

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20263033>

Original Research Article

Maternal and fetal outcomes in cases of mild SARS-CoV-2 infections in pregnant women at a tertiary teaching hospital: a retrospective observational study

Amol P. Pawar, Mohini S. Shinde, Swapnali G. Garude*

Department of Obstetrics and Gynecology, Nowrosjee Wadia Maternity Hospital, Mumbai, Maharashtra, India

Received: 31 May 2026

Revised: 26 July 2026

Accepted: 01 August 2026

*Correspondence:

Dr. Swapnali G. Garude,

E-mail: aqua.swapnali@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: The COVID-19 pandemic has posed unprecedented challenges including for pregnant women, a physiologically vulnerable group. There is limited data specifically on mild or asymptomatic SARS-CoV-2 infections during pregnancy and their effect on maternal and fetal outcomes. To analyse maternal and fetal outcomes in cases of mild SARS-CoV-2 infections in pregnant women hospitalized at a tertiary teaching hospital and to determine the rate of possible vertical transmission.

Methods: A retrospective observational study was conducted from June 2020 to June 2022 at the Department of Obstetrics and Gynaecology of Nowrosjee Wadia Maternity Hospital, a tertiary teaching hospital. Data of 152 pregnant women with confirmed mild or asymptomatic SARS-CoV-2 infection were retrospectively analysed from medical records. Statistical analysis used Chi-Square test, Fisher's Exact test and Mann-Whitney U test. Significance was set at $p \leq 0.05$.

Results: A total of 152 hospitalized pregnant women were included. Majority (80.9%) were asymptomatic; 19.1% had mild symptoms (cough 5.3%, fever 4.6%). The live birth rate was 97.4%. LSCS was performed in 61.8% of cases. Perinatal COVID-19 infection was confirmed in only 1.3% of neonates (vertical transmission rate). NICU admission rate was 9.9%. Statistically significant differences between symptomatic and asymptomatic women were found in pulse rate ($p=0.007$), D-dimer levels ($p=0.009$), ECG findings (sinus tachycardia, $p<0.0001$) and neonatal birth weight ($p=0.034$). No significant differences were observed in mode of delivery, APGAR scores or NICU admission rates between the two groups.

Conclusions: Most pregnant women with mild or asymptomatic COVID-19 had favourable maternal and fetal outcomes. Symptomatic women showed significantly higher D-dimer levels, pulse rates and lower birth weights, indicating a need for targeted monitoring. Vertical transmission was rare. Routine COVID-19 screening of all pregnant women remains essential.

Keywords: COVID-19, Fetal outcomes, Maternal outcomes, Mild infection, Pregnancy, Retrospective study, SARS-CoV-2, Vertical transmission

INTRODUCTION

Coronavirus disease 2019 (COVID-19), caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), emerged in late 2019 in Wuhan, China and rapidly evolved into a global pandemic. The virus

belongs to the family Coronaviridae-an enveloped, positive-stranded RNA virus that causes illnesses ranging from mild self-limiting respiratory infections to severe pneumonia with systemic impairment.¹ According to World Health Organization (WHO) reports, the global case-fatality rate ranged from 3–4%, with a higher

proportion requiring intensive care unit (ICU) admission.² Pregnancy is a physiological state associated with significant hormonal and anatomical changes - elevated progesterone stimulates the respiratory centre causing hyperventilation, while the expanding gravid uterus reduces functional residual capacity. These adaptations, combined with immune modulation, may predispose pregnant women to heightened susceptibility to respiratory infections, including COVID-19.³

SARS-CoV-2 cell entry is mediated via the angiotensin-converting enzyme 2 (ACE2) receptor and the serine protease TMPRSS2. Importantly, co-expression of these receptors in the placenta is minimal, which may explain the low rate of placental infection and fetal vertical transmission.⁴ Nevertheless, ischaemic injury to the placenta compromising the syncytiotrophoblast barrier could facilitate fetal transmission without requiring direct placental cell infection.

