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STUDY OF MATERNAL NEAR MISS CASES AT A TERTIARY CARE HOSPITAL AT AHMEDABAD

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ABSTRACT

BACKGROUND: Maternal mortality has always been an indicator of health status of a country. Near miss is a serious adverse event that leads to morbidity in the mother, but from which she survives. Transfusion of blood and blood product (40%) and ventilator support (32.22%) main intervention in management of near to miss case.

METHODS: This was a prospective observational study carried out over a period of 12 months at a Tertiary Care Institute- B.J.Medical collage Ahmedabad, Gujarat. As per WHO criteria based on primary near miss event, 90 cases were included for the study.

RESULTS: Near miss incidence ratio was 13.34 per1000 live births. Maternal near miss to mortality ratio was 1.11:1. Mortality index was 52.63%. Transfusion of blood and blood product (40%) and ventilator support (32.22%) main intervention in management of near to miss case.

CONCLUSION: Effort geared towards improvement in management of near miss morbidities would definitely go a long way in reducing the present maternal mortality ratio.

KEYWORDS : Maternal Near Miss, Pph And Eclampsia.

INTRODUCTION

Maternal mortality has always been an indicator of health status of a country .Though MMR has decrease in India, it has still not achieved targeted by MDG 2015(1). Maternal mortality is a result of a complex interaction between medical, cultural, logistic and socioeconomic factors and the prevailing healthcare infrastructure in the community. Maternal death and its rate in a year is an important indicator of healthcare in a country. Death of the mother during maternal near miss childbirth hits the backbone of the family. Family as a unit is shattered with maternal death. India contributes to 16% of the world's population and accounts for over 18% of the maternal deaths in the world. (2) The term near miss used is thought of as a case where a woman had near brush with death and with intensive medical intervention; death was avoided and turned into a survival. This term is increasingly replaced by Severe Acute Maternal Morbidity (SAMM) which refers to the morbidity a woman actually suffers.(3) The WHO has recommended investigating near miss cases as a benchmark practice for monitoring health.

OBJECTIVES

To determine the level of near miss morbidity due to severe obstetrical complications at our tertiary care hospital and to determine the most common causes of near miss in our centre.

METHOD

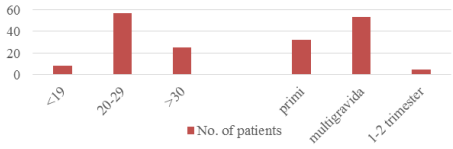
This was a prospective observational study conducted at a Tertiary Care Institute- B.J.Medical collage Ahmedabad, Gujarat from April 2018 to March 2019.Of the 8893 Obstetric admissions during study period, 7160 deliveries were conducted with 6744 live births. As per WHO criteria based on primary near miss event, 90 cases were included for the study. There were 100 maternal deaths during the study period. WHO criteria for near miss (4) (2009) was used to identify the near miss cases.

The WHO criteria identify near miss cases based on three approaches: Disease specific criteria, management based criteria and Organ dysfunction based criteria. In our study management based criteria was used to identify the near miss case.

Following indices were calculated (5)
Maternal Near Miss incidence ratio
Maternal near miss to Mortality ratio
Mortality index

RESULTS

Total 90 maternal near miss cases included in this study. Also who need admission in HDU was evaluated for various parameters. Most of the patients, 57(63.3%), were between age group of 20-29 years. 53 patients (58.9%) were multigravida.



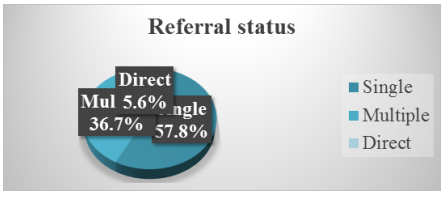
DISTRIBUTION ACCORDING TO AGE AND PARITY OF PATIENTS

Majority of the patients presenting at our centre were un-booked 69(76.7%). This clearly emphasizes the importance of booking and regular antenatal checkups.

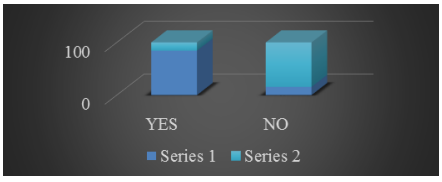
	Near to miss patient
Booked patients	21(23.3%)
Un-booked patients	69 (76.7%)

DISTRIBUTION OF BOOKED/UN-BOOKED PATIENTS WITH NEAR TO MISS

According to referral status 52(57.8%) patient refer from single and 33(36.7%) from multiple centre while 5(5.6%) from direct admission.



