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PROSPECTIVE ANALYSIS OF MATERNAL NEAR MISS CASES IN A TERTIARY CARE CENTRE

Obstetrics &Gynaecology

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ABSTRACT

Introduction – Today in the era of women empowerment young mothers are dying with devastating consequences on their children and family. Maternal Near Miss (MNM) is a better indicator of quality of health care than Maternal Death Review (MDR) system. A Maternal Near Miss case 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.

Aim & Objective- this study was conducted with the objectives to determine the frequency, to study the demographic characteristics, causes, interventions and feto- maternal outcome of the maternal near miss cases.

Our aim is to decrease Maternal Mortality.

Material & Methods - A prospective observational study was conducted in Patna Medical College & Hospital Patna from February 2018 to January 2019 . Women admitted in Labor room emergency, P.M.C.H. Patna were included in the study according to WHO inclusion criteria for MNM.

RESULT -The prevalence of MNM is higher in our part and causes are similar to those of maternal mortality namely hemorrhage (most common cause) , hypertensive disorders, Anemia, sepsis, obstructed labor etc.

Conclusion –Majority (>80%) of the obstetrical complications could be prevented or managed with a timely and proper intervention with multidisciplinary approach.As the number of Maternal Near Miss cases is more than the Maternal Deaths and the cases are alive to directly discuss about the problems and obstacles in health care delivery system.MNM is better indicator of quality of health care at all level.

KEYWORDS

Maternal Near Miss (MNM), Maternal Death Review (MDR).

INTRODUCTION–

According to WHO a Maternal Near Miss case 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.

The prevalence of near miss is higher in developing countries and causes are similar to those of maternal mortality namely hemorrhage, hypertensive disorders of pregnancy, sepsis etc. Maternal Near Miss (MNM) is a better indicator of quality of health care than Maternal Death Review (MDR) system.

The Maternal near miss approach will be an important tool in evaluation and assessment of the newer strategies for improving maternal health.

Govt. of India has introduced MNM review guideline in 2014. The MNM review is more informative as the women survived after complication, so the women and the family members are available for enquiry in the hospital itself.

The prevalence of near miss is higher in developing countries and causes are similar to those of maternal mortality namely hemorrhage, hypertensive disorders, anemia, sepsis, obstructed labor etc.

AIMS AND OBJECTIVE-

This study was conducted with the objectives to determine the frequency, to study the demographic characteristics, causes, interventions and feto- maternal outcome of the maternal near miss cases.

Reviewing near miss cases provide significant information which is useful in identifying causes of health system failure, assessment of quality of maternal health-care and measures to be taken for improving health care of women.

The ultimate aim is to decrease maternal mortality and morbidity.

MATERIALAND METHODS-

A prospective observational study was conducted in the department of OBS &Gynae, Patna Medical College & Hospital Patna, Bihar from February 2018 to January 2019. All patients according to WHO inclusion criteria for maternal near miss were included in the study.

In 2009, World Health Organization (WHO) has developed new system based on organ system dysfunction which incorporates-

- clinical,
- laboratory and
- management based criteria for identifying maternal near miss.

OBSERVATION &RESULT-

Table I Labor Room Data From February 2018 to January 2019

Total admission	8387
Vaginal delivery	3275
LSCS	2618
Eclampsia	218
Laparotomy	204
Maternal Near Miss	640
Maternal death	124
Total live birth	5942
MNM Ratio= 640/5942x1000=	107.70
MNM : Maternal Mortality Ratio=640/124=5.16	05.16

The above table shows that MNM Ratio is very high in our institution as cases are referred from all over Bihar & no patient is refused admission irrespective of their booking status even in moribund state.

Table-2 Primary obstetric factors in near-miss and maternal deaths. Values are given as n (%)

	Near Miss No-640	Maternal Death No-124
Hemorrhage	198 (30.93)	36(29.03)
Eclampsia & Pre-eclampsia	179 (27.96)	35 (28.22)
Severe anemia	102(15.93)	15 (12.09)
sepsis	71(11.09)	11 (8.87)
Inversion of uterus	03 (0.46)	01(0.80)
Anesthetic complications	04 (0.62)	02(1.61)
Other causes	83(12.96)	24(19.93)

As the table-2 shows Hemorrhage, Eclampsia &Pre-eclampsia, Anemia, Sepsis are responsible for about 85% cases of MNM and about 80% cases of maternal mortality.

Table -3 Summary of the organ systems dysfunction or failure

complicating maternal near-misses and maternal deaths. Values are given as number and percentage.

