

## Near Miss Obstetric Events & Maternal Deaths Retrospective Analytical Study from a Tertiary Care Hospital

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### I. Introduction :

•**High-risk Pregnancies** comprises about 1/3<sup>rd</sup> to 1/4<sup>th</sup> of total pregnancies and are likely to cause maximum number of Maternal Morbidity and Mortality. Further there may be complications of pregnancy or delivery itself requiring admission to intensive care unit

•**Maternal Near miss<sup>1</sup>** 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

•**Maternal Death<sup>1</sup>** is defined as death of a woman while Pregnant or within 42 days of termination of pregnancy irrespective of duration and site of pregnancy from any Cause related to or aggravated by pregnancy or its management but not from accidental or incidental causes.

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#### Criteria for Near Miss Case<sup>2</sup>

##### 1. CLINICAL CRITERIA •Acute Cyanosis

- Gaspings
- Respiratory Rate >40 or <6/min
- Shock
- Oliguria not responding to fluids or diuretics
- Coagulation Disorders /Clotting Factors
- Loss of Consciousness for ≥12 hrs
- Cerebrovascular Accidents
- Unconscious ,no Pulse /Heartbeat
- Uncontrolled Convulsion/total Paralysis
- Jaundice concomitant with preeclampsia

##### 2.LABORATORY CRITERIA

- Oxygen saturation < 90% for > 60 minutes
- PaO<sub>2</sub>/FiO<sub>2</sub> < 200 mmHg
- Creatinine ≥ 300 m mol/l or ≥3.5mg /dL
- Bilirubin > 100 m mol/l or ≥ 6.0 mg /dL
- pH <7.1
- Lactate >5
- Acute thrombocytopenia (<50,000 platelets)
- Unconscious ,Presence of glucose and Ketoacids in Urine

##### 3.INTERVENTION CRITERIA:

- Use of continuous vasoactive drugs
- Postpartum or post abortion hysterectomy due to infection or hemorrhage
- Blood transfusion ≥ 5 units of red cells
- Intubation and ventilation for a period ≥ 60 minutes unrelated to anaesthesia
- Dialysis for treatment of acute renal failure
- Cardiopulmonary resuscitation (CPR)

#### AIMS AND OBJECTIVES:

•To analyze the nature of near miss events and compare the cause of near miss cases with that of maternal and maternal demortality and see the trends of near miss events and maternal deaths in 6 months.

**Materials and Methods :Material(Study population)**

230 Obstetric Patients who were admitted to Intensive Care Unit and HDU under the Department of Obstetrics and Gynaecology of King George Hospital, Visakhapatnam from December 2021 to May 2022

**II. Methodology**

- Cases of Potential Life Threatening Conditions (WHO 2009) Criteria for Near miss were selected
- Patient characteristics including Age , Parity, Gestational age at Admission , Booking Status , Modes of Delivery, ICU Admission, Duration of ICU stay, Total Hospital stay Duration and surgical intervention to save the life of mothers were considered.
- Patients were categorized by Final Diagnosis with respect to Hemorrhage , Hypertension, Sepsis, Dystocia which are considered as **Direct causes** while the **Indirect Causes** include Anemia, Thrombocytopenia and other Medical Disorders