A systematic review found that 6–8% of universally screened pregnant women tested positive for COVID-19, with 54–77% being asymptomatic.⁵ While severe maternal infection is associated with two- to three-fold increased risk of preterm birth - primarily iatrogenic - the evidence for adverse fetal outcomes in mild infection remains limited.^{6,7}

This study was undertaken to fill this knowledge gap by analysing the maternal and fetal outcomes of hospitalized pregnant women with confirmed mild or asymptomatic SARS-CoV-2 infections at a tertiary teaching hospital, with the aim of guiding clinical practice and future pandemic preparedness policies.

METHODS

Study design and setting

A retrospective observational study was conducted in the Department of Obstetrics and Gynaecology of Nowrosjee Wadia Maternity Hospital, a tertiary teaching hospital in a metropolitan city in India. Data were collected from records spanning June 2020 to June 2022.

Study population

Hospitalized pregnant women with confirmed SARS-CoV-2 infection (positive RT-PCR or rapid antigen test) at any gestational age, presenting with asymptomatic or mild COVID-19, were eligible for inclusion. Moderate-to-severe COVID-19, non-hospitalized mild cases and pregnancies with fetal malformations were excluded.

Definitions

Asymptomatic infection

Positive virological test with no COVID-19-consistent symptoms.

Mild illness

Any sign/symptom of COVID-19 (fever, cough, sore throat, myalgia, nausea, diarrhoea, loss of taste/smell) without dyspnoea or abnormal chest imaging.

Moderate illness

Lower respiratory disease with SpO₂ ≥ 94% on room air at sea level (excluded from present study).

Sample size

Sample size was calculated using the SAS 9.2 package, based on fever incidence in mild COVID-19 infection (H₀: 64.2%; H₁: 50.6%), yielding a minimum sample of 152 cases (power=80%, alpha=0.05, Z-test for binomial proportion). All 152 cases meeting the inclusion/exclusion criteria were included from the medical records department.

Data collection

Data were collected retrospectively from indoor and outpatient department (OPD) case records at discharge.

The case record form (CRF) captured: demographics, obstetric index, gestational age at COVID-19 diagnosis, signs/symptoms, blood investigations (CBC, LFT, RFT, PT-INR, aPTT, serum ferritin, D-dimer), ECG findings, vaccination status, mode of delivery, delivery outcome, neonatal parameters (birth weight, APGAR score, NICU admission, evidence of vertical transmission by RT-PCR/antibody test).

Statistical analysis

Qualitative data were expressed as frequencies and percentages. Association between qualitative variables was assessed using Pearson's chi-square test, with continuity correction for 2×2 tables. Fisher's Exact test was applied where expected counts were <5.

Quantitative data were expressed as Mean±SD and Median (IQR). Comparison between groups was performed using the Mann-Whitney U test (all continuous data failed the Shapiro-Wilk normality test).

Statistical significance was set at p ≤ 0.05. Analysis was performed using PSPP v2.0.1 and MS Excel (Microsoft Office 365).

Ethical approval

The study was approved by the institutional ethics committee for academic research projects (ECARP).

A waiver of consent was granted owing to the retrospective design. No additional tests or investigations were performed for the study.

RESULTS

Demographic profile

Of 516 deliveries conducted during the study period, 298 (57.8%) were COVID-19 positive. Of these, 174 were asymptomatic or mildly symptomatic; 152 met the inclusion criteria and are analysed here. The majority (86.2%) were aged 25–36 years. Nearly half (44.7%) were primigravida (Table 1).

COVID-19 clinical spectrum

Of the 152 women, 123 (80.9%) were asymptomatic and 29 (19.1%) had mild symptoms. Among symptomatic women, cough was the most frequent symptom (5.3%), followed by fever (4.6%) and cough with cold (3.9%). Abdominal pain was the most common chief complaint (25.0%), while 34.9% reported no complaints, underscoring the importance of universal screening (Table 2).

Table 1: Age distribution of participants.

Age group (in years)	No.	%
19–24	14	9.2
25–30	60	39.5
31–36	71	46.7
37 and above	7	4.6
Total	152	100.0

Table 2: COVID-19 clinical spectrum among study participants.