Majority of the patients, 76(84.44%) presented to our centre with complications and for further management, while the rest 14(15.55%) developed complication on further management of case in our setup.



DISTRIBUTION ACCORDING TO NEAR TO MISS ON ARRIVAL REASON FOR BEING CLASSIFIED AS NEAR TO MISS

	Number-90	Percentage
Severe preeclampsia	29	32.2
Hypovolemia necessitating >units of transfusion of blood & blood products	41	45.6

Emergency hysterectomy	9	10.0
Heart failure	6	6.7
Surgical intervention	5	5.6

According to near miss, 41(45.6) % patient need blood and blood products transfusion and 29(32.2) had severe preeclampsia.

INTERVENTION FOR PATIENT WITH NEAR TO MISS

Intervention	
Ventilator support	29 (32.2)
Surgical intervention	14 (15.6)
Transfusion of blood & blood products	36 (40.0)
Anti-hypertensive	11 (12.2)

Transfusion of blood and blood product (40%) and ventilator support (32.2%) main intervention in management of near to miss case.

THE MOST COMMON ADVERSE EVENT ASSOCIATED WITH NEAR TO MISS

Adverse event	Number	Percentage
Haemorrhage	35	38.9
Hypertension	13	14.4
Eclampsia	27	30.0
Anaemia	10	11.1
Cardiac	5	5.6

Haemorrhage (38.9%) most common adverse event associated with near miss followed by eclampsia (30.0%) and hypertension (14.4%).

MAJOR INDICATIONS FOR TRANSFER TO HDU CARE:

Reason for admission	Number	Percentage
Neurological dysfunction	6	6.7
Circulatory collapse	42	46.7
Need for intravenous anti-hypertensive	24	26.7
Spo2 desaturation	11	12.2
Anti-failure measures	7	7.8

Circulatory collapse (46.7%) major indication for transfer to HDU followed by intravenous anti-hypertensive(26.7).

DISCUSSION

For monitoring the level of obstetric healthcare, WHO recommends investigating near miss cases as a benchmark practice in addition to MMR.

Maternal death audits form the mainstay of evaluation of maternal health services in developing countries where high level of maternal mortality has overshadowed severe obstetric morbidity.

In our study, most common age group involved was between 20-25 years. In similar study by Pandey et al,(6) majority (88.3%) were between 18-35 years age whereas Singh Abha et al(7) reported 21-30 years as the most common age group involved.

Significantly high rate of obstetric emergencies have been reported in multigravida in various studies which was also seen in our study.

Out Of the 8893 obstetric admissions during study period, 7160 deliveries were conducted with 6744 live births. There were100 maternal deaths during the study period.

- Near miss incidence ratio was 13.34 per1000 live births.
- Maternal near miss to mortality ratio was 1.11:1.
- Mortality index was 52.63%, in our study high mortality index was due to the fact that our centre is the only tertiary care referral centre in the region and most of the patients reached hospital in critical state, out of all the near miss cases only 14(15.55%) were stable.

Apart from anaemia & multiple pregnancies, higher incidence of complications in multigravidas could be due to higher incidence of placenta praevia and accreta and higher incidence of rupture uterus in multigravida.

Patients presented to our centre with various complications. Most common complication for referral in our study was PPH followed by eclampsia.

We had a higher rate of ICU admission in our study due to the fact that most of the patients were brought in critical state/de-compensated shock & needed ICU for stabilisation.

The most common cause of maternal near miss in our study was haemorrhage, On comparing our results with other studies, causes were found to be similar while hypertension was the leading cause in study by Singh Abha (2015) while Haemorrhage was leading cause in study by Rathod(2012).

CONCLUSION

Effort geared towards improvement in management of near miss morbidities would definitely go a long way in reducing the present maternal mortality ratio.

From the finding of this review, attempts to reduce maternal deaths may best be achieved by developing evidence-based protocols for the management of severe haemorrhage and hypertension especially for critically ill referred patients

Necessary facilities should be made available and training of personnel and emergency drill should be frequently conducted to combat the identified disease processes that received suboptimal care.

Common cause of the near miss in our study was haemorrhage and severe preeclampsia / eclampsia. Our study emphasizes that timely identification of high risk factors and their treatment and timely referral of high risk patients can play a major role in preventing maternal mortality and morbidity.

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