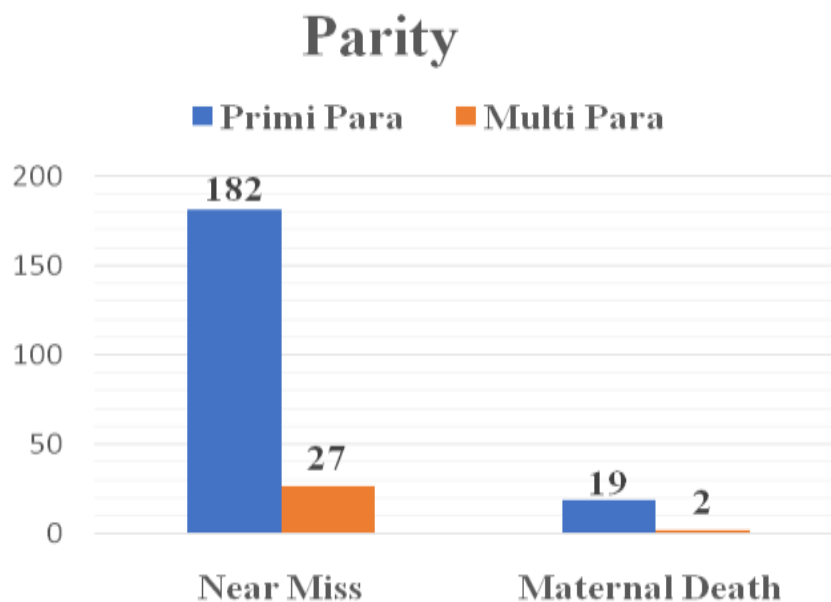
**III. Results**

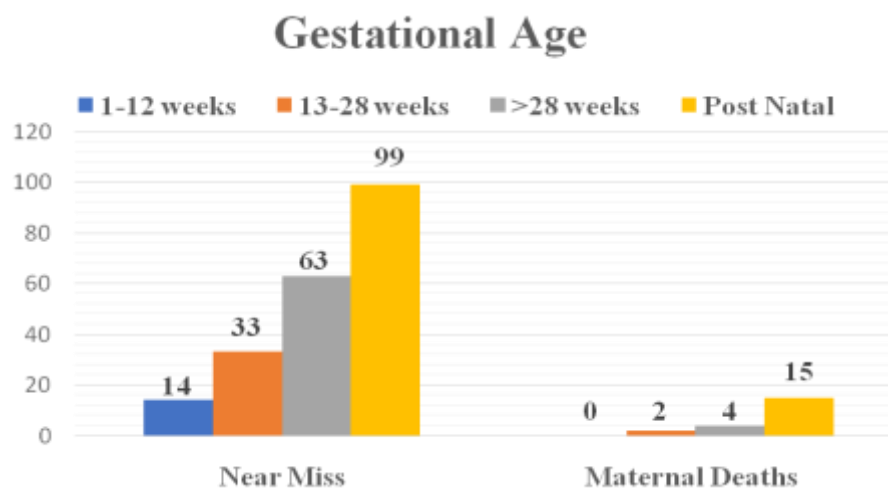
•During the study period ,a total of 4532 deliveries were conducted of which 4302 were Live births ,**209 were Near miss cases** and **21 were Maternal Deaths.**

**AGE:**

Incidence was high among  $27 \pm 4$  years.

**PARITY:**



**CAUSE WISE ANALYSIS:**

S No	Condition	Near Miss Cases	Near Miss Cases/1000 Live Births	Number of Maternal Deaths	Mortality Index
1	Severe Hemorrhage				
	i)Early				
	Ectopic	18	4.18	0	0
	Abortion	26	6.04	0	0
	ii)Late				
	Abruption	19	4.4	0	0
	PPH	35	8.13	10	4.56
2	Preeclampsia	48	11.5	6	2.79
3	Sepsis	16	3.7	1	0.47
4	Cardiac	19	4.4	2	0.94
5	Indirect	28	6.5	2	0.94

**INDICES:**

- Near miss Incidence Ratio : 48.58

- Mortality Index : 9.13

- Severe Hemorrhage (4.56) has the Highest Mortality Index followed by Preeclampsia (2.79)

- Maternal Mortality Ratio : 488 / 1 lakh Live Births

- Near miss versus Maternal Mortality Ratio :9.9:1 (Higher ratio Indicates better care)

**DISCUSSION:**out of 230 cases (near miss +maternal deaths), average age group affected were 27+- 4 in our study .

Majority affected belonging to primi gravida i.e 87%

49.5% near miss and maternal deaths were post delivery and post abortal cases followed by third trimester cases in our study group.

Hypertension complicating pregnancy was leading cause of near miss cases followed by PPH, abortion related complications.

Where as in maternal deaths , PPH was the leading cause for maternal mortality followed by Hypertension complicating pregnancy.

Maternal mortality ratio MMR was 488 per 1 lakh , this was due to short duration study and king George hospital is apex referral hospital which was attached to large tribal belt Araku ,paderu and also a referral centre for surrounding state Orissa and also from east godavari district high risk cases was being referred.

Near miss versus maternal mortality ratio was 9.9 : 1.

Higher ratio indicates better care<sup>2,3</sup>

#### IV. Conclusion:

- Hemorrhage and Hypertensive Disorders are the leading Cause of Near Miss events and Maternal Mortality.
- To improve Maternal Health, Barriers that limit access to quality maternal health service must be identified and addressed at both health system and society level.

#### References

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