



## STUDY OF MATERNAL MORTALITY IN A TERTIARY CARE HOSPITAL IN KASHMIR DURING COVID PANDEMIC

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**ABSTRACT**

**Introduction:** Maternal mortality is an indicator of the quality of the obstetric care in a community directly reflecting the utilization of health care services available. 1 Maternal mortality is defined as the death of a woman while being pregnant or within 42 completed days of termination of pregnancy, irrespective of the duration or site of pregnancy, from any cause related to or aggravated by pregnancy, but not from accidental or incidental causes. 2 **Materials And Methods:** This retrospective study was conducted at Govt Lala ded hospital, an associated hospital of GMC Srinagar Kashmir. This two year study was conducted from March 2020 to February 2022. Results: During the study period, there were total of 43,480 live births and 53 maternal deaths. The MMR in the study period was 121 per 1,00,000 live births. Majority of deaths were seen in multiparous women (56.60%) as compared to primiparous women (43.39%). 79.24% patients were from rural areas and 20.75% were from urban areas. Regarding Antenatal check-ups , maximum number of patients were unbooked (71.69%). **Conclusion:** Training of medical officers and staff nurses working in rural areas. Early detection of high risk pregnancies and timely referral to tertiary care hospitals can reduce the number of foeto maternal complications.

**KEYWORDS :** Maternal mortality, sepsis, hypertensive disorders, haemorrhage**INTRODUCTION**

Maternal mortality is an indicator of the quality of obstetric care in a community directly reflecting the utilization of health care services available. 1 Maternal mortality is defined as the death of a woman while being pregnant or within 42 completed days of termination of pregnancy, irrespective of the duration or site of pregnancy, from any cause related to or aggravated by pregnancy, but not from accidental or incidental causes. 2 The risk of a woman dying as a result of pregnancy and childbirth during her lifetime is about 1 in 6 in Afghanistan compared with 1 in 30,000 in Northern Europe. 3 At the country level India contributes one-fifth to the global maternal mortality. 4 About 80% of maternal mortality occurs due to direct causes and obstetric haemorrhage being the commonest. 5 A respectable number of maternal deaths can be averted by skilled care before, during and after childbirth. 6

**AIMS AND OBJECTIVES**

To calculate the maternal mortality ratio in our hospital.

To assess and evaluate the epidemiological aspects of maternal mortality.

To evaluate the causes of maternal mortality.

**MATERIALS AND METHODS**

This retrospective study was conducted at Govt Lala ded hospital, an associated hospital of GMC Srinagar Kashmir. This two year study was conducted from March 2020 to February 2022. All maternal deaths, booked or unbooked admitted to the hospital at the time of pregnancy, delivery or during puerperium were included in our study. The data was collected from the hospital maternal mortality records. The medical record sheets of all the patients were reviewed regarding age, residence, parity, antenatal check-ups, antenatal bookings and cause of maternal death.

The details of number of live births from March 2020 to February 2022 were collected from Medical Record section.

Maternal mortality ratio for the study period was calculated by using the formula-

$$\text{MMR} = \frac{\text{Total no of maternal deaths}}{\text{Total no of live births}} \times 100000$$

**RESULTS:**

During the study period March 2020 to February 2022, there were total of 43480 live births and 53 maternal deaths. The MMR in the study period was 121 per 1,00,000 live births. The epidemiological characteristics of maternal deaths are shown in table 1.

**Table 01: Demographic Characteristics of Patients.**

Patient characteristics	Classification	Number of Cases	Percentage
Parity	Primi	23	43.39
	Multigravida	30	56.60
Residence	Rural	42	79.24
	Urban	11	20.75
Antenatal Status	Booked	15	28.30
	Unbooked	38	71.69

Regarding parity, majority of death were seen in multiparous women (56.60%) as compared to primiparous women (43.39%). 79.24% patients were from rural areas and 20.75% were from urban areas. Regarding Antenatal check-ups, maximum numbers of patients were unbooked (71.69%) and only 28.30% patients were booked.

**Table 02: Causes of maternal deaths.**

Cause	Number	Percentage
Sepsis	11	20.75
Hypertensive disorders	10	18.86
Haemorrhage	8	15.09
Cardiac	7	13.20
Hepatic	6	11.32
Rupture Uterus	5	9.43
Pulmonary thrombo embolism	5	9.43
Seizure disorder	1	1.88
Total	53	100

The classic triad of sepsis, hypertensive disorders and haemorrhage were the major causes of maternal deaths. In our study the leading cause of maternal death was sepsis (20.75%) followed by hypertensive disorders (18.86%) and haemorrhage (15.09%). The cardiac causes were seen in 13.20% patients. The hepatic disorders (11.32%) was the major indirect cause and significant comorbid factor of maternal deaths.

**DISCUSSION**

Maternal mortality is a global health problem. Maternal mortality is an index of reproductive health of the society. High incidence of maternal deaths reflects poor quality of maternal services, late referral and low socioeconomic status of the community. Recently UNICEF has estimated that approximately 80% of maternal deaths could be averted

if women had access to essential maternity and basic health care services.<sup>7</sup>

The MMR in our study is 121 per 1,00,000 live births which is higher than the present national standards of MMR in India that is 113. Present study has comparatively higher MMR which could be due to the fact that our hospital is alone tertiary care hospital in Kashmir and receives a lot of complicated referrals from rural areas and other urban areas hospitals. Also our study was conducted during the pandemic of Corona virus, the maximum number of patients had limited number of antenatal check-ups due to fear of COVID infection, fear of infection to child and non-availability of routine OPD services, which might have led to increased number of undiagnosed and untreated maternal morbidities. There is evidence of increased risk of maternal intensive care unit admission and maternal mortality due to COVID-19 in some settings. Women's healthcare seeking behaviour has changed. In addition to misinterpretations of local and national "stay at home guidance", these factors may have impacted on the maternity care provided to mothers during pregnancy and postpartum period. Unfortunately, in many cases the patients were referred very late, in critical condition, unaccompanied by health professionals. Most of these deaths are preventable if patients are given appropriate treatment at periphery and timely referred to tertiary care centres. Various studies done in India in last 15 years have shown wide variation in MMR from 47 to 625 per 100000 live births.<sup>8-13</sup>

Majority of the patients were unbooked (71.69%) and multigravida (56.60 %). These demographic characteristics were comparable to the study done by Pathak et al.<sup>14,15</sup>

In present study, sepsis was the leading cause of maternal death followed by hypertensive disorders and haemorrhage. Our results were comparable with studies by Jain<sup>9</sup> and Jadhav.<sup>10</sup>

Even today large numbers of maternal deaths are due to classical triad of haemorrhage, sepsis and eclampsia. All these causes are preventable provided the treatment is instituted in time.

Among indirect causes, most common was hepatic (11.32%) followed by anemia. These results were consistent with the study done by Jain<sup>9</sup> and Jadhav.<sup>10</sup>

## CONCLUSION

Number of socio demographic factors affects maternal mortality. Maternal deaths can be prevented by improving the health care facilities in rural areas. Training of medical officers and staff nurses working in rural areas. Early detection of high risk pregnancies and timely referral to tertiary care hospitals can reduce the number of fetal maternal complications. Health education programmes on importance of antenatal check-ups, iron folic acid supplements, infection control practices, promotion for institutional deliveries would help in promoting safe motherhood. Improvement in primary health care and proper implementation of NRHM and up gradation of hospitals in rural areas can definitely bring down the number of maternal deaths.

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