

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

دکتر زهراسادات ثقة الاسلامی

متخصص بیماریهای عفونی و گرمسیری

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# COVID-19 & pregnancy & vaccination



# COURSE IN PREGNANCY

## ▶ Maternal course

The body of evidence suggests that pregnancy does not increase susceptibility to SARS-CoV-2 infection but appears to worsen the clinical course of COVID-19 compared with nonpregnant females of the same age

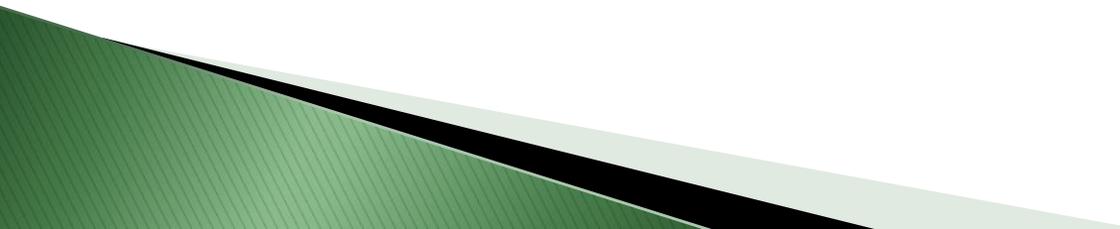
Although most (>90 percent) infected pregnant persons recover without undergoing hospitalization, rapid clinical deterioration can occur, and symptomatic pregnant patients appear to be at increased risk of severe disease and death compared with symptomatic nonpregnant females of reproductive age. Risk factors for severe disease and death in pregnancy include older mean age (especially  $\geq 35$  years), obesity, and preexisting medical comorbidities (particularly hypertension and diabetes or more than one comorbidity)

- ▶ • ICU admission (10.5 versus 3.9 per 1000 cases, adjusted risk ratio [aRR] 3.0, 95% CI 2.6–3.4)
- ▶ • Receiving invasive ventilation (2.9 versus 1.1 per 1000 cases, aRR 2.9, 95% CI 2.2–3.8)
- ▶ • Receiving ECMO (0.7 versus 0.3 per 1000 cases, aRR 2.4, 95% CI 1.5–4.0)
- ▶ • Death (1.5 versus 1.2 per 1000 cases, aRR 1.7, 95% CI 1.2–2.4)

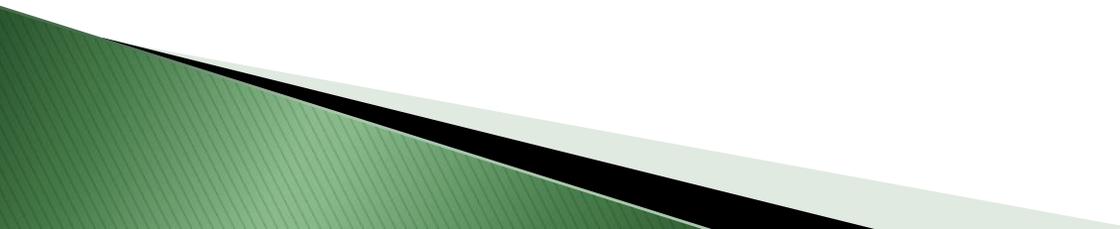
# CLINICAL FINDINGS

## ▶ Signs and symptoms

- Cough – Pregnant 50.3 percent (nonpregnant 51.3 percent)
- Headache – Pregnant 42.7 percent (nonpregnant 54.9 percent)
- Muscle aches – Pregnant 36.7 percent (nonpregnant 45.2 percent)
- Fever – Pregnant 32 percent (nonpregnant 39.3 percent)
- Sore throat – Pregnant 28.4 percent (nonpregnant 34.6 percent)
- Shortness of breath – Pregnant 25.9 percent (nonpregnant 24.8 percent)
- New loss of taste or smell – Pregnant 21.5 percent (nonpregnant 24.8 percent)

- ▶ pregnant people were more likely to be asymptomatic than nonpregnant people of reproductive age with COVID-19
  - ▶ Some of the clinical manifestations of COVID-19 overlap with symptoms of normal pregnancy (eg, fatigue, shortness of breath, nasal congestion, nausea/vomiting)
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# Complications

