e-ISSN: 0975-1556, p-ISSN:2820-2643

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2024; 16(11); 814-817

Original Research Article

A Study of Maternal Mortality at Tertiary Care Centre

Memon SI[1], Vaniya CK[2], Jagatiya KR[3], Barot AR[4], Trivedi SP[5]

[1]Senior Resident Department of Obstetrics and Gynecology, Narendra Modi Medical College and Sheth L.G. General Hospital, Ahmedabad

[2]2nd year Resident Doctor, Department of Obstetrics and Gynecology, Narendra Modi Medical College and Sheth L.G. General Hospital, Ahmedabad

[3]Associate Professor, Department of Obstetrics and Gynecology, Narendra Modi Medical College and Sheth L.G. General Hospital, Ahmedabad

[4]2nd Year Resident Doctor, Department of Obstetrics and Gynecology, Narendra Modi Medical College and Sheth L.G. General Hospital, Ahmedabad

[5]1st Year Resident Doctor, Department of Obstetrics and Gynecology, Narendra Modi Medical College and Sheth L.G. General Hospital, Ahmedabad

Received: 25-08-2024 / Revised: 23-09-2024 / Accepted: 26-10-2024

Corresponding Author: Dr. Shaheen Memon

Conflict of interest: Nil

Abstract:

Background: A study of maternal mortality at tertiary care centre.

Methods: The present study was a Retrospective cross sectional study, conducted in a department of Obstetrics and Gynecology of Narendra Modi medical college and hospital (NMMC), Ahmedabad from July 2020 to July 2024.

Results: During the study period 72 maternal deaths occurred out of 33280 live births, giving MMR of 216 during July 2020 to July 2024.In the present study maximum maternal deaths (47.22 %) were in age group of 20-25 year. Maximum maternal deaths were from emergency patient (70.83%). As per gravida/parity maximum maternal deaths were from primigravida (45.8%). Out of 72 cases of mortality, 20 mortality were from antennal phase (27.77%). In our study maximum maternal deaths were due to Hypertensive disorder of pregnancy (28%).

Conclusion: From this study it is concluded that hypertensive disorders of pregnancy and its complications are the most important cause of maternal death followed by PPH. Among these majority of factors are preventable. Due to multifactorial nature of maternal death, strategies should involve staff from grass root level, Good antenatal care, and early identification of high-risk cases, appropriate treatment in peripheral hospitals, early referral and with team approach for management of high-risk cases helps in reducing maternal mortality.

Keywords: Maternal mortality, Hypertensive disorders of pregnancy, Referrals, Emergency cases, Delays.

Introduction

Maternal mortality in a region is a measure of the reproductive health of a woman in the area and the quality of the health care delivery system. Maternal mortality is described as "just the tip of the iceberg", implying that there is a base -maternal morbidity-which remains largely undescribed. According to the latest UN global estimates, 303,000 women a year die in childbirth, or as a result of complications arising from pregnancy. This equates to about 830 women dying each day. Every day in 2017, approximately 810 women died from preventable causes related to pregnancy and childbirth. Between 2000 and 2017, the maternal mortality ratio (MMR, number of maternal deaths per 100,000 live births) dropped by about 38% worldwide. 94% of all maternal deaths occur in low and lower middle-income countries.

Maternal death: The death of a woman while pregnant or within 42 days of the termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes (ICD-10, 1993).

Maternal mortality ratio (MMR): The number of maternal deaths per 100,000 live births in a given time period. The MMR expresses obstetric risk, or a woman‘s chances of dying from a given pregnancy. This is the most commonly used indicator of maternal health

Maternal mortality rate: The number of maternal deaths per 1,000 women of reproductive age (usually 15–49 years). This is an indicator of the risk of maternal death among women of reproductive age

and provides an indication of the burden of maternal death in the adult female population

Maternal mortality is classified according to WHO into-

1. Obstetric causes- (a) direct obstetric causes (b) indirect obstetric causes
2. Non-obstetric causes.

Direct maternal death is the death of the mother that results from obstetrical complications of pregnancy, labour or the puerperium or a chain of events resulting from any of these factors e.g. gestational hypertension, antepartum hemorrhage, post-partum haemorrhage, obstructed labour, rupture uterus, septic abortion, puerperal sepsis, surgical complications following LSCS, Peri partum cardiomyopathy etc. Indirect maternal death is the maternal death that is not directly due to an obstetrical cause. Death results from preexisting disease or disease developing during pregnancy, labour or puerperium or condition aggravated by maternal physiological adaptation in pregnancy e.g. heart disease complicating pregnancy, anaemia in pregnancy, infectious diseases, liver disorders, acute and chronic renal failure, epilepsy, haematological causes, etc.

