

A Study of Near Miss Cases in Obstetrics in Government Medical College, Kadapa.

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ABSTRACT:

Maternal near miss data is invisible and is very important to reduce the maternal mortality.

The aim of this study is to determine the incidence and etiology of near miss events.

This prospective observational study is done at Govt. Medical College, Kadapa from September 2020- August 2021. The data is collected from obstetrics emergency patients. The incidence ratio, etiology, and timings of these near miss events are analyzed. Of the 19 maternal near miss cases with an incidence ratio of 2.9 per 1000 live births, hypertensive disorders of pregnancy are the most common cause of near miss events accounting for (42.1%), followed by obstetrics hemorrhage (31.5%), perforation of uterus (10.5%), while rupture uterus (5.2%), sepsis (5.2%), and anemia (5.2%), are of same proportion. 31.5% of the near miss events occurred in postpartum period (31.5%) followed by 3rd trimester (21.0%) & post abortal (21.0%) period. The 2nd trimester has (15.7%) cases, and 5.2% during the intrapartum period.

An awareness of near miss events helps us to know its leading causes, take appropriate preventive measures and decrease maternal morbidity & mortality.

Key words: maternal near miss, maternal mortality, postpartum.

Date of Submission: 25-09-2021

Date of Acceptance: 08-10-2021

I. INTRODUCTION:

A WHO working group in 2009, defined maternal near miss is as ‘‘very ill pregnant or recently delivered women who nearly died but survived a complication during pregnancy, child birth or within 42 days of termination of pregnancy¹. MNM incidence ratio (MNMIR) refers to the number of maternal near miss cases per 1000 live births (MNMIR=MNM/1000 live births). Knowing the causes for maternal near miss and analyzing the modes of treatment which followed to save the life of pregnant women is an important tool to reduce the maternal mortality.

The world health organization (WHO) proposes a maternal near miss approach to monitor and improve obstetrics care. Near miss audits have become a part of ongoing monitoring system. In 2009, WHO has come up with clinical laboratory, and management criteria for the identification of these cases.²

Near miss cases share many characteristics with maternal death and can directly inform obstacles that have to be overcome after the onset of an acute complication corrective actions for identified problems can be taken to reduce mortality & long-term morbidity.³ The causes of near miss vary on different geographical areas of the world and also there are variations within countries.^{4,5} Near miss cases & maternal deaths together are referred to as severe maternal outcome (SMO)⁶ using the disease specific criteria the prevalence of near miss has been reported to be between 0.80% and 8.23%⁷

Our study aims to determine the frequency of maternal near miss incidence ratio and also to know the etiology of these near miss events.

II. Materials & Methods:

This prospective observational study was done at Government Medical College, Kadapa in the department of obstetrics from September 2020 to August 2021 for period of one year. The data was collected from obstetrics emergency patients who fell under near miss criteria according to WHO⁸ were included in the study.

Detailed history of patients like name, age of patient, date of admission and presenting complaints was recorded. Obstetrics history, including history of previous pregnancy, complaints during present pregnancy, past & present medical problems were also recorded.

A written informed consent from all patients & institutional ethics committee was taken before starting the present study.

III. Results:

During the study period 6534 were total live births, 19 were total near miss cases. So maternal near miss incidence ratio is 2.9 per 1000 live births.

