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Original Research Article

Maternal mortality: a tertiary centre panic

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ABSTRACT

Background: Maternal death has a serious implication on the family, society and nation. The preventable and avoidable factors have been noted in most of the maternal deaths and these can be reduced by effective and affordable actions. The objective of present study was to evaluate the causes of maternal mortality in a tertiary care hospital, assess its epidemiological aspects and suggest remedial measures to reduce the same.
Methods: A retrospective study of all hospital records and death summaries of all maternal deaths over a period of 16 months from April 2015 to July 2016 was carried out and epidemiological factors and causes affecting maternal mortality were assessed.
Results: A total of 100 maternal deaths occurred over a period of 15 months out of which unbooked and late referrals constituted 75.55 % of maternal deaths. Most maternal deaths occurred in the age group of 20–30 years, multiparous women (73%) and women from rural areas (71.%). Direct obstetric causes were responsible for 91 maternal deaths whereas 50 maternal deaths were due to indirect causes. Most common cause of death (41) was hemorrhage, followed by pregnancy-induced hypertension including eclampsia (15) and sepsis (21).
Conclusions: Hemorrhage, sepsis and hypertension including eclampsia were seen as the direct major causes of death. There is a wide scope of improvement because a large proportion of the observed deaths are preventable.

Keywords: Anemia, Maternal mortality, Postpartum hemorrhage, Sepsis

INTRODUCTION

A maternal death is defined as death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by pregnancy or its management. WHO 2005 World Health Report Make Every Mother and Child Count states that the major causes of maternal deaths are: Hemorrhage (25%), Infections (13%), Unsafe abortions (13%), Eclampsia (12%), obstructed labour (8%), other direct causes (8%), and indirect causes (20%). Indirect causes include malaria, anemia and cardiovascular disease, which either complicate pregnancy or get aggravated by it. Maternal death has been used traditionally as a measure of quality of health care in a community. Maternal mortality rate in India has reduced from over 750 in the 1960s to about 400 in the 1990s and about 300 in 2003, though it is above 400 in some states. [1,2.] Although the risk of death from complications of pregnancy has decreased during past few decades, it continues to haunt the obstetricians. Most of the evidence for maternal mortality is obtained through hospital data and community based reports, which are situated mostly in urban areas, whereas most of the maternal deaths are from rural areas. This study was done in a tertiary medical college and hospital situated in Ahmedabad, Gujarat where large numbers of patients are referred from rural areas of the state.

This study was undertaken to assess the epidemiological aspects and determine the causes of maternal mortality and suggest remedial measures to reduce the same.

As Civil Hospital Ahmedabad is a tertiary centre, where many patients in moribund conditions are referred so Maternanal Mortality Ratio can-not be calculated as per the number of deliveries in the institute.

METHODS

The study was conducted by reviewing the records of 100 maternal deaths over the period of 15 months from April 2015 to July 2016 in the department of Obstetrics and Gynaecology at Civil Hospital, BJ Medical college Ahmedabad. We included all cases of deaths resulting from medical or surgical causes related to pregnancy that occured during pregnancy, at delivery or within 42 days of delivery or termination irrespective of the place of delivery. All cases were correlated with various factors like age, parity, past medical and surgical history, previous pregnancies, hospital antenatal supervision, pregnancy outcome, delivery status, admission to death interval, and causes of deaths. Autopsy could not be conducted on any of the bodies due to lack of consent.

RESULTS

During the study period, 100 maternal deaths were evaluated.

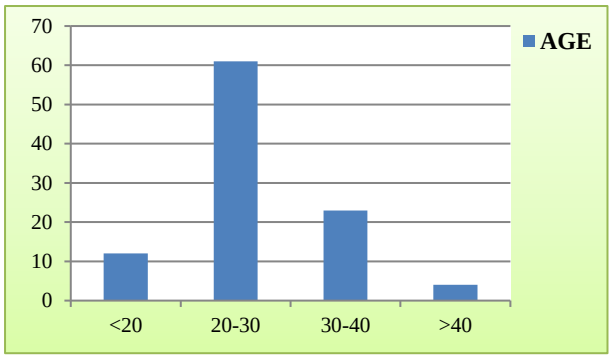

Figure 1: Age wise distribution of maternal deaths.

