

Pregnancy during a pandemic of coronavirus infection COVID-19 risks and effects on the unborn child

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Abstract. Pregnancy is a special time that is full of excitement and hope in every woman's life. But for expectant mothers, fear, anxiety, and uncertainty because of the current COVID-19 status will turn this happy time into a cloud. Pregnant women with Covid-19 are less tolerant of both the pregnancy itself and the coronavirus infection. By complicating each other, they increase the risk of maternal mortality by a significant amount. However, if a pregnant woman is infected with Covid-19, the risk of severe infection increases. Not least because during pregnancy, physiological changes occur in the expectant mother's body that suppress the immune response - in order to prevent rejection of the fetus, which is "still a half-foreign implant."

1 Relevance

Pregnancy is a special time full of excitement and expectation in every woman's life. But for moms-to-be, fear, anxiety and uncertainty cloud this happy time due to the current COVID-19 situation [1-5].

At a time when countries are taking more stringent measures to contain the spread of the COVID-19 coronavirus infection, a number of legal acts have also been adopted in our country [16-25].

By order of the President of Uzbekistan dated January 29, 2020, in order to ensure a favorable sanitary and epidemiological situation and prevent the importation and spread of a new type of coronavirus infection 2019-nCoV (hereinafter referred to as COVID-19), a Special Republican Commission was formed on the territory of Uzbekistan.

In addition to the decisions taken by the Republican Commission, to date, the following regulatory legal acts have been adopted to prevent the spread of COVID-19:

- Decree of the President of the Republic of Uzbekistan No. 5969 dated March 19, 2020 "On priority measures to mitigate the negative impact on the sectors of the economy of the coronavirus pandemic and global crisis";

- Decree of the Cabinet of Ministers of the Republic of Uzbekistan No. 176 dated March 23, 2020 "On additional measures against the spread of coronavirus infection" (PKM-176);

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▪ Decree of the President of the Republic of Uzbekistan No. 5978 dated April 3, 2020 “On additional measures to support the population, economic sectors and business entities during the coronavirus pandemic”. (UP-5978).

2 Aims and tasks of the work

For more than 2 years our world has been living with COVID-19. During this period, enough data has accumulated on the features of the course of a new coronavirus infection in pregnant women, the risks and impact on the unborn child.

Scientists at Oxford University organized an international study that was conducted in 18 countries around the world. An international study has shown that Covid-19 during pregnancy is associated with a significantly higher risk of severe complications in mother and child than previously thought.

3 Research methods

Pregnant women with Covid-19, like healthy pregnant women, undergo a 3-fold ultrasound screening examination:

- 10-14 weeks
- 20-24 weeks
- 30-32 weeks

When examined at 10-14 weeks, gross malformations and /or signs of genetic abnormalities can be seen that could potentially require termination of pregnancy. At this stage of pregnancy, it is important for ultrasound diagnostics to measure the coccyx-parietal size of the fetus (KTR), the size of the cervical fold (NT), visualization of the nasal bone (NB) and, of course, the TVP of the fetus. Each fetus has a small amount of fluid in the region of the collar zone. The diameter of the space of this fluid is measured by ultrasound.

Also at this time, a combined screening is carried out (biochemical blood tests for PAPP-A test), with the help of which doctors calculate the risks of chromosomal abnormalities and growth retardation in the fetus, as well as the risk of developing preeclampsia in the pregnant woman herself. It has been proven that the PAPP-A test is more specific for assessing risks for chromosomal pathology, including Down syndrome.

The analysis reveals over 80% of fetuses with Down syndrome. To determine a more accurate level of risk, the results of the PAPP-A test analysis, the age of the mother and fetal TVP are taken into account. A large amount of fluid (HFT) means an increased risk of Down syndrome and other defects (mainly heart defects).

Testing for TVP is especially important in multiple pregnancies, as it is a random test of all existing screening methods to calculate the potential risk of Down syndrome in each of the fetuses. After the 16th week of pregnancy, a triple analysis is performed - which checks the level of free estriol, AFP (alpha-fetoprotein) and hCG in the mother's blood. This analysis detects over 65% of fetuses with Down's syndrome, and helps to identify other serious pathologies, especially a neural tube defect.

At 20-24 weeks, an ultrasound scan evaluates the structure of the internal organs of the fetus, reveals developmental anomalies, and timely diagnoses possible disabling diseases. Ultrasound at this stage of pregnancy allows you to diagnose or exclude up to 80-90% of pathologies in the fetus. Based on the results of the examination of the first and second screening terms, the obstetrician-gynecologist, together with the pregnant woman, decides on further tactics for managing the pregnancy.

At the stage of 30-32 weeks, it is possible to determine the growth rate of the fetus and its presentation, size and estimated weight, exclude malformations that appear only in the

later stages, assess the condition of the placenta and the amount of amniotic fluid, clarify whether the blood supply to the fetus is disturbed. Based on the results of this examination, a decision is further made on the method of delivery - whether natural childbirth is possible or whether a caesarean section is necessary.