COVID-19 sign/symptom	No.	%
Cough	8	5.3
Fever	7	4.6
Cough+Cold	6	3.9
Cold	2	1.3
Cough+Body ache+Fever	2	1.3
Other symptoms	4	2.6
Asymptomatic	123	80.9
Total	152	100.0

Table 3: Key laboratory and ECG findings.

Parameters	Symptomatic (n=29)	Asymptomatic (n=123)	P value
Abnormal D-dimer, n (%)	13 (44.8%)	9 (7.3%)	0.000005*
Sinus tachycardia on ECG, n (%)	14 (48.3%)	2 (1.6%)	<0.0001*
Anaemia, n (%)	3 (42.9%)	4 (57.1%)	0.128 (NS)
Mean pulse rate±SD (bpm)	91.17±7.54	87.19±6.17	0.007*
Mean SpO ₂ ±SD (%)	98.83±0.47	98.99±0.57	0.154 (NS)

*Statistically significant (p≤0.05), NS=Not Significant

Table 4: Mode of delivery and delivery outcomes.

Variables	No.	%
Mode of delivery		
Lower segment caesarean section (LSCS)	94	61.8
Normal vaginal delivery	51	33.6
Instrumental delivery	7	4.6
Delivery outcome		
Live birth	148	97.4
Abortion	1	0.7
Fresh stillbirth	1	0.7
Macerated stillbirth (tetralogy of fallot)	1	0.7
Neonatal death (day 15)	1	0.7

Vaccination and comorbidities

87.5% of the study population were unvaccinated for COVID-19, reflecting the early pandemic period (June 2020–June 2022) when vaccines were unavailable or hesitancy was prevalent. Pre-existing medical conditions were noted in 21.7% of women, most commonly gestational hypertension, gestational hypothyroidism and gestational diabetes mellitus (each 2.6%). Obstetric complications or high-risk factors were present in 57.9%, the most common being previous LSCS (18.4%) and PROM (3.9%).

Laboratory and ECG findings

D-dimer levels were abnormal in 22 women (14.5%), with a significantly higher prevalence in symptomatic women (44.8%) vs. asymptomatic women (7.3%, $p<0.0001$). Sinus tachycardia on ECG was detected in 16 women (10.5%), with a highly significant association with symptomatic status (48.3% vs. 1.6%, $p<0.0001$) (Table 3).

Mode and outcome of delivery

LSCS was the mode of delivery in 94 cases (61.8%), normal vaginal delivery in 51 (33.6%) and instrumental delivery in 7 (4.6%). The predominant indication for LSCS was previous LSCS with unwillingness for trial of

labour after caesarean (TOLAC) in 16 cases (10.5%), followed by maternal exhaustion in second stage (3.9%) and PROM with non-progress of labour (3.9%) (Table 4).

Neonatal outcomes

The NICU admission rate was 9.9% ($n=15$), with preterm birth, low birth weight and respiratory distress being the primary indications (26.7%). Perinatal COVID-19 infection was confirmed in only 2 neonates (1.3%), representing a very low rate of vertical transmission. APGAR scores at birth were ≥ 8 in 92.7% of neonates and improved further at 5 minutes (93.4% scoring 9). Symptomatic mothers had significantly lower mean birth weight babies (2.74 ± 0.43 kg) compared to asymptomatic mothers (3.03 ± 0.63 kg; $p=0.034$) (Table 5).

Comparative analysis symptomatic vs. asymptomatic women

Table 6 summarises the Mann-Whitney U test comparisons for continuous variables between symptomatic and asymptomatic groups. Statistically significant differences were identified for pulse rate ($p=0.007$), D-dimer levels ($p=0.009$) and maximum birth weight ($p=0.034$). No significant differences were found for age, gestational age at admission, SpO_2 , gestation at delivery, hospital duration, time to RT-PCR negativity, APGAR scores or haemoglobin (Table 6).

