RESEARCH ARTICLE

STUDY OF MATERNAL NEAR MISS CASES

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ABSTRACT

Background: This study is to identify major cause of morbidity in near miss cases and measures taken to reduce morbidity and gravid complications.
Method: 100 case of obstetrics patients with severe morbidity who survived has taken to study the cause of morbidity and interventions they have been through.
Result: 34% patients had eclampsia, sever pre eclampsia; 21% had Anemia, 25% had PPH, 8% had rupture uterus, 7% had CVS disease, 3% had renal disease, 2% had coagulation defect. 100% patients were given uterotonics and antibiotics prophylactically and therapeutically, 68% patients were given blood products, 34% had magnesium sulphate, 19% had laprotomy out of which 14 patients had hysterectomy.
Conclusion: Preeclampsia, eclampsia are the most common while anemia and hemorrhage were second most common cause.

INTRODUCTION

Maternal health is an integral part of a country's health care system.It reflects status of obstetric health in reviewing achievements of facility/country. Besides assisting in conceiving and setting up new goals, it abets in comparison between different countries and sundry regions within a country. Maternal mortality is believed to be a consequence of the innate risks related with gravidity and parturition, as well as the socioeconomic aspects keeping women away from the available health services. Even after being successful to reach a health infirmary, non-availability of vital facilities and subnormal care may compromise maternal survival. Maternal mortality is "just the tip of iceberg" with a vast base of the iceberg-maternal morbidity-which remains undescribed, relatively unevaluated. Also MMR has declined globally, more so in developed countries. In India, MMR has fallen from 212 to 167 per 1 lac live births .For every woman that dies, many survive a pregnancy complication. It is therefore quite obvious that for adequate evaluation of maternal health, all these survivors should also be included in analyses.

Maternal near miss

Women who experienced and survived a severe life threatening condition during pregnancy, child birth /

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postpartum are considered as near miss or Severe Acute Maternal Morbidity (SAMM) cases.Near miss/SAMM cases share many characteristics with maternal deaths and can directly inform about obstacles that have to be overcome after the onset of an acute complication. Corrective actions for identified problems can then be taken to reduce related mortality and long-term morbidity. Thus, MNM has emerged as an adjunct and proxy measure to identify gaps in maternal health services and act as complementary to maternal mortality

Definition of MNM

WHO defines it as "a woman who nearly died but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of pregnancy". In practical terms, women are considered near miss cases when they survive life-threatening conditions (i.e. organ dysfunction).

Criteria for identification of MNM case

WHO recommended three approaches

- Disease specific criteria e.g. severe preeclampsia/ eclampsia, severe hemorrhage/severe sepsis/uterine rupture.
- Management/Intervention based e.g. admission to ICU, procedures like obstetric hysterectomy/massive blood transfusion/intubation/ventilation.

- Organ dysfunction based criteria -based on apparent clinical diseases, clinical markers and management needs. The aim is towards correction of that organ dysfunction to arrest MNM progression to MD. For example, CVS/respiratory/renal/coagulation dysfunction / hepatic /neurological/uterine dysfunction.

Indian recommendations for diagnosing MNM

A recent Pilot Study (2014) was conducted by MOHFW over six medical colleges of India developed new comprehensive criteria for use in Indian setup.

These criteria were divided into three groups

- Pregnancy specific medical/obstetric disorders
- Pre-existing Disorders aggravated by pregnancy
- Incidental/accidental disorders.

List 1 Inclusion criteria

Severe maternal complications

- Severe postpartum hemorrhage
- Severe pre-eclampsia
- Eclampsia
- Sepsis or severe systemic infection
- Ruptured uterus
- Severe complications of abortion

Critical interventions or intensive care unit use

- Admission to intensive care unit
- Interventional radiology
- Laprotomy (includes hysterectomy, excludes caesarean section)
- Use of blood products

Life-threatening conditions (near-miss criteria)

- Cardiovascular dysfunction
  Shock, cardiac arrest (absence of pulse/ heart beat and loss of consciousness), use of continuous vasoactive drugs, cardiopulmonary resuscitation, severe hypoperfusion (lactate >5 mmol/l or >45 mg/dl), severe acidosis (pH <7.1)
- Respiratory dysfunction
  Acute cyanosis, gasping, severe tachypnea (respiratory rate >40 breaths per minute), severe bradypnea (respiratory rate <6 breaths per minute), intubation and ventilation not related to anaesthesia, severe hypoxemia (O2 saturation <90% for ≥60 minutes or PAO2/FiO2 <200)
- Renal dysfunction
  Oliguria non-responsive to fluids or diuretics, dialysis for acute renal failure, severe acute azotemia (creatinine ≥300 µmol/ml or ≥3.5 mg/dl)
- Coagulation/haematological dysfunction
  Failure to form clots, massive transfusion of blood or red cells (≥5 units), severe acute thrombocytopenia (<50 000 platelets/ml)
- Hepatic dysfunction
  Jaundice in the presence of pre-eclampsia, severe acute hyperbilirubinemia (bilirubin >100 µmol/l or >6.0 mg/dl)

- Neurological dysfunction
  Prolonged unconsciousness (lasting ≥12 hours)/coma (including metabolic coma), stroke, uncontrollable fits/status epilepticus, total paralysis
- Uterine dysfunction
  Uterine hemorrhage or infection leading to hysterectomy

List 1 presents the inclusion criteria for the baseline assessment. Women who are pregnant, in labour, or who delivered or aborted up to 42 days ago arriving at the facility with any of the listed conditions or those who develop any of those conditions during their stay at the health-care facility would be eligible.