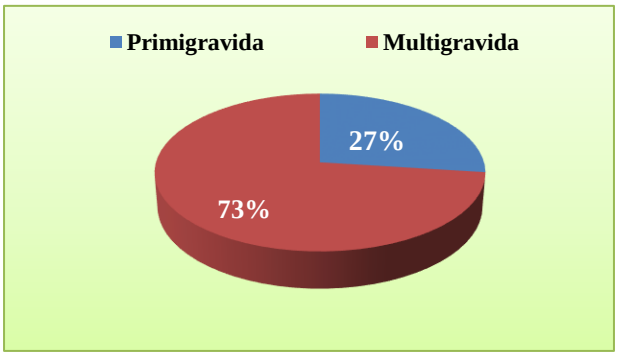

Figure 2: Parity wise distribution of maternal deaths.

The epidemiological characteristics of maternal deaths are depicted in Figure 1 and 2. Majority of maternal deaths (61%) were seen in the age group of 20 to 30 years. More deaths were reported in multiparous women (73%) as compared to Primigravidae (27%).

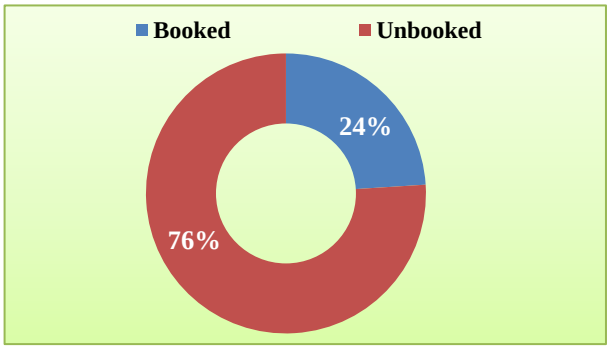

Figure 3: Antenatal care.

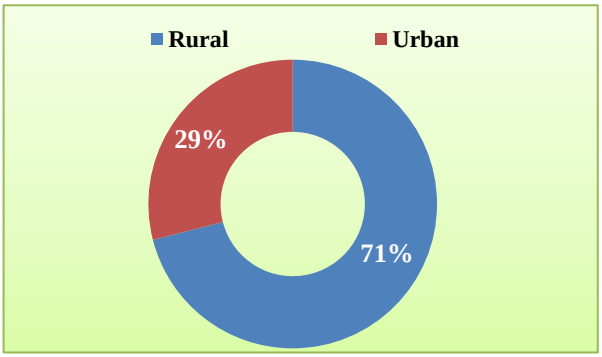

Figure 4: Locality.

A large number of maternal deaths were reported in women from rural areas (71%) and unbooked patients as compared to women from urban areas (29%).

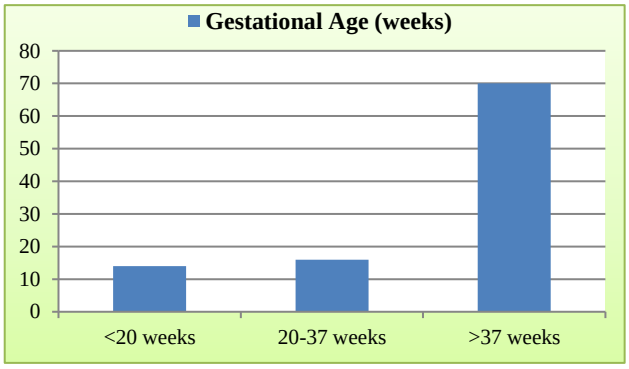

Figure 5: Gestational age at the time of death (in weeks).

Majority (70%) of maternal deaths were reported in gestatational age more than 37 weeks.

Of all maternal deaths 17% percent were seen in the antenatal period. Early pregnancy deaths (those due to septic abortion and ectopic pregnancy) constituted 9% of the total. About one third of the total maternal deaths were due to unattended births at home and delay in

seeking proper transportation facilities. Intranatal deaths constituted 83% of all maternal deaths.

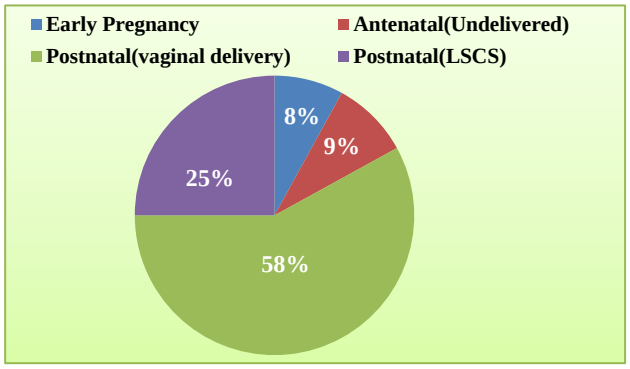

Figure 6: Demographic profile of the study subjects and mode of delivery.

Admission to death interval of 58 cases was less than 24 hours. This could possibly be due delayed referrals from primary health care centres and critical condition of patients at the time of admission.

