

Original Article

Evaluation of SARI cases in relation to Covid 19 in pregnancy

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ABSTRACT

Background: The global pandemic Corona virus disease (Covid-19) caused major impact on the health systems around the world. More than 25 million cases and approximately 0.8 million deaths have been reported worldwide till date. India has also reported more than 7 million cases and more than 1 lakh deaths. Though fetomaternal effects appear to be nonthreatening, yet pregnancy with Covid 19 is considered as high risk condition.

Method:

All pregnant patients admitted in SARI isolation ward of Obstetrics & Gynecology department, College of Medicine & JNM Hospital, Kalyani from 1st May 2020 to 15th September 2020 were analysed in this retrospective study.

Results:

Among 91 admitted patients 6 (6.59%) were Covid- 19 positive, including 1 reported dead and other 5 ultimately went home safely. All newborns were unaffected.

Conclusion:

The positivity rate was low among suspected pregnant women and no reported effect on newborn.

Keywords: Covid 19, newborn, pregnancy, RTPCR, SARI

INTRODUCTION

The SARS-COV-2 Corona virus was first identified in Wuhan, China in December 2019. This is a single stranded RNA virus primarily of Zoonotic origin¹ which later

underwent genetic mutation to affect humans. It can spread from person to person in close contact (1-3) m, by small droplets during talk, coughing or sneezing.² It can also occur through fomite borne transmission

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and through aerosolized respiratory secretion. Vertical transmission is very rare and has not yet been documented.³ About 1-2 % of all cases are asymptomatic with 80% having mild to moderate symptoms. Severe disease occurs in 14% cases with a case fatality rate (CFR) of 2.3%. However, CFR in India has declined to 1.79% since September 2020.⁴ The typical symptoms are of fever, cough, shortness of breath along with diarrhoea.⁵ The standard method of detection of SARS-CoV-2 is by Reverse Transcriptase Polymerase chain reaction (RTPCR) of nasopharyngeal (NP) swab or sputum.⁴ Pregnant women do not seem to be at a higher risk but pregnancy itself being a state of immunosuppression, severe symptoms can occur.⁶ Although several questions about pregnant women and their newborn remain unanswered, simple measures such as spreading awareness in the community and among pregnant women is one our responsibility.

MATERIALS AND METHODS

The study was a retrospective record review of the admitted patients in the SARI isolation ward of Obstetrics & Gynecology department from 1st May 2020 to 15th September 2020.

Inclusion criteria

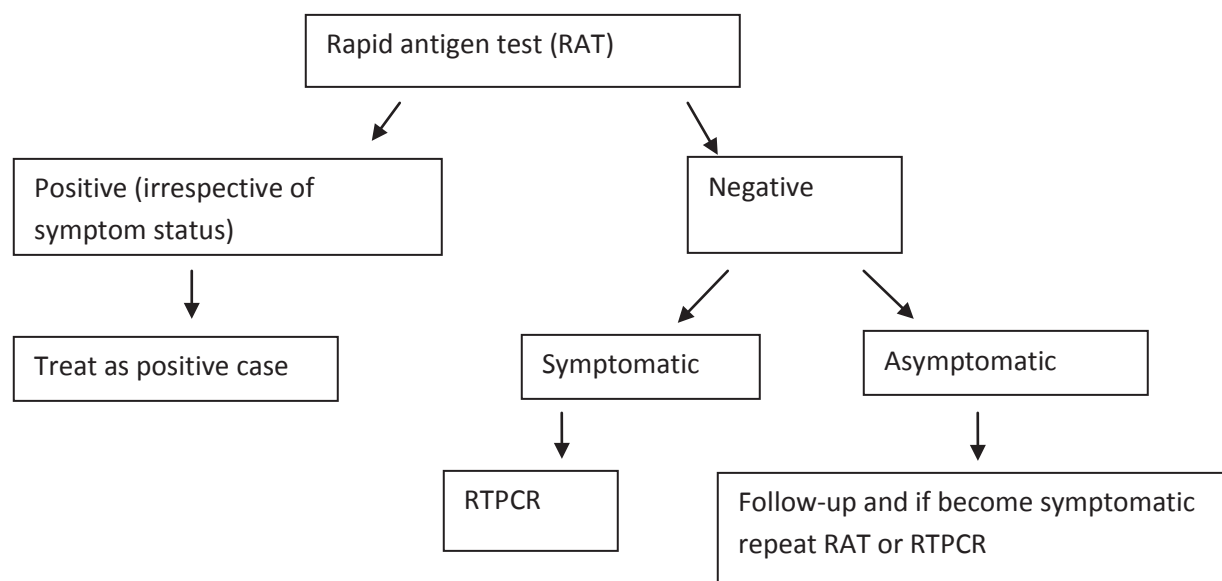
Antenatal and postnatal patients attending the Obstetrics & Gynecology emergency of College of Medicine & JNM Hospital, (COMJNMH) WBUHS, Kalyani with fever or h/o fever during the last 14 days, respiratory distress, cough, h/o contact, travel to endemic areas or coming from a containment zone were admitted to isolation ward. Medical history of any immune-compromised condition like hypertension diabetes, heart disease, kidney disease or HIV positive status was taken.⁴ If any one criterion was present the patient was admitted to isolation.