One of the largest studies to date examining the outcomes of Covid-19 in pregnancy provided data on more than 2,100 pregnant women from 18 countries. Pregnant women with Covid-19 tolerate both the pregnancy itself and the coronavirus infection much worse. Mutually complicating each other, they increase the risk of maternal mortality by an order of magnitude.

However, when a pregnant woman becomes infected with Covid-19, the risk of severe infection does increase. Not least because during pregnancy, physiological changes occur in the expectant mother's body that suppress the immune response - in order to prevent rejection of the fetus, which is "still a half-foreign implant."

In the second half of pregnancy, when the size of the fetus increases, the pressure of the uterus on the diaphragm increases, due to which the mother's breathing becomes more superficial. The risk of oxygen deficiency increases dramatically if a viral lung infection is superimposed on this natural process.

The results of the study, which began in March last year, differ significantly from the ideas of scientists a year or even six months ago.

At first, WHO experts believed that the new coronavirus did not pose a particular danger to pregnant women - "unlike the swine flu" that caused the 2009 pandemic. However, this conclusion was drawn when the number of confirmed cases of Covid-19 barely exceeded 50,000, almost all in mainland China.

By the summer, when the outbreak of a new disease turned into a full-blown pandemic, the number of pregnant women infected with coronavirus went to tens of thousands. It was then that it became clear that patients who are expecting a baby end up in intensive care at least one and a half times more often than women of the same age who are not in position. It turned out that future mothers have to be connected to the ventilator even more often.

In Uzbekistan, 234 cases of infection of pregnant women with coronavirus were registered, 120 of these patients recovered and were discharged from medical facilities. In total, over 2,500 pregnant women are under quarantine. And the mortality rate among pregnant women is 2.9% (7 people). (data as of July 2020)

Deaths have been observed in pregnant women who had comorbidities. These are obesity of the II and III degrees, cardiovascular insufficiency, diseases of the respiratory system, kidneys. In practice, and according to research by the World Health Organization, there have been no deaths in pregnant women with coronavirus alone.

However, it is known that because changes in the body occur during pregnancy, including in the immune system, some respiratory infections can pose a serious threat to pregnant women, the WHO reported.

Therefore, it is important that pregnant women take preventive measures to protect themselves from COVID-19 and inform their doctor about possible symptoms (in particular, such as fever, cough, difficulty breathing).

The study was carried out to the highest scientific standards and its conclusions look more convincing and deserve much more credibility.

Firstly, each of its participants was observed throughout the entire period: from the diagnosis to the birth itself and for some time after them.

Secondly, for each of these patients, an individual control group was actually selected for comparison - two pregnant women who were as similar as possible to her in age and health status, but without a coronavirus diagnosis.

At the same time, it should be noted that not all infected pregnant women developed a severe form of Covid-19.

The COVID-19 virus has not been detected in vaginal fluid, cord blood, or breast milk," Kade says, although data is still being collected. So far, COVID-19 has also not been detected in amniotic fluid or placenta.

At the same time, scientists have found that the virus is not transmitted to the child through mother's milk - but protective antibodies are transmitted. True, it is impossible to ensure a safe distance while breastfeeding, but the risk of transmission of infection between mother and child can be reduced to almost zero if you express milk and feed the children "remotely".

4 Prevention

The best we can do is to take all necessary precautions to avoid contracting COVID-19.

Do simple relaxation exercises at home, "for example, stretching, breathing exercises and, if necessary, talking to a midwife. Take care of yourself as much as possible. Eat well, drink plenty of fluids, put your hands on your belly and enjoy your pregnancy.

Additional protective measures include frequent handwashing with soap and water, regular cleaning and disinfection of frequently touched surfaces in the home, self-monitoring for any signs or symptoms related to COVID-19, and prompt medical attention if present.

If you suspect that you may have COVID-19, it is important to seek medical attention immediately and follow your doctor's instructions. Mothers who are reasonably well should take precautions before feeding their baby, including wearing a mask, washing hands before and after contact with the baby, and cleaning/disinfecting surfaces. If you feel unwell, express milk and feed it to your baby using a clean cup and/or spoon, following the same precautions.

5 Conclusions

Pregnant women with Covid-19 tolerate both the pregnancy itself and the coronavirus infection much worse. Mutually complicating each other, they increase the risk of maternal mortality by an order of magnitude.

However, when a pregnant woman becomes infected with Covid-19, the risk of severe infection does increase. Not least because during pregnancy, physiological changes occur in the expectant mother's body that suppress the immune response - in order to prevent rejection of the fetus, which is "still a half-foreign implant."

But we urge not to panic about this, not to draw far-reaching conclusions and not to make hasty decisions. For example, do not postpone a planned pregnancy, and even more so do not interrupt an already begun one.

We would like to emphasize separately: pregnancy against the backdrop of a pandemic is not yet a reason for panic, the vast majority of women will end up with a normal, healthy birth, regardless of whether they were infected with the coronavirus or not.

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