Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Table 1
Clinical and biochemical characteristics of patients with serological diagnosis of COVID-19 and Hypertensive Pregnancy Disorders. Source: Data obtained from the Obstetrics inpatient Department. Hospital Nacional Edgardo Rebagliati Martins. March-August 2020. AST: Aspartate aminotransferase. * Patients with lymphopenia (lymphocytes <1000 cells/mm^3). + Patients who had stillbirth.

Case	Age	Gestational Age	Parity	Symptoms	White blood cell x 10 ^{3} (Lymphocytes %)	AST (U/L)	Delivery	Hypertensive Pregnancy Disorder
1	39	39	Multiparity	Asymptomatic	7.5 (16.7)	64	Caesarean Section	Severe Preeclampsia
2	33	34	Multiparity	Asymptomatic	9.1 (31.9)	53	Caesarean Section	Severe Preeclampsia
3	43	40	Multiparity	Asymptomatic	12.3 (28.4)	36	Caesarean Section	Severe Preeclampsia
4	21	36	Nulliparity	Asymptomatic	7.4(25.6)	42	Caesarean Section	Mild Preeclampsia
5	31	33	Nulliparity	Asymptomatic	9.3 (27)	53	Caesarean Section	Severe Preeclampsia
6	33	38	Multiparity	Asymptomatic	7.7 (22.2)	14	Caesarean Section	Gestational Hypertension
7	45	38	Multiparity	Asymptomatic	14.5 (32.8)	25	Caesarean Section	Severe Preeclampsia
8	42	40	Multiparity	Headache	8.8 (19.2)	51	Vaginal Delivery	Gestational Hypertension
9	32	40	Multiparity	Asymptomatic	19.2 (4.73) *	39	Vaginal Delivery	Mild Preeclampsia
10	37	40	Multiparity	Asymptomatic	8.4 (35.3)	16	Caesarean Section	Severe Preeclampsia
11	45	34	Nulliparity	Asymptomatic	6.0 (15.8) *	27	Caesarean Section	Severe Preeclampsia and Eclampsia
12	33	39	Multiparity	Asymptomatic	10.2 (33.9)	27	Caesarean Section	Gestational Hypertension
13	29	34	Multiparity	Asymptomatic	18 (3.7) *	904	Caesarean Section	Severe Preeclampsia and Eclampsia
14	39	39	Multiparity	Asymptomatic	11 (27)	64	Cesarean Hysterectomy	Hellp Syndrome
15	29	36	Nulliparity	Asymptomatic	6.8 (21.6)	449	Caesarean Section	Hellp Syndrome
16	32	37	Multiparity	Asymptomatic	10.1 (27.5)	16	Caesarean Section	Mild Preeclampsia
17	17	23	Nulliparity	Cough	7.9 (17.7)	59	Caesarean Section	Hellp Syndrome+
18	27	23	Nulliparity	Cough	7.8 (17.8)	54	Caesarean Section	Hellp Syndrome
19	24	39	Nulliparity	Asymptomatic	12.7 (22.9)	33	Caesarean Section	Severe Preeclampsia
20	31	33	Multiparity	Fever	9.3 (29.9)	288	Vaginal Delivery	Hellp Syndrome +

Declaration of Competing Interest

The authors report no declarations of interest.

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Universal screening identifies asymptomatic carriers of SARS-CoV-2 among pregnant women in India

Dear Editor,

Asymptomatic women with coronavirus disease 2019 (COVID-19) are at risk of infecting their newborns and also pose a risk to healthcare providers and other patients [1,2,3]. Considering this, Indian Council of Medical Research (ICMR) recommended universal testing for SARS-CoV-2 in pregnant women [4]. Maharashtra is the worst-hit state in India and universal screening strategy for pregnant women was implemented in several public hospitals during this time. Herein, we report the outcome of implementation of this strategy.

Women presenting in labour or likely to deliver in next 5 days were screened for SARS-CoV-2 as per ICMR guidelines [4]. Data from 25th April to 20th May, 2020 was collected from 15 participating hospitals of PregCovid registry network (https://pregcovid.com/). In all, 141/1140 pregnant women were tested positive for SARS-CoV-2 resulting in a prevalence of 12.3% (Mean 9.4, 95% CI 6.6 – 12.1) in Maharashtra, India [Fig. 1A]. The prevalence of SARS-CoV-2 infection in women varied (0-40%) across the different hospitals in the state. For estimation of numbers of symptomatic and asymptomatic SARS-CoV-2 positive

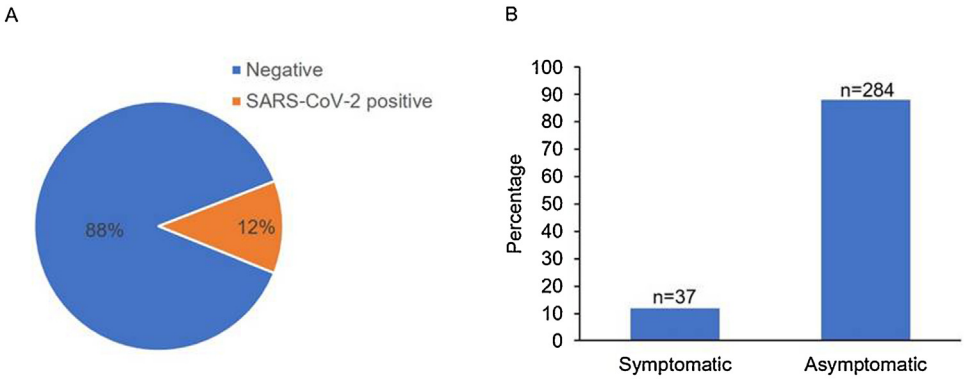

Fig. 1. SARS-CoV-2 test results among pregnant women and their symptomatic status. A) Pregnant women (n = 1140) were screened for SARS-CoV-2 as per the national guidelines and the proportion of positive women are given. B) Percentage of symptomatic and asymptomatic cases in women tested positive for SARS-CoV-2 (n = 321). The data in B is a pool of data in Fig A and 180 additional patients from a hospital catering to only COVID-19 pregnant women.