For diagnosis of COVID-19, sensitivity of chest CT was greater than that of RTPCR (98% vs 71%) in a recent study.⁷ All patients admitted in SARI hospital was tested with RTPCR as during major part of the study period rapid antigen test (RAT) was not available. RAT became available in last phase of the study period. Though RAT was done, still patient symptoms provoked us to do RTPCR, as RTPCR is more sensitive as per ICMR guidelines. On the basis of RTPCR test of nasopharyngeal (NP) swab, the patients were either shifted to a dedicated COVID facility hospital (for a positive report) or continued at isolation ward (for a negative report). ICMR guideline on RAT⁸ is provided in Fig 1. Follow up of the mother and baby was regularly monitored for cases referred to dedicated COVID facility hospital.

RESULTS

Total number of SARI patients was 91. Maximum number of patients (57%) was in the 15 to 25 years age group (Table 1). 76 patients complained of fever (83.5%), 30 from cough (32.9%), 18 suffered from shortness of breath (19.7%) (Table 2). The total number of cases detected to be positive was 6 (6.6%). All patients admitted in SARI hospital was tested with RTPCR as during major part of the study period RAT was not available. Two patients who were initially RAT negative, later reported positive by RTPCR, indicating RAT is a more specific test whereas RTPCR is more sensitive.

The number of preterm birth among the positive cases were 3 (50%), term delivery was 1 (16.6%). Preterm birth before 37 weeks is one of the major concerns leading to neonatal mortality and morbidity. Three patients who delivered at 34 weeks and one at 35 weeks, did not require SNCU admission for the neonates. Complete course of steroids (dexamethasone injection 6mg 12 hours apart for 4 doses) was administered

Figure 1: Algorithm for Covid 19 test interpretation by rapid antigen test (RAT)⁸**Table 1:** Age distribution of patients at SARI isolation ward

Age groups	Number of patients	Percentage
<15 years	1	1.09%
15-25 years	52	57.14%
25-35 years	36	39.56%
>35 years	2	2.19%

Table 2: Presenting symptoms of patients at isolation ward (n=91)

Symptoms	Number of patients	Percentage
Fever	76	83.5%
Cough	30	32.9%
Shortness of breath	18	19.7%
History of contact	5	5.4%
Resident of containment Zone	7	7.6%

in every preterm delivery for minimizing neonatal respiratory complications. The rate of operative delivery by cesarean section was as high as 50% (n=3) and vaginal 16.6% (n=1). Indications of cesarean delivery varied

from antepartum hemorrhage in one case to previous scar in uterus with tenderness in other, to fetal distress in yet another case. The operations were mostly for usual obstetric indications and no relation to any

Table 3: Maternal features of confirmed cases of SARS-CoV 2(n=6)

Characteristics	Value	Percentage
Age(mean \pm SD)	22.7 \pm 25.3	
Gestational age weeks (mean \pm SD)	30.3 \pm 7	
Delivery characteristics		
Total number delivered	5	83.3%
Delivered by Cesarean section	3	50%
Delivered Vaginally	1	16.67%
Intra uterine fetal death @ 21 weeks TOP	1	16.67%
Preterm birth	3	50%
Presenting signs and symptoms		
Fever	4	66.6%
Cough	1	16.6%
Shortness of breath	2	33.3%
Bleeding per vaginum	1	16.6%
Anemia	1	16.6%
HDU admission	2	33.3%
Maternal mortality	1	16.6%

maternal distress resulting from infection was detected. CFR (Case fatality rate) was n=1 (16.6%) out of all positive cases. The cause of maternal death was as a result of cardio respiratory failure resulting from covid infection. HDU admission was needed in n=2 cases out of which one case ultimately resulted in mortality. IUFD occurred in n=1 case and neonatal mortality was nil n=0. IUFD occurred at around 21 weeks of gestation, the exact cause of which could not be ascertained. (Table 3).