Table 5: Neonatal outcomes-symptomatic vs asymptomatic mothers.

Neonatal parameters	Symptomatic (n=29)	Asymptomatic (n=123)	P value
Mean birth weight $\pm$ SD (kg)	2.74 $\pm$ 0.43	3.03 $\pm$ 0.63	0.034*
APGAR score at birth (mean $\pm$ SD)	8.03 $\pm$ 0.19	7.80 $\pm$ 1.09	0.139 (NS)
APGAR score at 5 min (mean $\pm$ SD)	9.00 $\pm$ 0.00	8.93 $\pm$ 0.30	0.154 (NS)
NICU admission, n (%)	2 (6.9%)	13 (10.6%)	0.737 (NS)
Perinatal COVID-19 infection, n (%)	—	2 (1.3%)	—

*Statistically significant, NS=Not Significant.

Table 6: Comparison of key clinical variables by COVID-19 clinical spectrum (Mann-Whitney U test).

Variables	Symptomatic Mean $\pm$ SD	Asymptomatic Mean $\pm$ SD	P value	Significance
Age (in years)	29.17 $\pm$ 4.06	30.59 $\pm$ 4.32	0.128	NS
Gestation on admission (weeks)	36.40 $\pm$ 3.54	37.39 $\pm$ 2.90	0.259	NS
Pulse rate (bpm)	91.17 $\pm$ 7.54	87.19 $\pm$ 6.17	0.007	Significant*
SpO_2 (%)	98.83 $\pm$ 0.47	98.99 $\pm$ 0.57	0.154	NS
Gestation at delivery (weeks)	38.64 $\pm$ 1.51	37.82 $\pm$ 2.44	0.095	NS
Hospital stay (days)	10.00 $\pm$ 4.28	10.03 $\pm$ 7.91	0.265	NS
Days to RT-PCR negativity	8.59 $\pm$ 4.36	7.43 $\pm$ 3.69	0.120	NS
D-dimer level (units)	1.74 $\pm$ 0.86	1.27 $\pm$ 0.66	0.009	Significant*
Max. birth weight (kg)	2.74 $\pm$ 0.43	3.03 $\pm$ 0.63	0.034	Significant*
APGAR at birth (/10)	8.03 $\pm$ 0.19	7.80 $\pm$ 1.09	0.139	NS
APGAR at 5 min (/10)	9.00 $\pm$ 0.00	8.93 $\pm$ 0.30	0.154	NS
Haemoglobin (g/dl)	12.29 $\pm$ 1.37	12.46 $\pm$ 0.97	0.968	NS

* $p\leq 0.05$ =Statistically Significant, NS=Not Significant

DISCUSSION

This retrospective study of 152 hospitalized pregnant women with mild or asymptomatic SARS-CoV-2 infection provides important insights into the clinical spectrum, maternal outcomes and fetal outcomes in this subset. The findings are consistent with the global literature demonstrating that the majority of pregnant women with COVID-19 remain asymptomatic or experience mild disease.

Clinical spectrum and symptomatology

Consistent with published literature, 80.9% of the study population were asymptomatic. This proportion aligns with systematic reviews reporting asymptomatic rates of 54–77% among universally screened pregnant women.⁸ The younger mean age of symptomatic women (29.17 vs. 30.59 years) in the cohort is comparable to the findings of Yee et al (median 28–34 years) and Debrabandere et al (mean 27.4 years for mild disease).^{9,10}

D-dimer levels and thrombotic risk

A significant association was found between symptomatic status and elevated D-dimer levels ($p < 0.0001$), with 44.8% of symptomatic women demonstrating abnormal values compared to only 7.3% of asymptomatic women. This is concordant with evidence that COVID-19 induces a prothrombotic state.^{11,12}

However, physiological hypercoagulability in pregnancy complicates the use of D-dimer as a sole marker for COVID-19 severity, as highlighted by Hapshy et al.¹³ The present findings support monitoring D-dimer in symptomatic pregnant women to guide thromboprophylaxis decisions.