Table 1: A table showing the age group and incidence

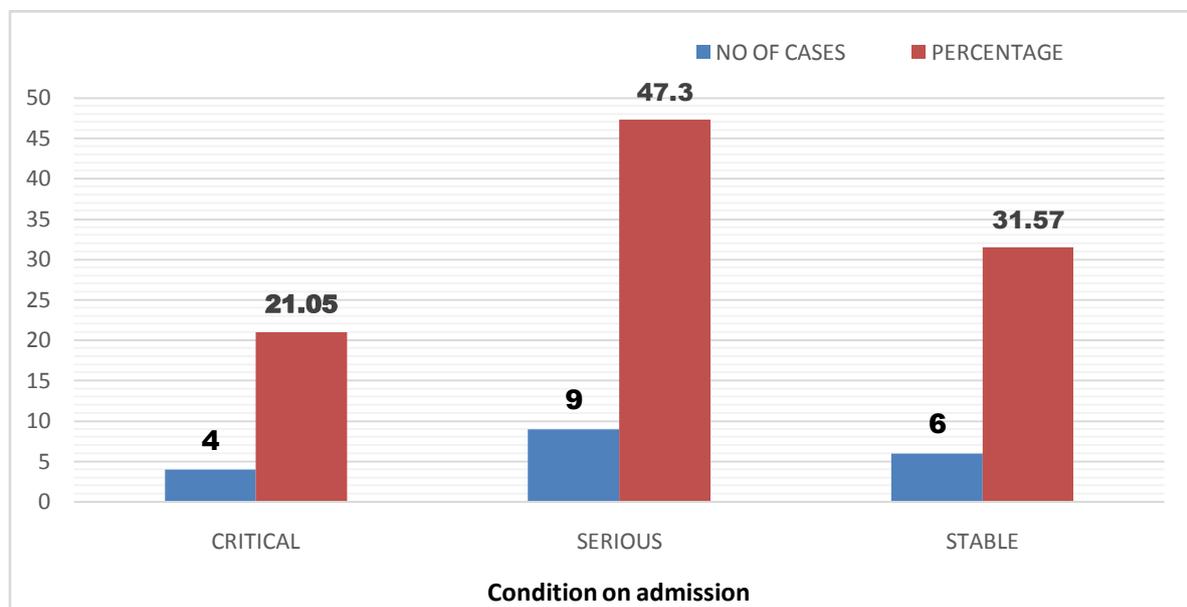
S. NO	AGE	NUMBER	PERCENTAGE
1	<20 YEARS	2	10.5 %
2	21-30 YEARS	12	63.2%
3	>30 YEARS	5	26.3 %
4	TOTAL	19	

Out of 19 near miss cases, most of them 12(63.1%) belong to age group of 21- 30 years, followed by 5 (26.3%) of age more than 30 years & only 2 (10.5%) were of age less than 20 years.

Table2: Atable showing near miss numbers & causes

SNO.	CAUSES	NUMBER	NEAR MISS / 1000 LIVE BIRTHS
1.	Hypertensive disorders of pregnancy	8	1.2
	a. Severe preeclampsia	7	—
	b. eclampsia	1	—
2.	Severe obstetrics hemorrhage	6	1
	a. Early pregnancy	1	—
	b. ectopic	2	—
	c. Ante partum hemorrhage	1	—
	d. Postpartum hemorrhage	2	—
3.	Rupture uterus	1	0.15
4.	Perforation uterus (post abortal)	2	0.3
5.	Sepsis	1	0.15
6.	Severe anemia	1	0.15

Hypertensive disorders of pregnancy are the most common cause 8 (42.10%) followed by obstetrics hemorrhage 6 [31.57%] in number, of which (2 cases are due to ectopic pregnancy, 1 case is interstitial pregnancy and covid positive, hemorrhage not controlled. So proceeded to hysterectomy. 1 case was placenta previa.) 2 cases are due to postpartum hemorrhage for which peri partum hysterectomy was done. 1 (5.2%) case was due to rupture uterus, 2 (10.5%)cases are due to perforation uterus, 1 case with bowel injury with sepsis for



which emergency laparotomy was done. 1 (5.2%) case was due to severe anemia.

FIGURE1: Bar diagram showing condition on admission.

Among 19 near miss cases, 9 (47.3%) cases admitted in serious condition of which 4 (21.05 %) are connected to noninvasive ventilation (CPAP). 6 cases are in stable condition. 4 are admitted in Critical condition of which 3 cases (15.7%) are intubated and connected to mechanical ventilation.

Table 3: A table showing timing of near miss events

S NO	TMING OF NEAR MISS	NUMBER
1.	1 ST TRIMESTER	1
2.	2 ND TRIMESTER	3
3.	3 RD TRIMESTER	4
4.	INTRA PARTUM	1
5.	POST PARTUM	6
6.	POST ABORTAL	4

Most of near miss events 31.5 % occurred in postpartum period as shown in table 3 that was followed by 3rd trimester and post abortal of 21.0%, 15.7% in 3rd trimester.

