

**A PROSPECTIVE STUDY ON MATERNAL NEAR MISS CASES IN TERTIARY CARE
CENTER**

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Abstract

Introduction: Pregnant women are at risk of developing complication due to illness related to pregnancy or due to aggravation of pre-existing disease. Maternal mortality is a major health concern worldwide and is also an important indicator of maternal health. Approximately 800 maternal death occur every day world wide and 50 million or more experience morbidities every year.

Materials and Methods: Govt Medical College and Hospital, Ananthapur is a tertiary care center where complicated cases from the neighboring hospitals are referred. A prospective hospital based study was conducted in the department of obstetrics and gynaecology, Govt Medical College and Hospital, Ananthapur during the period May 2022 to April 2023. A total of 482 cases were included in the study. Critically ill pregnant, laboring, post-partum and post abortable women who were admitted in Govt Medical College and Hospital, Ananthapur were studied.

Results: Out of the 482 near miss cases studied, 242 (50.2%) cases belonged to the age group 18-24 years which forms about half of the population studied. 148 (30.71%) cases belonged to 25-29 years group, 70 (14.52%) cases in 30-34 years group and 22 (4.56%) cases in 35 years and above age group. Also, 422 (87.55%) cases hailed from rural area whereas only 60 (12.45%) cases came from urban area. 262 (54.35%) cases belonged to Hindu, 194 (40.25%) cases belonged to Islam and 26 (5.39%) cases belonged to other religion. Besides that, 350 (72.61%) cases are from the lower socioeconomic status. 118 (24.48%) cases are from middle socio-economic status and 14 (2.91%) cases belonged to upper socio-economic status. 326 (67.63%) cases are literate and 156 (32.37%) cases are illiterate.

Conclusion: The large magnitude of MNM cases may be attributed to improper management of obstetric emergencies at the referring hospitals, poor referral practices, inefficient transport

system, limited availability of blood products and poor utilization of health care services at the peripheral hospitals. In our tertiary center, with the help of multidisciplinary action to all the near miss cases we can reduce maternal mortality to a great extent.

Key Words: Maternal mortality, Maternal Near Miss (MNM), post-partum.

INTRODUCTION

Pregnant women are at risk of developing complication due to illness related to pregnancy or due to aggravation of pre-existing disease. Maternal mortality is a major health concern worldwide and is also an important indicator of maternal health. Approximately 800 maternal death occur every day world wide and 50 million or more experience morbidities every year.¹

Maternal mortality ratio (MMR) in India has declined from 130 per million live birth in 2014-2016 to 122 per million live birth in 2015-2017, with reduction of 6.2% in two years.² To reduce MMR further and to achieve millennium development goals (MDG)-5, Maternal near miss estimates can be considered as a valid proxy for maternal death. Once, severe maternal morbidity precedes maternal death, the systematic identification and study of near miss cases provide further understanding of determinants of maternal mortality.³

According to WHO, maternal near miss is defined as “a woman who nearly died but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy”.^{4,5} The study of near miss cases has also been used to evaluate the quality of obstetrical care, leading to improved understanding of cases of maternal death, since survival in near miss cases occur mainly because of care available.

MATERIALS AND METHODS

Govt Medical College and Hospital, Ananthapur is a tertiary care center where complicated cases from the neighboring hospitals are referred. A prospective hospital based study was conducted in the department of obstetrics and gynaecology, Govt Medical College and Hospital, Ananthapur during the period May 2022 to April 2023. A total of 482 cases were included in the study. Critically ill pregnant, laboring, post-partum and post abortable women who were admitted in Govt Medical College and Hospital, Ananthapur were studied.

Inclusion criteria: In this study, Maternal Near Miss Operational Guidelines December 2014 was used for identification and inclusion of cases.

According to maternal near miss operational guidelines 2014, for diagnosis of near miss cases, the patient should meet minimum three criteria: one each from 1) clinical findings (either symptoms or signs), 2) investigations and 3) interventions done or any single criteria which signifies cardio respiratory collapse.

It could be either 1.1 pregnancy specific obstetric and medical disorders which includes hemorrhage, sepsis, hypertension, postpartum collapse, liver dysfunction or cardiac dysfunction. 1.2 Preexisting disorders aggravated during pregnancy which includes anemia, respiratory dysfunction, cardiac dysfunction, respiratory dysfunction, hepatic dysfunction, endocrinal disorders like diabetic ketoacidosis or thyroid crisis, neurological dysfunction and renal dysfunction. 1.3 Incidental or accidental causes in pregnancy which includes accident, anaphylaxis, infections, embolism and infraction

Exclusion criteria

- Patients lost to follow-up.
- Patients who leave hospital against medical advice.