Aims and objectives: Aim of this study is to identify distribution of causes of maternal near miss and interventions taken to reduce morbidity.

MATERIALS AND METHODS

100 obstetrics patients studied as maternal near miss cases retrospectively at obstetrics and gynecological department, B.J. medical college, Civil Hospital Ahmedabad. Collected data assembled and tabulated. Information derived pertaining to age, parity, cause of morbidity, mode of delivery and intervention taken to reduce morbidity.

OBSERVATION AND DISCUSSION

Age of patients : 27% of 15 to 20 year, 41% of 20 to 25 year , 28% of 26 to 30 year, 3% of 31 to 35 year and 1% to >35 years age group. Thus age group of 21 to 30 years have maximum numbers of patients as having child bearing mothers more comparative to other age groups.

Table 1. Age distribution of patients

Age	Number of Patients
15-20 Years (27%)	27
20-25 Years (41%)	41
26-30 Years (28%)	28
31-35 Years (3%)	3
>35 Years (1%)	1
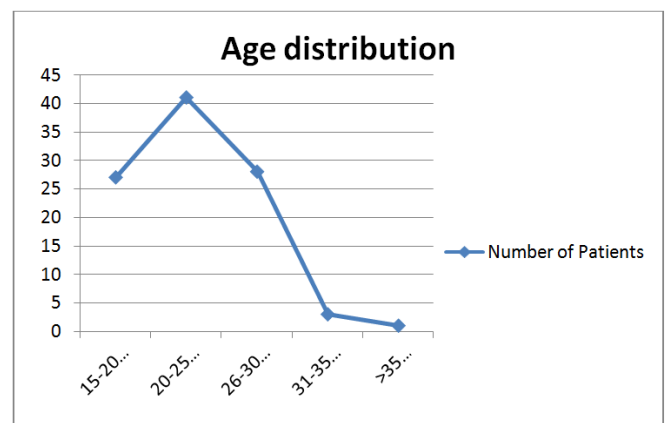
Parity of patients: 67% patients were primi para ,21% were second para, 12% were third para .Primi para patients were observed to predominate in study, leading to preeclampsia and eclampsia risk more in study group.

Table 2. Parity of patients

Gravida	Numbers of patients	Para	Number of patients	Abortion	Number of patients	Live issues	Number of patients
1	55	0	67	0	75	0	67
2	27	1	21	1	25	1	24
3	15	2	12	2	-	2	9
4	3	3	-	3	-	3	-
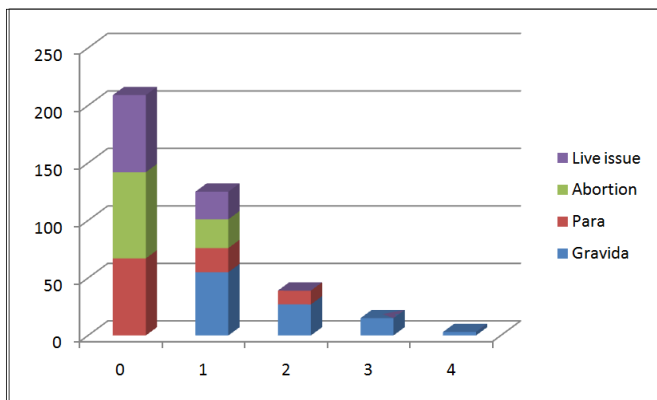
Table 3. Distribution of morbidity according to causes