Cardiovascular findings

Sinus tachycardia was detected in 48.3% of symptomatic vs. only 1.6% of asymptomatic women ($p < 0.0001$), indicating a significant cardiovascular response to mild COVID-19 infection. This aligns with reports by Yousefzadeh et al and the systematic review by Yaghoobpoor et al (47,582 cases), which associated SARS-CoV-2 in pregnancy with cardiovascular complications including pre-eclampsia and heart failure.^{14,15} The correlation of sinus tachycardia with elevated D-dimer in symptomatic women suggests overlapping coagulation and cardiovascular stress responses.

Mode and outcome of delivery

The LSCS rate of 61.8% in this study is higher than general population rates, mirroring trends reported globally during the pandemic.¹⁶ Importantly, no statistically significant association was found between COVID-19 symptom status and mode of delivery ($p = 0.244$), indicating that

COVID-19 symptomatology per se did not drive the decision for LSCS.

Rather, prior uterine scar, non-progress of labour and other obstetric indications were the primary drivers. This aligns with WHO and ACOG guidance that COVID-19 should not be an independent indication for caesarean delivery.^{17,18} The live birth rate of 97.4% is reassuring. Adverse outcomes (stillbirth, neonatal death) occurred at 0.7% each, comparable to reports from other studies of mild COVID-19 in pregnancy.¹⁹

Neonatal outcomes and vertical transmission

The perinatal COVID-19 infection rate of 1.3% is consistent with globally reported rates of $< 3\%$ in newborns immediately after birth. This low rate supports the evidence that vertical transmission from mothers with mild or asymptomatic SARS-CoV-2 infection is uncommon. As proposed by Figueiro-Filho et al high ACE-2 receptor expression during pregnancy may confer a protective vasodilatory and anti-inflammatory effect, potentially limiting placental viral entry.²⁰

The significantly lower mean birth weight in infants born to symptomatic mothers (2.74 vs. 3.03 kg, $p = 0.034$) is consistent with a meta-analysis reporting a mean birth weight reduction of ~240 g in infants of symptomatic mothers. This may reflect the impact of maternal inflammatory response or reduced oxygenation on fetal growth, even in mild infection.

Despite lower birth weights, APGAR scores at birth and 5 minutes were not significantly different between groups ($p = 0.139$ and 0.154 respectively), suggesting that the immediate post-delivery adaptive capacity of neonates was unaffected by mild maternal COVID-19. The 9.9% NICU admission rate is moderate and consistent with comparable studies.²¹⁻²³

Vaccination status

The high rate of unvaccinated women (87.5%) reflects the early pandemic period. Although vaccinated women showed lower symptomatic rates (10.5% vs. 20.3%), the difference was not statistically significant ($p = 0.532$), possibly due to the small number of vaccinated individuals in this cohort. This limits inference but is consistent with literature showing vaccination reduces symptom severity.^{24,25}

Limitations

Retrospective, single-centre design

Data relied on existing medical records (June 2020–June 2022), which risks incomplete documentation and cannot establish causality, only association.

No COVID-19 negative comparison group

Outcomes were compared between symptomatic and asymptomatic COVID-positive women only, not against a SARS-CoV-2-negative pregnant cohort, limiting attribution of findings specifically to the infection.

Small symptomatic subgroup

Only 29 of 152 women were symptomatic, reducing statistical power for subgroup comparisons (e.g., anaemia, vaccination effect) and widening confidence intervals for those estimates.

Selection bias toward hospitalized cases

The cohort included only hospitalized mild/asymptomatic cases, excluding non-hospitalized mild infections managed at home, so findings may not generalize to the broader outpatient population.

Underpowered vaccination analysis

With 87.5% unvaccinated, the study could not reliably assess vaccination's protective effect.

No long-term neonatal follow-up

Outcomes were assessed only up to discharge/immediate neonatal period; developmental or long-term effects of in-utero exposure were not captured.

Single-centre, single-region setting

Findings from one tertiary hospital in metropolitan India may not be generalizable to other populations, healthcare settings or SARS-CoV-2 variants circulating outside the study period.