RESULTS

Out of the 482 near miss cases studied, 242 (50.2%) cases belonged to the age group 18-24 years which forms about half of the population studied. 148 (30.71%) cases belonged to 25-29 years group, 70 (14.52%) cases in 30-34 years group and 22 (4.56%) cases in 35 years and above age group. Also, 422 (87.55%) cases hailed from rural area whereas only 60 (12.45%) cases came from urban area. 262 (54.35%) cases belonged to Hindu, 194 (40.25%) cases belonged to Islam and 26 (5.39%) cases belonged to other religion.

Besides that, 350 (72.61%) cases are from the lower socioeconomic status. 118 (24.48%) cases are from middle socio-economic status and 14 (2.91%) cases belonged to upper socio-economic status. 326 (67.63%) cases are literate and 156 (32.37%) cases are illiterate.

Characteristics		Number of patients	%
Age in years	18-24	242	50.20
	25-29	148	30.71
	30-34	70	14.52
	Above 35	22	4.56
Residence Status	Rural	422	87.55
	Urban	60	12.45
Religion	Hindu	262	54.35
	Islam	194	40.25
	others	26	5.39
Socio-economic class	Upper	14	2.9
	Middle	118	24
	Lower	350	72

Literacy status	Literate	326	67
	Illiterate	156	32

Table 1: Distribution of patients according to socio-demographic variables

Characteristics		No of patients	%
Booking Status	Unbooked	356	73.85
	Booked	126	26.14
Referred	Yes	404	83.12
	No	78	16.18

Table 2: Distribution of cases according to antenatal check-ups and referral

Disorder	Number	%
Pregnancy specific obstetric and medical disorders		
Haemorrhage	234	48.5
Sepsis	50	10.37
Hypertension	94	19.5
Liver dysfunction	4	0.83
Cardiac dysfunction	18	3.73
Pre-existing disorders aggravated during pregnancy		
Anaemia	64	13.28
Cardiac dysfunction	12	2.48
Renal dysfunction	4	0.83
Respiratory dysfunction	2	0.41

Table 3: Distribution of cases according to cause of near miss

Intervention	Number	%
Vasoactive drugs	214	45.24
Ventilatory support	70	14.5
Laparotomy	150	31.12
Evacuation	60	12.44
Hysterectomy	46	9.54
Dialysis	4	0.83
Blood transfusion	294	60

Table 4: Different interventions in Near miss cases

DISCUSSION

Most of the near miss cases belong to the age group of 18-24 years which coincides with the studies of Sharma P et al, and Bansal M et al. This is because most of the ladies in this part of the country get married of at an early age and also bears children early.⁶ Majority of the women were

from rural areas (87.55%) as there is lack of sufficient facilities in the health centres of the rural areas, thus most of the patients were coming to this tertiary hospital for seeking medical help whenever there is an obstetric emergency. This is in concordance with the study of Behera R et al, where 93% of the cases were from rural areas. Most (72.61%) of the women belonged to lower socio-economic status which is in concordance with the studies of Behera R et al, and Sharma P et al.

This is because our hospital is a government hospital and most of the women from poor socio-economic background come for treatment. In present study it has been seen that, 320 (66.39%) maternal near miss cases are multiparous. This is in concordance with Shrestha J et al, and Reena RP et al, where multiparous women have more association with the near miss incidence ratio.⁷ This is because multiparous women are not very anxious and they usually turn up late for investigation. Also, frequent child birth is one reason of poor health and subsequent development of near miss cases. It is also seen that most (63.9%) of the near miss cases belonged to the third trimester and almost 80% of the cases cumulatively belongs to third trimester and postpartum period. This is comparable with the studies of Kamal S et al, Anuradha J et al, and Sharma P et al where most of the cases were either of the third trimester or postpartum period.⁸

In this study, it can be seen that most of the near miss cases have antenatal check-ups less than 4. This is in concordance with the studies conducted by Sharma P et al, Behera R et al, and Kamal S et al. The reason for few numbers of ANCs are lack of awareness and presence of household chores because of which the women barely meet the requisites of minimum 4 ANCs.⁹

We have seen that 83.82% of the near miss cases are referred. Whereas, in the studies of Kamal S et al and Behera R et al, have found a referral rate of 60% and 61.2% respectively. The higher percentage of referral cases in our hospital is due to the fact that it is only one tertiary centre catering a very large belt and the primary health centres in the nearby areas don't have sufficient facilities to deal with high risk pregnancies.¹⁰

CONCLUSION

The large magnitude of MNM cases may be attributed to improper management of obstetric emergencies at the referring hospitals, poor referral practices, inefficient transport system, limited availability of blood products and poor utilization of health care services at the peripheral hospitals. Thus, if corrective measures are taken for the above-mentioned problems, then maternal outcome can be greatly improved by reducing the maternal near miss cases. Besides that, in our tertiary center, with the help of multidisciplinary action and providing ICU care to all the near miss cases we can reduce maternal mortality to a great extent. Though there is need for more research on severe maternal morbidity to validate these findings but a physician can definitely use these results to make some changes in the system for better management of the patients.

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