Organ dysfunction	Maternal near miss no.(%)	Maternal death no.(%)
Vascular dysfunction(hypovolemia)	55(37)	8(27)
Cardiac dysfunction (pulmonary oedema)	30(20)	7(23)
immunological dysfunction(sepsis)	26(18)	5(17)
Coagulation dysfunction	24(16)	3(10)
Renal dysfunction	19(13)	9(30)
Respiratory dysfunction	12(8)	16(53)
Cerebral dysfunction	7(5)	6(20)

As the above table shows hypovolemia due to hemorrhage leading to shock responsible for 37% cases of MNM.

Table-4 Anemia in relation to MNM

Status	No.of cases	percentage
Mild anemia	58	9.06%
Moderate anemia	122	19.06%
Severe anemia	448	70%
Normal Hb%	12	1.87%

As the above table shows majority (70%) MNM cases were severely anemic.

Table-5 Referral Status in relation to MNM

Referral status	No. of cases	percentage
Referred from two or more places	499	77.96%
Referred from one place	108	16.87%
Primarily admitted in PMCH	33	05.15%

The above table shows that majority of MNM cases (77.96%) were referred from two or more places thereby causing delay in reaching the tertiary care centre.

DISCUSSION-

- The MNM review is more informative as the women survived after complication, so the women and the family members are available for enquiry in the hospital itself. Govt. of India has introduced MNM review guideline in 2014. The prevalence of near miss is higher in developing countries and causes are similar to those of maternal mortality namely hemorrhage, hypertensive disorders, Anemia, sepsis, obstructed labor etc.
- In a study conducted by Rupa P S et al at Kasturba hospital, Manipal, Karnataka, the maternal near miss incidence ratio (MNMIR) was 17.8/1000 live births &the near miss to maternal mortality ratio was 5.6:1, which means for every five to six life threatening conditions there was one maternal death.
- In my study severe hemorrhage, hypertensive disorders, anemia, sepsis are the main causes of MNM (about 80%). In my study near miss to maternal mortality ratio was 5.16 and Maternal near miss ratio was 107.07 per one thousand live birth. High MNM in our institution is due to the fact that it has a vast catchment area catering poor, under privileged, rural population. All patients are admitted irrespective of their booking status. No patient is refused admission and many of patients are admitted in moribund state.
- MNM is highest (70%) in women of lower socio- economic group due to lack of education & awareness about ANC,as they are poorly nourished and anemic and conceive in pre –existing anemic state which is further aggravated by pregnancy leading to severe anemia and is the most common indirect cause of MNM.
- Anemic women are already compromised, so are not capable to withstand any further stress like APH, PPH, anesthesia , Surgery & even the stress of normal delivery. Due to poor immunity they are more prone to septicemia, Post -operative wound infection, scar dehiscence, even burst abdomen . The most common cause of MNM was hemorrhage followed by Eclampsia, severe anemia, sepsis etc.
- About 80% causes of MNM and maternal mortality can be prevented by proper ANC good education, using family planning methods , timely referral of cases to highier centre, good transport facilities, etc.
- Management of Near Miss cases with swift action,with multi-disciplenary approach, competent team work, ready availability of Blood & Blood product and above all skill of the obstetrician can prevent maternal death.
- In 0.62% cases MNM occurred due to anesthetic complication. In one case intra operative cardio-respiratory arrest occurred under spinal anesthesia while in another case (eclampsia on mgso4 regime) there was no reversal after gas anesthesia with muscle relaxant. Both patients were resuscitated and put on ventilator and could survive.
- In a study conducted by Hemakanta Devi Sarma et al, the maternal death to near miss ratio was 1 / 3.93 . Among near miss cases, 59% cases were primipara and 37.8% cases were in the age group of 15 – 20 years and most common type of near miss events were eclampsia (39.4%) whereas in my study 46.08% MNM cases were between 20 to 30 years of age and 45% cases were multipara and 35% cases were primipara. In my study most common cause of near miss was hemorrhage (30.93%) followed by hypertensive disorder of pregnancy (27.96%). So results were more or less comparable.

CONCLUSION

MNM is better indicator of quality of health care at all level.

Majority (>80%) of the obstetrical complications could be prevented or managed with a timely and proper intervention with multidisciplinary approach.

- 24 hours emergency obstetric services, 24 hour blood bank facility and surgical and medical ICU, timely referral to highier centre, good transport facility,swift action for identified problems & skilled Obstetrician can reduce the maternal deaths.
- Women education, upliftment of women in the society, good nutrition of women and adolescent girls, awareness about importance of ANC, screening of high risk cases are important step towards lowering maternal mortality.

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