

Clinical Course of COVID 19 Maternal Death in a Tertiary Care Centre in Kerala

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Abstract: *This study investigates the effects of COVID - 19 on maternal mortality by analyzing the clinical outcomes of COVID - positive pregnant women in a tertiary care facility. A retrospective review identified nine maternal deaths among 755 COVID - positive antenatal cases, resulting in a prevalence of 1.19%. All cases occurred in the third trimester and predominantly presented with moderate to severe respiratory symptoms, including dyspnea and tachypnea. Each patient required ICU care and ventilator support, and none had received the COVID - 19 vaccine. The findings highlight the heightened risk of severe COVID - 19 complications in pregnant women, particularly in the later stages of pregnancy, indicating a need for improved clinical protocols and prompt interventions to enhance maternal care during the pandemic.*

Keywords: COVID - 19, maternal mortality, pregnancy complications, respiratory distress, maternal healthcare, ARDS

1. Introduction

COVID 19 is a global pandemic and is an additional toll for maternal mortality. The rate of maternal deaths increased to 33.3% and the characteristics of maternal mortality and morbidity with COVID 19 is still limited. This study aims to understand the clinical course of maternal deaths due COVID positive.

On March 11, 2020, the WHO officially declared COVID - 19 a global pandemic.

There is limited data on the impact of COVID - 19 during pregnancy. Pregnant women are more vulnerable to viral respiratory infections, and severe pneumonia can occur due to physiological changes in their immune and cardiopulmonary systems.

COVID - 19 infections in pregnant women often present as mild symptoms or may even be asymptomatic. However,

recent studies from Sweden and the United States indicate that pregnant and postpartum women face a higher risk of severe complications related to COVID - 19.

The lack of clinical information regarding COVID - 19 infections during pregnancy necessitates a systematic investigation of the clinical characteristics, pathophysiology, and outcomes for pregnant women.

2. Methodology

A retrospective review of case series was conducted in a tertiary care centre which is a designated COVID facility. Also assessed the clinical presentation, inpatient management and subsequent clinical course which leads to the death of (RT-PCR or Rapid antigen to COVID 19 test positive) pregnant females.

3. Results and Discussion

CHARACTERISTIC	CASE 1	CASE 2	CASE 3	CASE 4	CASE 5	CASE 6	CASE 7	CASE 8	CASE 9
AGE	24	28	32	35	26	34	30	27	30
BMI	26.8	29.1	28	22.5	24.9	23	24.6	22.1	23.2
SOCIOECONOMIC STATUS	lower	lower	upper	middle	middle	middle	lower	lower	middle
PARITY	Primi	P1	Primi	P1	P1	PRIMI	Primi	primi	P2
GESTATIONAL AGE AT ADMISSION	38 weeks	30W	31w	25 W	30W	29WK	34w	35wk	30WK

SYMPTOMS									
Dyspnoea	+	+	+	+	+	+	-	-	+
Cough	+	+	+	-	+	-	+	-	+
Fever	-	-	+	+	-	-	-	-	-
Sore throat	-	-	-	-	-	-	-	-	-
Myalgia	-	+	-	-	-	-	-	-	-
Anosmia	-	-	-	-	-	-	-	-	-
others	-	-	-	-	-	-	Abdominal pain	seizures	-
Severity of infection at the time of admission	moderate	Severe	severe	Severe	severe	SEVERE	moderate	severe	Moderate
Obstetric high risk factors	GDM	Previous CS	GDM	DCDA TWIN	nil	OVERT DM	BREECH	Eclampsia GDM	GDM ASTHMA
Atleast 1 family member affected	yes	yes	Yes	yes	yes	YES	Yes	no	yes
Spo2 at the time of admission	96	92	68	92%	86%	96%	97	98%	93
Respiratory rate at the time of admission	20	28	42	28	26	36	28	24	28

The World Health Organization reported a global case fatality rate for COVID - 19 of 2.1%, with notable variations across different regions as of July 2021. Pregnant women are particularly vulnerable due to physiological changes that can increase the severity of respiratory illnesses, as evidenced by the maternal mortality rates seen in past epidemics of SARS and MERS, which were 15% and 27%, respectively. Early observations suggested that COVID - 19 might have a mild impact on pregnancy; however, later studies raised concerns about potential risks, including occasional maternal deaths. This study aims to explore the factors linked to maternal mortality due to COVID - 19, enhancing existing knowledge and guiding future maternal healthcare practices.

There were 9 cases of maternal mortality due to COVID 19 pneumonia among 755 cases of COVID positive antenatal women with a prevalence of 0.01. (1.19%) and there were no obvious obstetric cause for mortality.8 were in third trimester and presented with moderate to severe illness and dysnoea was the most common presentation (100%). All patients had tachypnea and required oxygen and ICU admission with ventilator support. All pregnancies were terminated by LSCS for maternal indication.

Chest X RAY had features of acute respiratory distress syndrome with bilateral lung involvement. None of them received vaccine for COVID 19. COVID 19 pandemic was a

leading cause of poor maternal outcome.



X ray chest image of a Covid positive category 3 antenatal woman

Need for oxygen	yes	yes	yes	yes	yes	yes	yes	yes	Yes
ICU/HDU requirement	yes	yes	yes	yes	yes	yes	yes	yes	Yes
Obstetric intervention	LSCS	LSCS	LSCS	LSCS	LSCS	LSCS	LSCS	LSCS	LSCS
Admission to death interval	16	12	6	14	14	6	6	1	10
Vaccination status	Not taken	Not taken	Not taken	Not taken	Not taken	Not taken	Not taken	Not	Not taken

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The risk of maternal mortality in pregnancies during COVID - 19 should not be overlooked. While the overall numbers may seem low, it's essential for obstetricians to be aware of the factors that predict adverse outcomes. Enhancing healthcare delivery systems is critical to protecting pregnant women, especially in low - resource countries, to prevent fatalities. Ongoing education and targeted protocols are necessary to address the unique challenges posed by the pandemic and improve maternal care.

4. Conclusion

COVID - 19 pneumonia contributes to increased maternal mortality. Obstetric patients in their second and third trimesters who present late to the hospital with COVID- 19, experience moderate to severe disease (RR > 30 minutes), show elevated inflammatory markers, and have bilateral lung involvement are at greater risk for poor maternal outcomes.

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