Variability in testing timing

Vertical transmission and RT-PCR negativity data depended on testing protocols/timing that may not have been uniformly standardized across the two-year period, which spanned multiple pandemic waves and variants.

CONCLUSION

The present retrospective study demonstrates that the majority of pregnant women with mild or asymptomatic SARS-CoV-2 infection experience favourable maternal and fetal outcomes. The high live birth rate (97.4%), low vertical transmission rate (1.3%) and satisfactory neonatal APGAR scores are reassuring. However, symptomatic women demonstrate significantly elevated pulse rates, D-dimer levels and lower neonatal birth weights - highlighting physiological and coagulation perturbations that necessitate vigilant monitoring even in apparently mild infection.

These findings reinforce the imperative for universal COVID-19 screening of all hospitalized pregnant women, irrespective of presenting symptoms. Personalized clinical surveillance particularly cardiovascular monitoring and thromboprophylaxis assessment is warranted for symptomatic cases. Future prospective multi-centre studies with larger cohorts are needed to definitively characterize the impact of mild COVID-19 on pregnancy outcomes and to assess the long-term developmental implications for exposed neonates.

Funding: No funding sources

Conflict of interest: None declared

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

REFERENCES

1. Jakharia A, Rozario PV, Mahanta J. Social Factors and Lack of Awareness Affecting the High Maternal Mortality in Northeast-India. Indian J Comm Med Publ Indian Assoc Preven Social Med. 2026;51(1):4.
2. Sanyaolu A, Okorie C, Hosein Z, Patidar R, Desai P, Prakash S, et al. Global pandemicity of COVID-19: situation report as of June 9, 2020. Infect Dis Res Treat. 2021;14:1178633721991260.
3. Chen H, Guo J, Wang C, Luo F, Yu X, Zhang W, et al. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: A retrospective review of medical records. Lancet. 2020;395(10226):809-15.
4. Schwartz DA. An analysis of 38 pregnant women with COVID-19, their newborn infants, and maternal-fetal transmission of SARS-CoV-2: maternal coronavirus infections and pregnancy outcomes. Arch Pathol Labor Med. 2020;144(7):799-805.
5. Wei SQ, Bilodeau-Bertrand M, Liu S, Auger N. The impact of COVID-19 on pregnancy outcomes: a systematic review and meta-analysis. CMAJ. 2021;193(16):72988-91.
6. Vousden N, Bunch K, Morris E, Simpson N, Gale C, O'Brien P, et al. The incidence, characteristics and outcomes of pregnant women hospitalized with symptomatic and asymptomatic SARS-CoV-2 infection in the UK from March to September 2020: a national cohort study using the UK Obstetric Surveillance System (UKOSS). PloS One. 2021;16(5):329.
7. Allotey J, Stallings E, Bonet M, Yap M, Chatterjee S, Kew T, et al. Clinical manifestations, risk factors and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: living systematic review and meta-analysis. BMJ. 2020;1:370.
8. Allotey J, Stallings E, Bonet M, Yap M, Chatterjee S, Kew T, et al. Clinical manifestations, risk factors and maternal and perinatal outcomes of coronavirus disease 2019 in pregnancy: living systematic review and meta-analysis. BMJ. 2020;1:370.
9. Yee J, Kim W, Han JM, Yoon HY, Lee N. Clinical manifestations and perinatal outcomes of pregnant