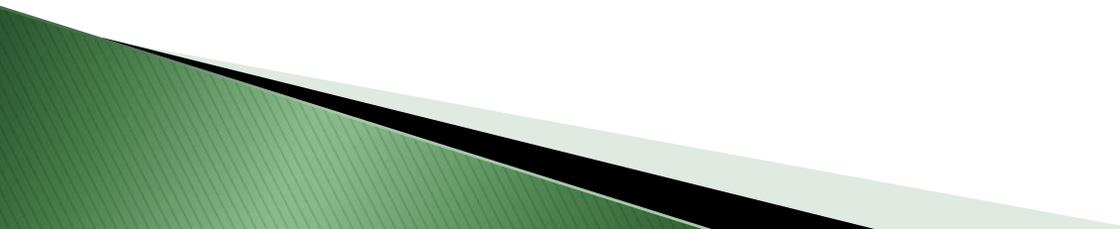
- ▶ Respiratory disorders
  - ▶ Cardiac disorders
  - ▶ Thromboembolic complications
  - ▶ Secondary infections
  - ▶ Acute kidney failure
  - ▶ Neurologic disorders
  - ▶ Cutaneous disorders
  - ▶ Gastrointestinal and liver disorders & Psychiatric illness
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# Frequency of congenital infection

- ▶ The extent of vertical transmission (in utero, intrapartum, early postnatal period) remains unclear
- ▶ In utero transmission typically occurs via a hematogenous route but sometimes via the ascending route. Viremia rates in patients with COVID-19 appear to be low (1 percent in one study) but higher in severe disease and transient, suggesting placental seeding and in utero transmission would not be common

- ▶ SARS-CoV-2 cell entry is thought to depend on the angiotensin-converting enzyme 2 receptor and serine protease TMPRSS2, which are minimally coexpressed in the placenta . This may account for the infrequent occurrence of placental SARS-CoV-2 infection and fetal transmission. However, SARS-CoV-2 (or maternal IgM) could reach the fetus as a result of ischemic injury to the placenta that compromises the syncytiotrophoblast barrier, without requiring placental cell infection .

# Pregnancy and newborn outcome

- ▶ Risk of miscarriage
  - ▶ Overall preterm and cesarean delivery rates
  - ▶ Preeclampsia
  - ▶ Outcome by severity of maternal disease
  - ▶ Outcome by gestational age at time of infection
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# Fetal outcome&Newborn outcome

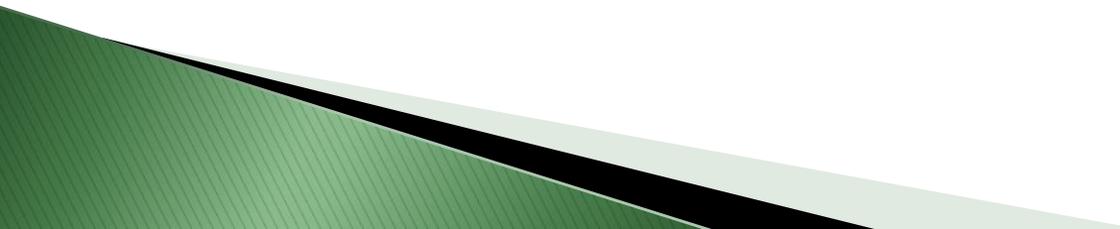
- ▶ **Congenital anomalies**
- ▶ **Stillbirth**
- ▶ Over 95 percent of newborns of SARS-CoV-2-positive mothers have been in good condition at birth. Most are asymptomatic. Some newborns of infected mothers have developed symptoms of mild infection (ie, not requiring respiratory support), and most of these cases have been attributed to transmission from respiratory droplets postnatally when the neonates were exposed to mothers or other caregivers with COVID-19

# management

- ▶ Patients should call their provider (or seek emergency medical care) if they experience worsening dyspnea, unremitting fever  $>39^{\circ}\text{C}$  despite appropriate use of acetaminophen, inability to tolerate oral hydration and medications, persistent pleuritic chest pain, confusion, or obstetric complications (eg, preterm contractions, vaginal bleeding, rupture of membranes)

- ▶ **During pregnancy, maternal peripheral oxygen saturation (SpO<sub>2</sub>) should be maintained at  $\geq 95$  percent**

# PREVENTION

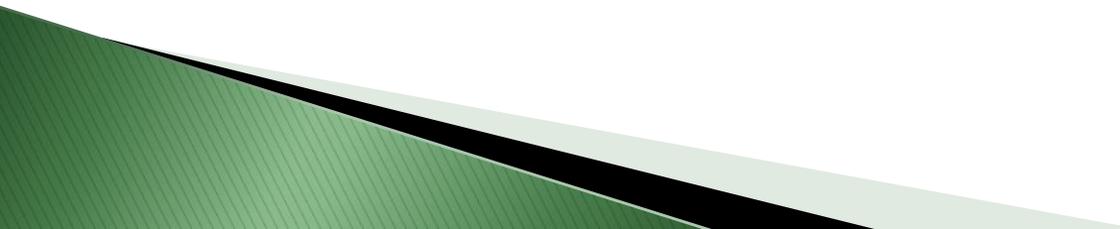
- ▶ Everyone
  - ▶ Pregnant mothers with children in the home
  - ▶ Pregnant workers
  - ▶ Vaccines
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# Vaccines