Table 1: No. of maternal deaths showing time interval from admission to death.

Admission-death interval in hours	Maternal deaths
<24	58
24-48	20
48-72	7
>72	15

Table 2: Direct and indirect causes of maternal deaths.

Cause of death	Maternal deaths
Direct Causes	91
Hemorrhage	41
Sepsis	21
Obstructed labour (rupture uterus)	1
Abortion and ectopic pregnancy	7
Eclampsia and PIH	15
Pulmonary embolism	6
Indirect causes	50
Anemia	22
Cardiac disease	8
Hepatitis	4
Acute renal failure	15
Unknown	1

Causes of maternal deaths have been illustrated in Table 2. Many mortalities happened due to direct causes but indirect causes added to mortality as overlapping factors. Maternal deaths due to direct causes accounted for 91. Antepartum and postpartum hemorrhage, eclampsia, and sepsis were the major direct causes of maternal deaths. Postpartum hemorrhage caused 34 deaths and amongst them, twelve manifested disseminated intravascular coagulation. Early pregnancy deaths included those due to abortion and ruptured ectopic pregnancy.

Few deaths were reported due to obstructed labor. Sepsis cases included septic abortion, puerperal sepsis and septicaemia. Pulmonary embolism was suspected as the cause of death in six.

Indirect causes constituted 50 of all maternal deaths. Anemia, rhuematic heart disease and jaundice formed the major part of indirect causes. Despite of studying adequate history and clinical findings, the cause of death could not be ascertained in one case and post mortem was refused by the relatives.

DISCUSSION

Maternal mortality is a measure of reproductive health of the society. Poor quality of health services, delayed referrals and low socioeconomic status of the community leads to an increase in maternal mortality and morbidity. Absolute and accurate identification of all deaths related to pregnancy is an imperative step in the prevention of such deaths. By having a clear understanding of the magnitude of pregnancy-associated mortality comprehensive prevention strategies can be formulated to prevent unanticipated maternal deaths.[3]

In present study, 61% of maternal deaths were in the age group of 20 to 29 years and 73% of maternal deaths were reported in multiparous patients. More maternal deaths were reported in women from rural areas (71%), unbooked patients (76%), illiterate women and women belonging to low socioeconomic status. In such cases health education and awareness of health care services may play a major role in preventing such complications leading to death.

Most women in present study were from far-off places resulting in delayed intervention, and many were in poor general condition or comatose at the time of admission. Timely transfer and availability of transport facilities may improve the condition of the patient when treted in time.

Analyzing the cause of death in present study, 91 deaths were due to direct causes, hemorrhage is the most common cause followed by indirect causes and sepsis. The findings are in correlation with Khosla et al and Sinha.[4,5] Other causes of deaths due to antepartum and postpartum hemorrhage in present study were rupture uterus and retained placenta and are in accordance with Sengupta et al and Patel et al.[6,7] Postpartum hemorrhage is sudden, unpredictable, and is more dangerous when woman has pre-existing anemia. The provision of timely blood transfusions can save lives at risk due to severe haemorrhage.[8] The availability of blood banks at all first referral units (FRUs) and their proper functioning are needed. Acute inversion of uterus led to one maternal death and this is similar with the study reported by

Jagdish and Govind.[9] Appropriate treatment at periphery and timely referrals to higher centres can prevent most of these deaths. Unfortunately, many cases in present study were referred very late, in poor condition and were not even accompanied by health care worker. Majority of these patients belonged to places from where it may be too difficult for them to get to a hospital and seek the proper treatment. Programs like basic emergency obstetrics care and skilled attendant at birth training gives a ray of hope of reducing maternal mortality by training medical officers and staff nurses working in rural areas.

Present study focuses on the importance of early and compulsory antenatal registration of all pregnancies and regular follow up visits. Poor pre-pregnancy and pregnancy nutritional status, unavailability of proper antenatal care, ignorance of warning signs of pregnancy, unsupervised home deliveries and late referrals negatively affect the maternal prognosis. Maternal health can be improved by increasing the access to quality maternal health services in time. All efforts must be made to identify and address the obstacles at all levels of the health system. Most maternal deaths can be prevented by providing care at grass root level, linkage between primary secondary and tertiary care, strengthening of referral services and instituting emergency obstetric services.

CONCLUSION

Modern high-quality obstetric care should be made available to all women through a system of professional midwifery and referral hospital care. Most maternal deaths are reported in unbooked, illiterate patients who belong to low socioeconomic status.

Enhancement of primary health care and upgradation of hospitals in rural areas can definitely lessen the count of maternal deaths.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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