- women with COVID-19: a systematic review and meta-analysis. *Sci Rep.* 2020;10:18126.
10. Debrabandere ML, Farabaugh DC, Giordano C. A Review on Mode of Delivery during COVID-19 between December 2019 and April 2020. *Am J Perinatol.* 2021;38(03):332-341.
 11. Aldikactioglu Talmac M, Yalcin Bahat P, Bestel A, Vural NA, Karadeniz O, Polat I. Assessment of D-dimer levels in pregnant women diagnosed with COVID-19: A case-control study. *J Matern Fetal Neonatal Med.* 2023;36(2):282.
 12. Coomber C, Adamson M, Collins P, Jenkins V, Metodiev Y, Lloyd de L. D- dimers are elevated in pregnant women with and without COVID-19. *Int J Obstet Anesth.* 2021;46(1):103001.
 13. Hapshy V, Aziz D, Kahar P, Khanna D, Johnson KE, Parmar MS, et al. COVID-19 and pregnancy: risk, symptoms, diagnosis and treatment. *SN Compr Clin Med.* 2021;3(7):1477-87.
 14. Yousefzadeh M, Asgarian A, Ahangari R, Vahedian M, Mirzaie M. Electrocardiographic changes in pregnant women with COVID-19. *J Pract Cardiovas Sci.* 2022;8(1):17–21.
 15. Yaghoobpoor S, Fathi M, Vakili K, Tutunchian Z, Dehghani M, Bahrami A, et al. Cardiovascular complications of COVID-19 among pregnant women and their fetuses: a systematic review. *J Clin Med.* 2022;11(20):6194.
 16. Gharacheh M, Kalan ME, Khalili N, Ranjbar F. An increase in cesarean section rate during the first wave of COVID-19 pandemic in Iran. *BMC Publ Health.* 2023;23:961
 17. Jardine J, Relph S, Magee LA, von Dadelszen P, Morris E, Ross-Davie M, et al. Maternity services in the UK during the coronavirus disease 2019 pandemic: a national survey of modifications to standard care. *BJOG: Int J Obstet Gynaecol.* 2021;128(5):880-9.
 18. Poon LC, Yang H, Kapur A, Melamed N, Dao B, Divakar H, et al. Global interim guidance on coronavirus disease 2019 (COVID-19) during pregnancy and puerperium from FIGO and allied partners: Information for healthcare professionals. *Int J Gynecology Obstetrics.* 2020;149(3):273-86.
 19. Santos CAD, Fonseca Filho GG, Alves MM, Macedo EYL, Pontes MG de A, Paula AP, et al. Maternal and neonatal outcomes associated with mild COVID- 19 infection in an obstetric cohort in Brazil. *Am J Trop Med Hyg.* 2022;107(5):1060–5.
 20. Figueiro-Filho EA, Hobson SR, Farine D, Yudin MH. Highly expressed ACE-2 receptors during pregnancy: A protective factor for SARS-COV-2 infection. *Med Hypotheses.* 2021;153:110641.
 21. Sheth S, Shah N, Bhandari V. Outcomes in COVID-19 positive neonates and possibility of viral vertical transmission: a narrative review. *Am J Perinatol.* 2020;37(12):1208-16.
 22. Dumitriu D, Emeruwa UN, Hanft E, Liao GV, Ludwig E, Walzer L, et al. Outcomes of neonates born to mothers with severe acute respiratory syndrome coronavirus 2 infection at a large medical center in New York City. *JAMA Pediatr.* 2021;175(2):157-67.
 23. Jegatheesan P, Narasimhan SR, Huang A, Nudelman M, Song D. Higher NICU admissions in infants born at ≥ 35 weeks gestational age during the COVID-19 pandemic. *Front Pediatr.* 2023;11:295.
 24. Hall VJ, Foulkes S, Saei A, Andrews N, Oguti B, Charlett A, et al. SIREN Study Group. COVID-19 vaccine coverage in health-care workers in England and effectiveness of BNT162b2 mRNA vaccine against infection (SIREN): a prospective, multicentre, cohort study. *Lancet.* 2021;397(10286):1725-735.
 25. Dagan N, Barda N, Kepten E, Miron O, Perchik S, Katz MA, et al. BNT162b2 mRNA COVID-19 vaccine in a nationwide mass vaccination setting. *N Engl J Med.* 2021;384(15):1412-23.

Cite this article as: Pawar AP, Shinde MS, Garude SG. Maternal and fetal outcomes in cases of mild SARS-CoV-2 infections in pregnant women at a tertiary teaching hospital: a retrospective observational study. *Int J Reprod Contracept Obstet Gynecol* 2026;15:3497-503.