim: To evaluate the clinical profile, causes, management, and outcomes of maternal near-miss cases at Sanjay Gandhi Memorial Hospital, Mangolpuri, Delhi, India.

Materials and Method

This retrospective observational study was conducted in the Department of Obstetrics and Gynaecology, Sanjay Gandhi Memorial Hospital, Mangolpuri, Delhi, India, over a period of two years. Data were obtained retrospectively from hospital records from January 2018 to January 2020.

Women who developed life-threatening complications during pregnancy, childbirth, or within 42 days following termination of pregnancy and fulfilled the maternal near-miss criteria were identified from hospital records and included in the study.

Clinical and demographic characteristics including age, parity, booking status, gestational age at admission, referral status, underlying obstetric complication, management received, and maternal outcome were recorded wherever available in the medical records.

The maternal near-miss cases were categorized according to the primary underlying condition, including haemorrhage, hypertensive disorders of pregnancy, sepsis, severe anaemia, and other associated conditions

Inclusion Criteria

1. Women presenting during pregnancy, childbirth, or within 42 days following termination of pregnancy.
2. Women fulfilling the specified maternal near-miss criteria.
3. Cases with adequate medical records containing the required study information.

Exclusion Criteria

1. Maternal deaths occurring during the study period were excluded from the maternal near-miss analysis.
2. Women presenting more than 42 days following termination of pregnancy.
3. Gynaecological conditions unrelated to pregnancy.
4. Obstetric complications not fulfilling the maternal near-miss criteria.
5. Records with insufficient information for assessment.

Statistical Analysis: The collected data were entered into Microsoft Excel and analysed using appropriate statistical methods. Categorical variables were expressed as frequencies and percentages, while continuous variables were summarized using mean ±standard deviation or median and range, as appropriate. The maternal near-miss prevalence was calculated as the number of maternal near-miss cases divided by the total number of deliveries during the study period and expressed as a percentage. Maternal near-miss cases per 1,000 deliveries were also calculated. A p-value of <0.05 was considered statistically significant wherever applicable.

Ethical Considerations: As this was a retrospective study based on hospital records, patient information was collected from available medical records while maintaining strict confidentiality and anonymity. No identifying information of the patients was disclosed during data analysis or reporting. The study was conducted in accordance with institutional ethical principles and applicable guidelines.

Results

During the 24 months of the study period, 4066 deliveries occurred at the institution and 72 women were identified as near-miss obstetrical cases . The prevalence of near-miss case in this study was 1.78%.

Near-miss per 1000 delivery were 18. The leading causes of maternal near miss were hemorrhage (39%) and hypertensive disorder of pregnancy (30%).

"The median age of women with maternal near miss was 27 years (range: 18–40 years). Twenty women (27.8%) were nulliparous, while the majority (37/72, 51.4%) had parity 1–2." At Sanjay Gandhi Memorial Hospital, Mangolpuri, Delhi., 75 % of near-miss incidents were not booked. The highest rate of near-misses occurred in the third trimester and postpartum period, with a lower rate observed in the second trimester.40 % of the cases were transferred from other hospitals for critical care in the ICU or HDU. Upon arrival at the hospital, 52% of the cases were classified as critical.

Table 2: showing Primary disorders causing maternal near-miss

Disease	**Near Miss(n)**
Haemorrhage	29
Early pregnancy	
Ectopic	3
Abortion	4
Late pregnancy	
Rupture uterus	7
Placenta previa	4
PPH	11
Hypertension	22
Eclampsia	13
Severe preeclampsia	9
Sepsis	11
severe anaemia	9
other cause	1

Table 3: showing near miss cases according to parity

Parity	**Near-miss cases**
0	20
1 to 2	37
3 to 4	5
>5	10

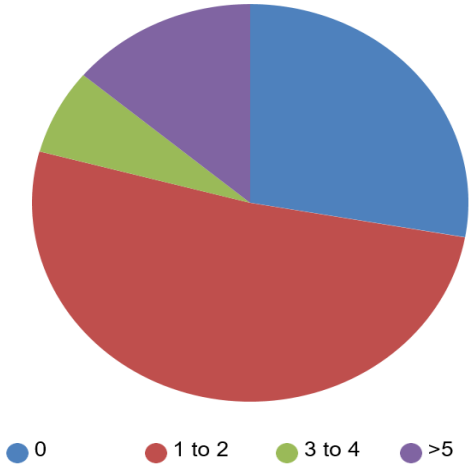

Figure 1: Near-miss cases according to parity

Table 4: showing MNM percentage for booked and unbooked patient

Booking status	-
unbooked	54(75%)
booked	18(25%)

Table 5: showing MNM percentage for booked and unbooked patient

Gestational age (weeks)	
< 13	12 (17%)
13-28	6 (8%)
>28 + Postpartum	40+14 (75%)

Discussion

Three delays are identified as one of the primary causes of inadequate obstetric emergency care in India. The first issue is a lack of awareness, which causes delays in accessing health care services. The second delay stems from limited access to health care facilities, inadequate transport, high costs, and occasionally socioeconomic challenges.

The third delay stems from inadequate care at the health care center, slow diagnosis or decision-making, or insufficient resources and trained health care providers. We determined that the first and second delays were the primary cause of high mortality and morbidity. A review conducted by Visi and Akoijam found that most near-misses resulted from delays in deciding to seek medical care. Most of them were unbooked and came from lower socio-economic backgrounds and were also illiterate [6].