DISCUSSION

Severe Acute Respiratory Infection (SARI) is defined as an acute respiratory infection (ARI) with history of fever or measured temperature $\geq 38^{\circ}\text{C}$ and cough; onset within the last ~ 10 days; and requiring hospitalization. However, the absence of fever does not exclude viral infection.⁹

Early triage of all patients with SARI is to identify and sort out the Covid positive cases amongst them.

With the little amount of research on COVID-19 in pregnancy till date, it does not show an increased risk to their health as per the International Federation of Gynaecology and Obstetrics. Safe procedures of hand hygiene, cough etiquette, social distancing, staying home when sick and disinfecting contaminated surfaces should be encouraged.¹⁰ Government of India advises that disinfection of surfaces should be done with 1% sodium hypochlorite solution to control the spread of fomites, which is regularly followed at our isolation ward. Other protocols followed are maintaining a distance of one meter with others, hand washing and sanitizing, use of personal protective equipment (PPE), and thorough counseling. Avoiding non-essential travel and

gatherings to celebrate 7th month milestone and limiting number of visitors to greet the mother and baby post-delivery are advised to mothers and their family.¹¹ Antenatal care, can be followed over the telephone or with video conferencing as appropriate. For women with COVID 19, appointment may be delayed during the quarantine period. If symptoms persist they should call and make an appointment. In confirmed pregnant women an increased risk of preterm delivery and cesarean section was noted as compared to other suspected women.¹² The rate of preterm birth and cesarean sections in our study are comparable to other reports.¹³ Several authors cited fetal distress is the main reason for increasing cesarean section rates.¹⁴

The most common presenting symptom of all isolation admissions as well as confirmed cases was fever in this study, which is also evident from other studies.¹⁵ The mean age of confirmed cases was 22.75 with maximum patients in the 15 to 25 years age group. According to CDC the rate of hospitalization increases with increasing age but since we are dealing with pregnancy the average age was less in our institute. The mean gestational age was 30.3 weeks. One study¹³ reported that around 20% women presented at earlier weeks, although various authors cited delivery at different weeks. Perinatal outcomes as reported by various authors did not show any adverse outcomes.¹⁴ Regarding maternal morbidity, two cases of maternal ICU admission were reported.¹⁶ In our study we found 2 cases of maternal admission to HDU among the confirmed cases which ultimately resulted in mortality. Data related specifically to maternal mortality from COVID-19 remain sparse. Another study reported seven cases of maternal mortality in Iran believed to result directly from COVID-19.¹⁷

SARS- COV 2 has not been detected in blood, amniotic fluid or placenta till date.¹²

There is controversy about the timing of cord clamping. The ACOG recommends immediate cord clamping, whereas the RCOG recommends delayed cord clamping.¹⁸ However we followed the latter method as for other non Covid cases. According to ICMR, there are no recorded cases of vaginal secretions being tested positive for COVID-19. Also there are no recorded cases of breast milk being tested positive for COVID -19.⁷ Pregnant women with co-morbidities such as obesity and gestational diabetes are likely at increased risk for severe illness consistent with the general population with similar comorbidities as per ACOG updates September 2020.¹⁹ Transmission after birth is a major concern as a result of contact with maternal infectious respiratory secretions. As per ICMR recommendations we practiced temporary separation of the newborn with the COVID-19 positive mother. In case rooming in of the new-born with mother in the same hospital room is done measures like putting curtain in between mother and newborn or keeping the newborn more than 6 ft away from the mother should be taken.⁶ We put COVID-19 positive mother on a facemask and it was compulsory during breast feeding. Proper hand hygiene of mother during breast feeding was promoted. Hand hygiene should be practiced before each feed and other close contact with her new-born.⁶ During temporary separation, mothers who wish to breastfeed should be encouraged to express their breast milk using breast pump and should practice hand hygiene.

Limitations of the study was the small group of patient pool. Thus it was difficult to ascertain the correlation between disease and outcome. The short study period was another handicap.

CONCLUSION

Adequate management and care to pregnant COVID-19 patients with protection of

healthcare workers should be our aim. Multi-disciplinary team approach should be adopted. Clinical recommendations from various government protocols or national and international bodies which are changing almost constantly should be followed for management of all suspected patients. Proper planning and precaution can help control of the spread of COVID-19. Adequate steps need to be taken to prevent the spread to newborn.

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Abbreviations used:

RTPCR: Reverse transcriptase polymerase chain reaction

NP: Nasopharyngeal

RAT: Rapid Antigen Test

IUFD: Intra Uterine Fetal Death

HDU: High Dependency Unit

GTCS: Generalised Tonic Clonic Seizure

SNCU: Sick Neonatal care unit

TOP: Termination of pregnancy