Causes	Number of patients
Eclampsia and severe pre eclampsia	34
Anemia	21
Post partum hemorrhage	25
Ruptured uterus	8
CVS disease	7
Renal disease	3
Coagulation defect	2
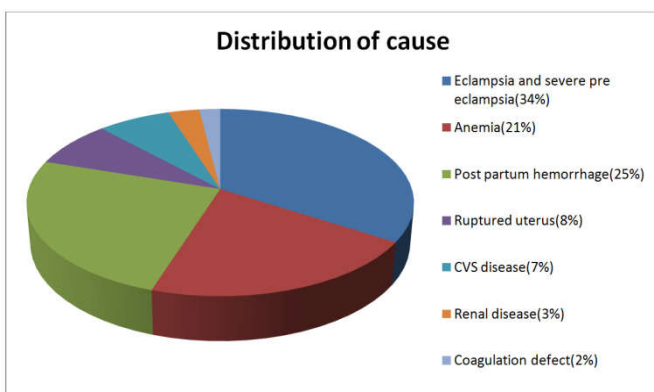
Causes of morbidity: 34% patients had eclampsia, severe pre eclampsia ; 21% had Anemia, 25% had PPH , 8% had rupture uterus, 7% had CVS disease, 3% had renal disease, 2% had coagulation defect. High risk patients should be timely referred to higher center for better care and reducing extent of morbidity. Eclampsia-pre eclampsia, PPH, Rupture uterus and anemia make high risk group in observed study. Anemia being another common cause should be dealt from conception period by providing appropriate health awareness directed towards society particularly to child bearing mothers.

Table 4. Interventions for reducing morbidity

Interventions	Number of patients
Blood products given	68
Laprotomy	19
Oxytocine and other uterotonics used	100
Hysterectomy	14
Magnesium sulphate given	34
Antibiotics given	100
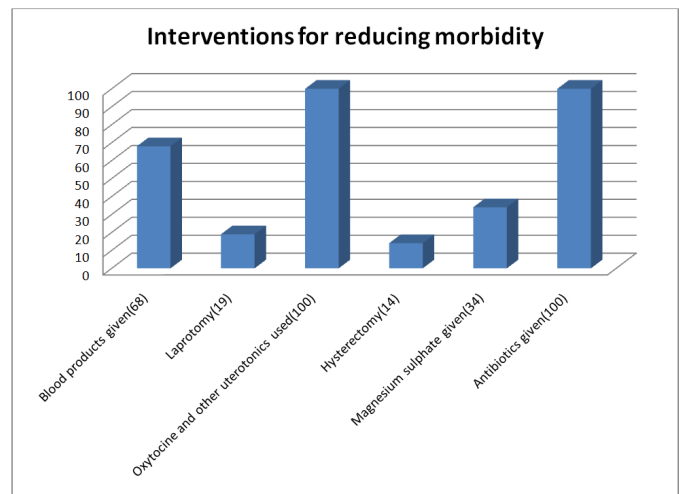
Interventions for reducing morbidity: 100% patients were given uterotonics and antibiotics prophylactically and therapeutically, 68% patients were given blood products, 34% had magnesium sulphate, 19% had laprotomy out of which 14 patients had hysterectomy. Timely treatment in form of uterotonics, antibiotics and blood transfusion for the prevention of deterioration of the patient for reducing mortality helped a lot.

Table 5

Mode of delivery	Number of patients
Normal delivery	59
Instrumental delivery	7
C section	34
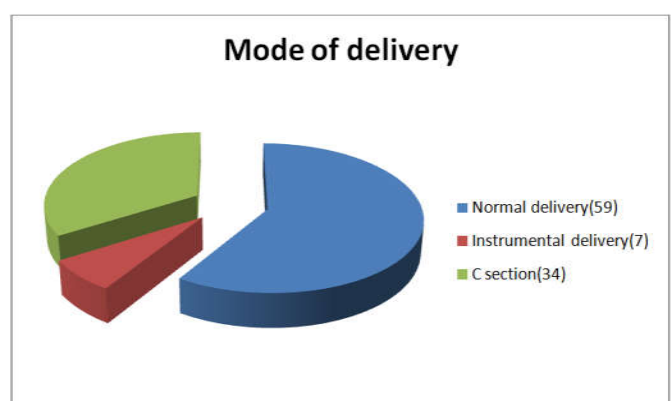
Mode of delivery: 59% patients had normal delivery, 34% patients had c section, 7% had instrumental delivery. Operative risk is there for patients in post operative period but normal delivered patients are also high risk and may deteriorate due to PPH, PIH and sepsis. These patients are also to be cured in time to reduce mortality.

Conclusion

Near-miss cases generally occur more frequently than maternal deaths and therefore a more reliable 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. The high maternal near-miss ratio observed in the present study indicates the frequent occurrence of near-miss in this population. As this is a tertiary referral center which receives critical patients from all surrounding districts. The major causes of potentially life-threatening conditions and near-miss cases were 34% patients had eclampsia, sever pre eclampsia; 21% had Anemia, 25% had PPH, 8% had rupture uterus, 7% had CVS disease, 3% had renal disease, 2% had coagulation defect. Findings that are comparable to those of other studies in low-resource countries. To reduce mortality and to decrease morbidity active interventions were used. All delivered patients were given uterotonics and antibiotics prophylactically and therapeutically, 68% patients were given blood products, 34% had magnesium sulphate, 19% had laprotomy out of which 14 patients had hysterectomy. Health education and awareness of patient regarding antenatal care, transfer in time to tertiary centre and desperate action to reduce mortality helped to bring back patients from grave danger.

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