In our study, hemorrhage and hypertensive disorder in pregnancy were the leading cause of morbidity and mortality followed by sepsis and severe anemia. Rulisa et al. showed that the most common cause of MNM was peritonitis, hypertensive disorder in pregnancy, and hemorrhagic diseases [7].

Posptartum hemorrhage and eclampsia constituted the major complications among the hemorrhagic disease group and in the hypertensive disease group.

Table 6:

Author	**Setting**	**Criteria for near miss**	**Near miss conditions**
Roopa PS et al. 2013 [8]	Tertiary care hospital, Manipal	Disease-specific management based	Hemorrhage (44.2%)
Bakshi et al. 2015 [9]	Mutlicentric trial, Dehradun	Disease-specific	Sepsis (58.8%)
Rathod et al. 2016 [10]	Tertiary care center, Yavatmal	Organ dysfunction	Hemorrhage (26.7%)
Tallapureddy et al. 2017 [11]	Medical college, Hyderabad	Disease-specific management based	Hemorrhage (40.5%)
Mansuri et al. 2019 [12]	Medical college, Indore	Organ dysfunction	hypertension
Verma et al. 2020 [13]	Tertiary care hospital, Etowah	Disease-specific	Hypertension (45.7%)
Our study 2026	Sanjay Gandhi Memorial Hospital, Mangolpuri, Delhi	Disease-specific	Hemorrhage (39%)

Haemorrhage was the leading cause of maternal near miss in the present study, accounting for 39% of cases. A similar predominance of haemorrhagic complications was reported by Roopa et al. (44.2%) and Tallapureddy et al. (40.5%). Rathod et al. also identified haemorrhage as an important contributor to maternal near miss (26.7%).

In contrast, Verma et al. reported hypertensive disorders as the predominant condition. These variations may reflect differences in referral patterns, patient characteristics, case definitions, and availability of emergency obstetric services across study settings [8,10,11,13].

Conclusion

Haemorrhage and hypertensive disorders of pregnancy were the leading causes of maternal near-miss events, followed by sepsis and severe anaemia. Review of maternal near-miss cases provides valuable information regarding gaps in obstetric care and may help guide measures to reduce severe maternal morbidity. Strengthening emergency obstetric services, ensuring timely referral, improving access to blood and blood products, and maintaining appropriate high-dependency care with a trained multidisciplinary team may contribute to improved maternal outcomes.

References

1. WHO (2011)- Evaluating the quality of care for severe pregnancy complications: The WHO Near Miss Approach for maternal health. World Health Organization.
2. Geller SE, Rosenberg D, Cox S, Brown M, Simonson L, Kilpatrick S. (2004) A scoring system identified near-miss maternal morbidity during pregnancy. J Clin Epi. 57:716-20.
3. Purandare C, Bhardwaj A, Malhotra M, Bhushan H, Chhabra S, Shivkumar P: Maternal near-miss reviews: lessons from a pilot programme in India. BJOG. 2014, 121 Suppl 4:105-11. 10.1111/1471-0528.12942
4. Tura AK, Scherjon S, Stekelenburg J, van Roosmalen J, van den Akker T, Zwart J: Severe hypertensive disorders of pregnancy in eastern Ethiopia: comparing the original WHO and adapted sub-Saharan African maternal near-miss criteria. Int J Womens Health. 2020, 12:255-63. 10.2147/IJWH.S240355.
5. Pattinson R, Say L, Souza JP, Broek Nv, Rooney C: WHO maternal death and near-miss classifications. Bull World Health Organ. 2009, 87:734. 10.2471/blt.09.071001.
6. Visi V, Akoijam BS: A review of maternal near miss cases in selected hospitals in North-East India . Indian J Community Med. 2021, 46:421-4. 10.4103/ijcm.IJCM_476_20
7. Rulisa S, Umuziranenge I, Small M, van Roosmalen J: Maternal near miss and mortality in a tertiary care hospital in Rwanda. BMC Pregnancy Childbirth. 2015, 15:203. 10.1186/s12884-015-0619-8.
8. Ps R, Verma S, Rai L, Kumar P, Pai MV, Shetty J: "Near miss" obstetric events and maternal deaths in a tertiary care hospital: an audit. J Pregnancy. 2013, 2013:393758. 10.1155/2013/393758
9. Bakshi RK, Aggarwal P, Roy D, Nautiyal R, Kakkar R: Indicators of maternal 'near miss' morbidity at different levels of health care in North India: a pilot study. Bangladesh J Med Sci. 2015, 14:254-7. 10.3329/bjms.v14i3.18453
10. Rathod AD, Chavan RP, Bhagat V, Pajai S, Padmawar A, Thool P: Analysis of near-miss and maternal mortality at tertiary referral centre of rural India. J Obstet Gynaecol India. 2016, 66:295-300. 10.1007/s13224-016-0902-2
11. Tallapureddy S, Velagaleti R, Palutla H, Satti CV: "Near-miss" obstetric events and maternal mortality in a tertiary care hospital. Indian J Public Health. 2017, 61:305-8. 10.4103/ijph.IJPH_268_16
12. Mansuri F, Mall A: Analysis of maternal near miss at tertiary level hospitals, Ahmedabad: a valuable indicator for maternal health care. Indian J Community Med. 2019, 44:217-21. 10.4103/ijcm.IJCM_267_18
13. Verma V, Kanti V, Vishwakarma S, Gupta UK, Shree P: "Near-miss" obstetric events and maternal deaths in a rural tertiary care center in North India. Cureus. 2020, 12:e11828. 10.7759/cureus.11828.