Non obstetric causes- e.g. Accident, suicide, assault, snake bite, non-obstetric surgical cause etc.

Aims and Objectives

1. To evaluate the MMR at our institute
2. To evaluate the common causes of maternal death in current practice
3. To evaluate the most common time period - antepartum, intrapartum, postpartum
4. To study the various factors contributing the mortality

Materials and Method

The present study was a Retrospective cross-sectional study, conducted in the department of Obstetrics and Gynecology of Narendra Modi medical college and hospital (NMMC), Ahmedabad.

Data regarding maternal mortality was collected from maternal mortality register from Family welfare unit of OBGY department after obtaining permission from respective HOD and Superintendent.

The details of maternal deaths from July, 2020 to June 2024 were collected and analyzed. Descriptive data was tabulated as absolute figures and percentages .The details of number of live births from July 2020 to July 2024 were collected from labour room register.

Inclusion Criteria: According to definition of maternal mortality all women while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Exclusion Criteria: Accidental and incidental causes are excluded

Results

During the period of study from July 2020 to July 2024, 72 maternal deaths out of 33280 live births giving an MMR of 216 per 1,00,000 live births. At our centre MMR is high because it is a tertiary centre with high number of referred cases.

Table 1: Distribution According To Age Group

Age Group	Number Of Patient	Percentage
Less than 20	1	1.38%
20-24 years	34	47.22%
25-30 years	23	31.94%
31-35 years	11	15.27%
>35 years	3	4.16%

In our study maximum number of deaths were in 20-24 years of age group.

Table 2: Distribution According To Emergency/Registered Case

Type of patients	Number	Percentage
Emergency Case	51	70.83%
Registered Case	21	29.16%

Above data shows that MMR was high among the emergency cases (70.83%) compared to already registered cases (29.16%).

Table 3: Distribution According To Gravida

Gravida	Number	Percentage
1	33	45.8%
2	24	33.33%
3	7	9.73%
>3	8	11.11%

As per gravida/parity status in our study maximum maternal deaths have occurred in primigravida. Out of 72 cases 33 maternal deaths was among primigravida (45.8%).

Table 4: Distribution According To Time Period

Time Period	Number	Percentage
Antepartum	20	27.77%
Intrapartum	2	2.77%
Postpartum	50	69.44%

Maximum number of deaths occurred during postpartum phase (69.44%) in our study. In our study only 2 intra-partum death occurred which were due to pulmonary embolism.

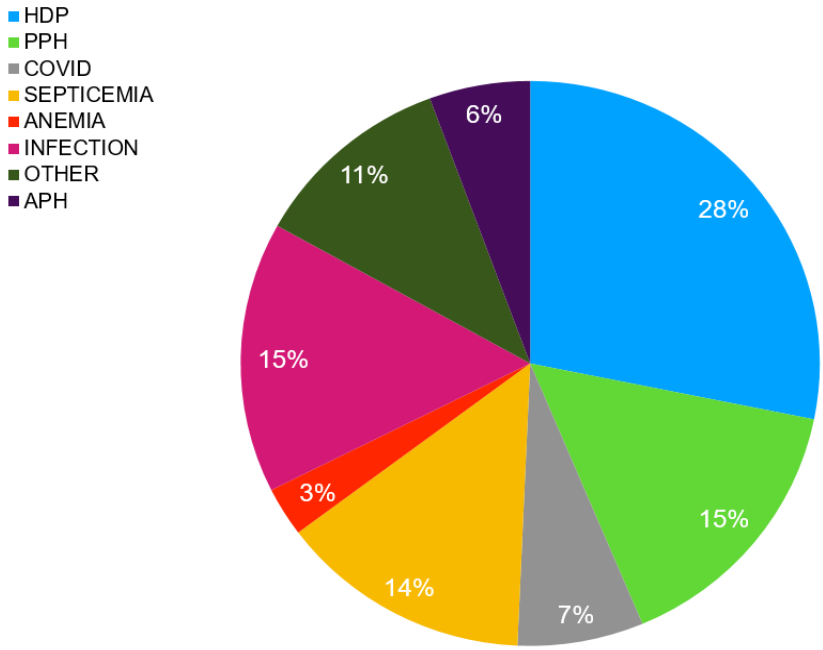

Figure 1: Distribution According To Cause of Death

In our study large number of mortality were due to hypertensive disease of pregnancy which includes Eclampsia, DIC, and pulmonary edema due to HDP.