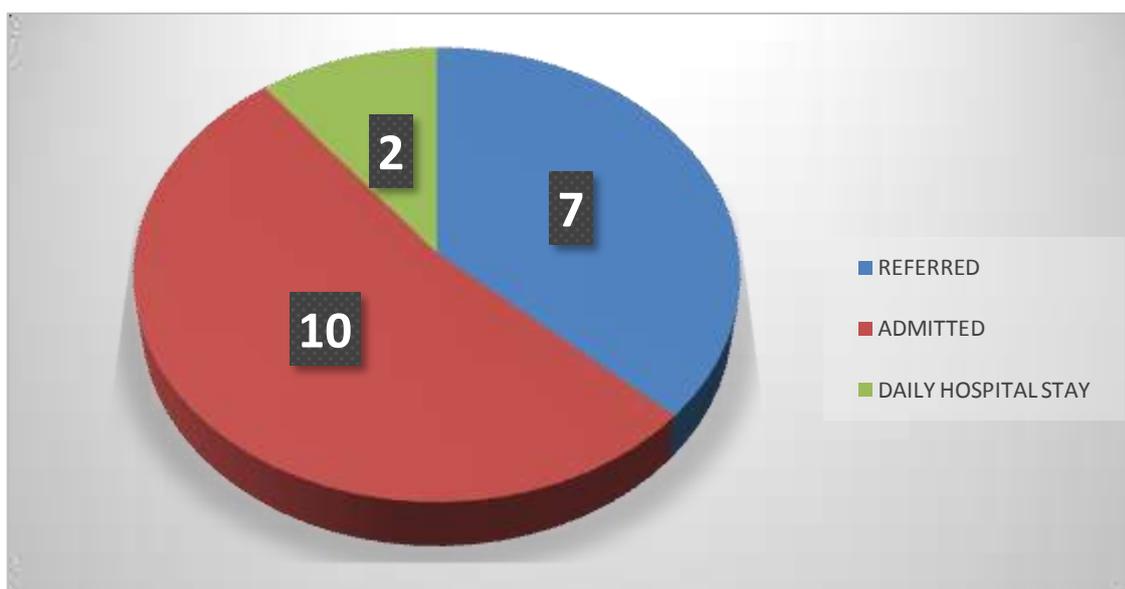


Figure 2: A pie chart showing the registration status at the time of near miss.

52.6 % (n=10) presented as a near miss at the time of admission, 7 are referred from other centers 2 cases (10.5%) of them developed near miss event during their stay in the hospital.

IV. Discussion:

Near miss cases generally occur more frequently than maternal deaths and therefore a more relative quantitative analysis can be carried out which can provide a more comprehensive profile of health system functioning. Identification of the obstacles and gaps in the health system and a coordinated approach to resolve these can ultimately lead to an improved health system. Different studies from India and other developing and developed countries have reported prevalence of near miss of 8.2 %, 10.1 % and 14.1% respectively.

The major causes of potentially life threatening conditions and near miss cases were hypertensive disorders of pregnancy (42.1%) and obstetrics hemorrhage (31.57%) findings that are comparable to those of other studies in low resources countries ^{6,9}, Severe pre- eclampsia was the main diagnosis associated with near miss coinciding with the findings Brazilian study¹⁰, and to the study conducted in 2003-2004 in sagamu,nigeria,olufemiT oladapo et al where hypertensive disorders and hemorrhage accounted for most of the near miss cases i.e. 35.4% and 26.1 % respectively.

However, it differs from the studies conducted in developed countries where hemorrhage is ranked first ¹¹and also in the study of Adisasmitha et al.¹²in Banten, Indonesia in 2003 – 2004 observed that hemorrhage was the most common diagnosis of 694 patients with an incidence of 42.35% with hypertensive disorders as second leading cause with an incidence of 21.75 %.

A higher rate of preterm delivery was found in the group with near miss cases. it may have affected by the greater number of admissions due to to severe preeclampsia /eclampsia a situation in which premature interruption of pregnancy is more common.

Sepsis occurred in 5.2 % of patients but in another study this result was 23.7%.

Although the sepsis is not one of the most frequent complication many studies consider it to have a higher mortality rate (7.4 %) surpassing hemorrhage (2.8 %) and hypertensive disorders.

Sepsis was due to the curettage done for 1st trimester abortion at peripheral center came with perforation of uterus with bowel injury for which emergency laparotomy was done & rent repair with bowel repair done.

In the present study we found that evaluating the diseases process at an early stage and then early referral from the primary health care level is of utmost important to save life of both the baby and mother. In addition, given the high occurrence of preeclampsia within the study population, management indicators specific to this condition might be integrated.

V. Conclusions:

The major causes of near miss were similar to the causes of maternal mortality of India. Lessons can be learned from cases of near miss which can serve as a useful tool in reducing maternal mortality rate. Training and awareness of health workers in the community centers can prevent near miss events from the referral system and help them take appropriate preventive measures & decrease maternal morbidity and mortality.

Conflict of interest: none

Source of support: NIL

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Dr. M. Sofia Sowjanya. "A Study of Near Miss Cases in Obstetrics in Government Medical College, Kadapa." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(10), 2021, pp. 01-04.