None of the vaccines contain virus that replicates; thus, they do not cause disease, but nonspecific side effects from activation of the immune system may occur, experts believe they are unlikely to pose a risk for pregnant persons, the fetus, or breastfeeding newborns. Some inactivated COVID-19 vaccines contain an adjuvant.

Vaccines with novel adjuvants are generally avoided in pregnancy because of a lack of safety data, but this theoretic concern should be balanced with the risk of an ongoing pandemic and the known risks of severe COVID-19, including death, during pregnancy.

- ▶ Protective antibodies have been documented in cord blood 15 days after the first maternal mRNA vaccination
  - ▶ We recommend that all pregnant patients undergo COVID-19 vaccination.
  - ▶ Patients who are at higher risk of exposure to SARS-CoV-2 or at highest risk of having severe disease if infected (eg, patients with diabetes, obesity, or hypertension) may benefit most.
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# دستور العمل کثوری واکسیناسیون

توصیه سازمان بهداشت جهانی به واکسیناسیون زنان باردار مزایای واکسیناسیون برای زنان باردار بیشتر از خطرات احتمالی این بیماری است. همچنین آزمایش بارداری قبل از واکسیناسیون توصیه نمی‌شود. همچنین سازمان بهداشت جهانی توصیه نمی‌کند که به دلیل فرا رسیدن زمان واکسیناسیون فرد، باردار شدن به تعویق بیفتد یا بارداری خاتمه یابد.

▶ مطالعات اندک چاپ شده نشان داده‌اند که آنتی بادی‌های ضد ویروس کووید-19 در سرم بند ناف نوزادان و مادر قابل ردیابی است که بیانگر این است که واکسن‌ها از طریق عبور آنتی بادی‌ها از جفت به جنین می‌توانند باعث محافظت نوزادان در برابر بیماری کووید-19 شوند. همچنین گزارش‌های اخیر نشان داده است که در شیر مادرانی که واکسن علیه ویروس کووید-19 وجود دارد و این می‌تواند به ایمنی نوزادان کمک کند.

▶ اخیراً وزارت بهداشت بخشنامه‌ای مبنی بر دستورالعمل تزریق واکسن‌های موجود در ایران در زنان باردار و شیرده منتشر نموده است. طبق این دستورالعمل، واکسن سینوفارم در زنان باردار با شرایط ذیل **بعد از هفته دوازدهم** بارداری و پس از اخذ رضایت از مادر و مشاوره‌های لازم قابل انجام است.

- ▶ همه مادران باردار با نمایه توده بدنی 35 و بالاتر
- ▶ همه مادران باردار با سن 35 و بالاتر
- ▶ مادران در همه گروه های سنی شاغل در بهداشت و درمان
- ▶ همه مادران بارداری که همسران شان در بخش های کرونا و یا مراکز بهداشتی مدیریت کرونا شاغل هستند
- ▶ همه مادران با بارداری های دو قلویی، چند قلویی و بارداری با آی وی اف
- ▶ همه مادران باردار با بیماری زمینه ای شامل بیماری دیابت، قلبی، فشار خون بالا، مصرف داروهای سرکوب ایمنی، بیماری مزمن کلیوی، آنمی سیکل سل، پیوند اعضا، سیروز کبدی و آسم

- ▶ به علت خطر ابتلا به بیماری کرونا در سه ماهه سوم بارداری، ضمن تاکید بر شناسایی مادران باردار واجد شرایط، واکسیناسیون در زنان با سن بارداری 28 هفته و بیشتر در اولویت خواهند بود.
- ▶ در صورت تزریق دوز اول واکسن قبل از بارداری و یا عدم اطلاع از بارداری در زمان واکسیناسیون، توصیه می شود پس از مشاوره با مادر و بر اساس ترجیح وی در رابطه با زمان واکسیناسیون، تزریق دوز دوم با واکسن سینوفارم به فاصله 28 روز از تزریق قبلی یا بعد از هفته دوازدهم بارداری صورت پذیرد.
- ▶ فاصله بین واکسن ویروس کرونا با واکسن آنفلوآنزا یا توام در بارداری حتی الامکان 14 روز باشد

# Thanks