Discussion

During the study period 72 maternal deaths occurred out of 33280 live births, giving MMR of 216 per 100000 live births during July 2020 to July 2024. Thus, MMR of present study is much higher because the study was conducted in tertiary care centre where high number of patient are referred from periphery.

A total of 72 maternal deaths were analysed with special emphasis on age, parity, type of case (emergency/registered) cause of death and time period (antepartum/intrapartum/postpartum).In the present study maximum maternal deaths (47.22 %) were in age group of 20-25 year. Maximum maternal deaths was seen in emergency patient (70.83%) which were not registered previously at our centre. As per gravida/parity maximum maternal deaths was among primigravida (45.8%). Out of 72 cases of mortality, 20 cases were antepartum (27.77%) and maximum mortality was observed in postpartum phase (69.44%). In our study maximum maternal deaths were due to Hypertensive disorder of pregnancy and its complications (28%).

Initiatives to Reduce Maternal Mortality

Under JSSK scheme (Janani Shishu Suraksha Karyakram)every pregnant woman is entitled to free delivery including LSCS in public health institute, free transport, diagnostics, medicines, food and blood products. This was also to facilitate institutional delivery.

National iron plus initiative launched by Ministry of Health and Family Welfare in 2013 insists on Iron supplementation to all adolescent girls, pregnant and lactating women. PMSMA (Pradhan Mantri Surakshit Matritva Abhiyan) was launched by Ministry of Health and Family welfare, Government of India. This program aims to provide assured comprehensive and quality antenatal care free of cost universally to all pregnant women on 9th of every month. Special antenatal care is provided by obstetrician, physician and radiologist apart from routine antenatal care by obstetrician. Ministry of Health and family welfare (MOHFW), GOI has developed an initiative termed Dakshata to reduce

the MMR and newborn mortality by improving quality of care at delivery points through training of medical officers for competency enhancement. India has come a long way in improving the health indicators since independence. However, progress in reducing maternal mortality has been slow and largely unmeasured and undocumented. Current (2021) MMR of India is 93 and of Gujarat is 67.

Conclusion

Through this study we conclude that hypertensive disorders of pregnancy and its complications are the most important cause of maternal death followed by PPH. These all are preventable causes. Due to multifactorial nature of maternal death strategies should involve staff from grass root level. Good antenatal care, early identification of high-risk cases, appropriate treatment in peripheral hospitals, early referral and team approach for management of high-risk cases helps in reducing MMR. Blood and blood products are essential to reduce maternal mortality and morbidity. There is a need to improve access to blood for obstetric cases. Timely referral to Centre's having blood transfusion facility would improve outcome of emergency patients. Goal of reducing MMR can be achieved by many factors but proper knowledge to patients regarding importance of medical assistance during pregnancy is necessary. It helps in preventing the first level delay and so timely provision of basic medical treatment, identifying the high risk cases and thus preventing the major consequences. It is important to stress the need of health education at all levels of society. As these patients are not aware of the available facilities. It is necessary to provide health education and information regarding utilization of health facalities provided by government.

Conclusion is that the majority of causes and contributory factors responsible for maternal deaths are preventable through combined safe motherhood strategies like focused antenatal care, prompt referral, active management of labour and immediate post-partum period and access to healthcare facalities family planning.

There is need to establish a reliable vital registration system mainly for maternal and neonatal mortality and a maternal outcome-monitoring system to have an accurate picture of maternal health situation. This will help assess the impact of interventions on maternal mortality.

References

1. Loudon I. Death in childbirth: an international study of maternal care and maternal mortality, 1800-1950. New York: Oxford University Press, 1992.
2. Park's Text Book Of Preventive And Social Medicine 25th Edition
3. Who, Unicef, Unfpa, World Bank (2012) Trends in maternal mortality: 1990 to 2010. Geneva: World Health Organization
4. The millennium development goals report 2009
5. RGI (2006) Registrar General/Centre for Global Health Research, University of Toronto. New Delhi: Registrar General of India.
6. Department of health and family welfare Ministry of health and family welfare Government of India: www.mohfw.gov.in
7. MacDonald et al. BMC Pregnancy and Childbirth (2018) 18:254
8. Trends in maternal mortality: 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization; 2019
9. India has achieved groundbreaking success in reducing maternal mortality". www.who.int. Retrieved 2020-03-30.
10. Maternal Health UNICEF India https://www.unicef.org> what –we-do
11. "India has achieved groundbreaking success in reducing maternal mortality". www.who.int. Retrieved 2020-03-30.
12. Williams Obstetrics 26th Edition
13. Williams Obstetrics 26th Edition chapter 67-infectious diseases. ACOG and SMFM joint statement on WHO recommendations regarding COVID 19 vaccines and pregnant individual.2021.