pregnant women, the data of 141 women was pooled with data from Topiwala National Medical College (TNMC) & BYL Nair Hospital TNMC Mumbai (n = 180) which exclusively caters COVID-19 patients (n = 180). Of the 321 SARS-CoV-2 positive women only 37 (range 0-17%) women were symptomatic (Fig. 1B). The prevalence of symptomatic pregnant women is 11.5 % (Mean 6.8, 95% CI 2.4-11.2) while that of asymptomatic pregnant women is 88.5% (Mean 79.8, 95% CI 75.7- 83.9) [Fig. 1B]. The proportion of symptomatic to asymptomatic individuals varied greatly across the different cities (not shown). Our results estimate presence of one symptomatic to every nine asymptomatic pregnant women. This is in concordance to the number proposed based on mathematical calculations and some observational data [5].

This data on undocumented or “steady state” infections in pregnant women is useful for ensuring safe obstetric and neonatal services and assessing the burden of COVID-19 in the region to plan strategies on strengthening or relaxing mass social distancing measures. We strongly recommend that the strategy of universal testing of pregnant women admitted for delivery is essential and must be implemented rigorously not just to protect the women and their newborns; but also, the healthcare workers and curb spread of the infection in the community.

Declaration of Competing Interest

All authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix 1

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Perinatal mortality and morbidity of SARS-COV -2 infection during pregnancy in European countries: Findings from an international study

Keywords:
COVID-19
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Dear Editor,

After being epidemic in China, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2) infection has rapidly spread in many countries as a global pandemic, with the number of affected cases dramatically increasing worldwide on a daily basis. Although the median age of hospitalized patients with confirmed infection is usually more advanced [1], with older age reported to be associated to higher mortality rate [2], physiological adaptations occurring during pregnancy have been claimed to be potentially responsible for a more severe respiratory disease, thus leading to higher rates of maternal and fetal complications [3,4].

Evidence has been accumulating rapidly in the last months to provide early information to help with counseling and care of pregnant women with SARS CoV-2 infection, and despite the relatively short time from the pandemic outbreak, a multitude of systematic reviews have been published on the topic of SARS-COV-2 infection and COVID-19 disease during pregnancy. However, these studies often share important limitations that might affect the robustness of the results [1,3–6].

Since Europe is currently handling the real possibility of a "second wave", with a new, daily, progressive increase in the number of infected patients after governments' mitigation policies to minimize the virus transmission, there are still several outstanding issues that should be settled soon to guide the antenatal counselling and management of women with COVID-19 during pregnancy.

Here we present a secondary analysis on perinatal mortality and morbidity in European compared with non-European pregnant women involved in one of the largest retrospective cohort studies on COVID-19 during pregnancy [7,8]. This was a multinational, retrospective cohort study that included all pregnant women with a laboratory-COnfirmed SARS-COV-2 infection, diagnosed between February 1, 2020 and April 30, 2020, in 72 centers from 22 different countries in Europe, Asia, North and South America and Australia (Argentina, Australia, Belgium, Brazil, Colombia, Czech Republic, Finland, Germany, Greece, Israel, Italy, North Macedonia, Peru, Portugal, Republic of Kosovo, Romania, Russia, Serbia, Slovenia, Spain, Turkey, and United States) [7]. All infected women were diagnosed antepartum during pregnancy, on the basis of The World Health Organization (WHO) interim guidance [9] (a confirmed case of SARS-COV-2 was defined as a positive result on real-time reverse-transcriptase-polymerase-chain-reaction assay of nasal and pharyngeal swab specimens) [10,11]. Neonates from mother positive to SARS-COV-2 were usually tested within 24 h after delivery with RT-PCR assay of nasal and pharyngeal swab (Table 1).

The findings from this secondary analysis focused on regional differences shows that in European countries the rate of stillbirth was significantly lower, compared with non-European countries (1.0 % vs 7.4 %, OR: 0.12, $p = 0.02$), while the rate of neonatal death was similar when evaluating only pregnancies with live-born. In these subset of pregnancies, the rate of admission in neonatal intensive care unit (NICU) was significantly lower in European compared with non-European countries (23.9 % vs 42.0 %, OR: 0.43, $p = 0.01$). Finally, there was no difference between European and non-European countries in terms of intrauterine growth restriction, preterm birth before 37 weeks of gestation, possible vertical transmission and low birth weight (Table 2).

Thus, pregnant women infected with SARS-COV-2 had better perinatal outcomes in European compared with non-European countries, despite being significantly older and having a significantly higher rate of pre-existing chronic diseases. However, gestational age at infection was significantly higher in European women. In this scenario, the lack of data in literature on SARS-COV-2 infection during the first and early second trimester does not allow to ascertain whether a seroconversion occurring early in pregnancy may increase the risk of adverse perinatal outcomes.