

Study of Factors Related to and Limitations in Facilities Provided to Near Miss Pregnancies Attending Obstetrics Department in Our Institution

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Abstract: ***Objectives:** To study factors related to near miss pregnancies in our setting. To study limitations in facilities provided to near miss pregnancies in our setting. **Materials and Methods:** This observational study was carried out in department of Obstetrics and Gynaecology, in our institute, enrolling 100 consecutive subjects with near miss admitted to labour room and obstetrics intensive care unit of our institute, over a period of around 1 year from December 2014-June 2015. As per the WHO criteria, all pregnant women with high risk condition were selected; all their details entered in standard proforma, effective interventions were recorded. **Conclusion:** Maximum cases of maternal near miss were found in subjects with age group of 20-30 years, who were illiterate, below poverty line, with gestational age of 22-34 weeks without any prior ANC visits with multi organ disorder mainly haematological. **Results:** Out of 100 near miss pregnancies majority of them had hematological disorder, who were survived with effective intervention (appropriate and adequate transfusion of blood products and ICU monitoring*

1. Introduction

Maternal Near Miss: A woman who survived life threatening conditions during pregnancy, abortion and child birth or within 42 days of pregnancy termination irrespective of receiving emergency medical/surgical intervention is called Maternal Near Miss.

Maternal mortality is a critical indicator to assess the quality of services provided by a health care system. The standard indicator for measuring it is the Maternal Mortality Ratio (MMR), defined as the ratio of the number of maternal deaths per 100,000 live births. Globally there has been decline in MMR, in India too this is declining steadily due to the additional efforts and resources put under NHM for improving health care. There is a need to further accelerate this decline for achieving our national and international goals and targets under them. It is well known that complications during pregnancy and child birth can occur at any point of time, and it is important to ensure that readiness in terms of infrastructure, HR, equipment etc. for timely management of complications are available at all the basic and emergency obstetric care health facilities. If such complications are not managed on time they can become fatal. The Maternal Death Review guidelines launched by Government of India is a tool available with health managers and policy makers at various levels to critically look at health system performance, identify gaps and initiate corrective steps through convergent action.

2. Objectives

To study factors related to near miss pregnancies in our setting. To study limitations in facilities provided to near miss pregnancies in our setting.

3. Materials and Methods

This observational study was carried out in department of Obstetrics and Gynaecology, in our institute, enrolling 100 consecutive subjects with near miss admitted to labour room and obstetrics intensive care unit of our institute, over a period of around 1 year from December 2014-June 2015.

Inclusion Criteria

All pregnant women who fulfill WHO criteria for near miss. All patients with critical condition during pregnancy and within 24 hours of postpartum registered in our Antenatal clinic at our institute, it includes.

- 1) Cardiovascular dysfunction
- 2) Respiratory dysfunction.
- 3) Renal dysfunction.
- 4) Coagulation haematological dysfunction.
- 5) Hepatic dysfunction.
- 6) Neurological dysfunction.
- 7) Uterine dysfunction

Exclusion Criteria

All pregnant women attending NCHS without following dysfunction.

- 1) Cardiovascular dysfunction.
- 2) Respiratory dysfunction.
- 3) Renal dysfunction.
- 4) Coagulation haematological dysfunction.
- 5) Hepatic dysfunction.
- 6) Neurological dysfunction.
- 7) Uterine dysfunction

- Case identification as per the criteria. (all pregnant women with high risk condition attending OBGYN department of NCHS during one year period)
- All the details collected of patients (Biodata, chief complaints, O/H, P/H, F/H, general examination,

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systemic examination, intervention, factors that not provided to patients)

- All the details of the patients collected in a proforma
- The intervention that saved the mother is recorded

Advantages of investigating near miss events;

- Near miss cases are more common than maternal deaths
- The major reasons and causes are the same for both MNM and MDR, so review of MNM cases is likely to yield valuable information regarding severe morbidity, which could lead to death of the mother, if not intervened properly and in time.
- Investigating the instances of severe morbidity may be less threatening to providers because the woman survived.
- One can learn from the women themselves since they survived and are available for interview about the care they received.
- All near misses should be interpreted as free lessons and opportunities to improve the quality of service provision.

4. Indicators for Monitoring¹

- 1) Total Number of MNM cases in the reporting month
- 2) MNM cases reviewed by CMHO
- 3) Out of total MNM cases indicate the number against following complication:
 - a) PPH
 - b) Eclampsia
 - c) Anemia
 - d) Septic Abortion
 - e) others
- 4) Type of gaps identified after review
- 5) Status of corrective action taken for the gaps identified

5. Observation and Discussion

Table 1: Age

AGE	N=100	Percentage
<20 years	01	1%
20-30 years	94	94%
>30 years	05	5%

Majority of subjects in present study i.e. 94% were between 20-30 years. Those below 20 years out of 100 subjects were 1% (reflecting the lower age of the mother at the time of the first conception in our population)

Table 2: Education

Illiterate	61	61%
Literate up to 5th Class	36	36%
6th-12th Class	03	03%
>12th Class	00	0%

Majority of the subjects (61%) were illiterate. Out of 100 subjects, 3 subjects are educated between 6th-12th class, 36 subjects were literate up to 5th class. No one out of these subjects was literate beyond 12th class.

Table 3: Parity

0	32	32%
1-2	54	54%
2-3	10	10%
>3	04	04%

We analysed the distribution of our subjects with respect to their parity. Majority of the subjects 54% were in the range of 1-2 parous state. Out of 100 subjects, 32% were nulliparous, 10% were ranging between 2-3 and 4% were showing >3 parity.

Table 4: Type of Admission

Self	57	57%
Referral	43	43%

Out of 100 subjects, 57% subjects were self-admitted while 43% were referred to our institute.

Table 5 (Socioeconomic Status)

BPL	71	71%
NOTBPL	29	29%

Out of 100 subjects, 71% are below poverty line and 29% are not below poverty line.

Table 6 (Underlying Disorder during Admission)

1. Hemorrhage	20	20%
2. Infection	15	15%
3. Hypertensive Disorder	30	30%
4. Labour Related Disorder	03	03%
5. Medical Disorder	62	62%
6. Incidental/ Accidental Cause	00	00%

We analysed the distribution of our subjects with respect to their condition which represented their underlying disorders at time of admission.

Majority of the subjects out of 100 subjects had a medical disorder (Non Obstetric causes) that was about 62%.

In that, subjects with anaemia were of 67.74%.

6.45% subjects had been suffering from heart disease and 4.84% subjects had been suffering from lower respiratory tract infection.

None of them had diabetes.

In our study, 30% of subjects were having hypertensive disorders of pregnancy.

Amongst this, 53.33% were having eclampsia, 36.67% were having pre-eclampsia, 6.67% were having gestational hypertension and 3.83% had other conditions.

In our study, 20% of subjects were having haemorrhagic conditions.

Out of this, 40% were having placental abruption, 40% were having postpartum bleeding, 15% were having placenta praevia, 5% were having abortion history.

There was no incidence of Ectopic pregnancy, Gestational Trophoblastic Disorder, Late pregnancy, bleeding disorders other than placental causes and intrapartum bleeding in the study.

In our study, 15% of subjects were having infective etiology.

Out of this, 46.67% had postpartum causes, 20% were having antepartum causes, 20% were having intrapartum causes while 13.33% had post-abortal causes.

In our study, 3% of subjects were having labour related disorders.

Out of this, 66.67% were having retained placenta and 33.33% were having prolonged/obstructed/rupture uterus.

There was no incidence of inversion of uterus and others.

Comparison of near miss pregnancies between present study and Rulisa et al study 2012(Africa) in relation to the underlying condition at time of admission as under.

So the subjects with haemorrhage and hypertensive disorder of pregnancy in both the studies were comparable.

So majority of the subjects in our studies were anaemic while subjects with sepsis were comparable with adeoye et al study 2007 (Nigeria)

This shows that in present study majority of the subjects were with haematological disorder.

Table 7: Antenatal Period (ANC visit)

Yes	46	46
If Yes type of care provider		
Nurse	05	10.87%
Medical Officer	23	50%
Specialist	17	36.95%
Others including privet sector	01	2.17%
No	34	54%

We analysed the distribution of our subjects with respect to their antenatal period details.

In this study, 54% subjects did not receive any ANC visits.

46% subjects received ANC visits- out of which, 50% received it from medical officer, 36.95% received it from specialists, 10.87% received it from nurses while there were 2.17% subjects who received it from others.

6. Discussion

Majority of the subjects who reached with severe illness did not receive the ANC visits which were essential for prevention and early diagnosis of pregnancy related disease and complications.

Table 8: Positive Clinical Findings

General	89	89%
CNS	29	29%
CVS	63	63%
RS	08	08%
Abdominal Findings	35	35%
Hematological	72	72%
GUT	24	24%
Immune	01	01%

We analysed the distribution of our subjects with respect to their clinical findings.

Majority of the subjects that is 89% had positive general findings.

72% had positive haematological findings, 63% had positive cardiovascular findings, 35% had positive abdominal findings, 29% had positive central nervous system findings, 24% had positive genitourinary findings, 8% had positive respiratory findings and 15 had involvement of the immune system.

Majority of the subjects had disorders related to haematological system

Table 9: Interventions

ICU Admission	60	60%
Blood Products Transfusion	62	62%
MgSO4/Mannitol	27	27%
Resuscitation	01	1%
Others	12	
Internal iliac ligation	02	
Mechanical ventilation	07	
Central line insertion	02	
Pleural Tapping	12	01

So majority of the patients received ICU care and transfusion of blood products in present study.

Comparison with various studies

Name of Study	Criteria	Study Result	Present Study Result (n=100)
De saude et al (n=255)	Maternal near miss ratio	56	39
Rulisa et al (n=192)	Age (20-30 yrs)	77.6%	94%
De saude et al (n=255)	Education	43.2%	3%
Rulisa et al (n=192)	Socio-economic status	77.6%	71%
Adeove et al (n=75)	Referral	47%	43%
Kalra et al (n=112)	Parity	48.2%	54%
Kalra et al (n=112)	Gestational age	53.5%	33%
Rulisa et al (n=192)	Hypertension	28.6%	30%
Rulisa et al (n=192)	Haemorrhage	30%	20%
Adeove et al (n=75)	Anaemia	14.6%	42%
Adeove et al (n=75)	Sepsis	14%	15%
De saude et al (n=255)	Hematological disorder	4%	72%
JP souza et al (n>=200)	ICU admission	15.8%	60%
De saude et al (n=255)	Blood products transfusion	65.1%	62%
Zanette et al	Mechanical	2.83%	7%

(n=5488)	ventilation		
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7. Conclusion

Maximum cases of maternal near miss were found in subjects with age group of 20-30 years, who were illiterate, below poverty line, with gestational age of 22-34 weeks without any prior ANC visits with multi organ disorder mainly haematological. Early diagnosis and critical care under ICU and adequate transfusion of appropriate blood products helped in the survival of majority of our near miss pregnancies thereafter preventing their maternal mortality in our setting.

So it is important to improve health care services to create awareness of healthcare providers and patients regarding early warning signs of high risk pregnancies and maternal near miss and thereby intervene at appropriate time in near miss pregnancies to prevent maternal mortality.

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