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.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
Four months into the crisis, many questions remain over covid-19 in pregnancy

Jessica Hamzelou

A GROWING number of case studies suggest that, while pregnant people don’t seem to be at greater risk of the coronavirus, covid-19 is linked to a higher rate of caesareans and preterm births, and the virus may be able to cross the placenta to a fetus.

In March, the UK government classed pregnant people as “vulnerable” as a precaution. Back then, much of what we knew about covid-19 in pregnancy came from data on just around 200 pregnancies, but it didn’t look like the virus could pass from a woman to a fetus. As more cases are collected, the picture is beginning to change.

So far, several hundred births affected by covid-19 have been reported. Based on these, many doctors and researchers say they are relieved to see that covid-19 doesn’t appear to be as deadly in pregnancy as SARS, which killed a quarter of the pregnant women who had it.

In fact, the virus doesn’t seem to produce any symptoms at all in most pregnant women. When a team at a New York medical centre administered a test to 215 women who gave birth over a two-week period, it found that four women with a fever or other symptoms tested positive for the coronavirus, but so did 29 women who had no symptoms whatsoever (NEJM, doi.org/ggr28f).

Research seems to suggest that pregnant people are at no greater risk than the general population when it comes to catching the virus or developing a severe illness. But some pregnant women have become very sick, and some have died. Marian Knight at the University of Oxford and her colleagues have collected data from 427 pregnant women admitted to UK hospitals with covid-19. Of these, three have died with the virus, while another nine remain in critical care.

We won’t know how the risk to pregnant women compares with the general population until we have been able to compare 25.5% of births to women with covid-19 were preterm pregnant and non-pregnant people of similar ages and backgrounds, says Sonja Rasmussen at the University of Florida.

The virus may have an effect on births. In Knight’s study, 63 out of 247 deliveries were preterm. In a review of 108 women who gave birth with covid-19, Mehreen Zaigham at Skåne University Hospital in Malmö and Ola Andersson at Lund University, Sweden, found that around 91 per cent of the babies were delivered by caesarean section (Acta Obstetricia et Gynecologica Scandinavica, doi.org/ggr2rd).

In some cases, the illness may have triggered an early labour, says Edward Mullins at Imperial College London. Yet it is also possible that many babies were delivered early as a precaution, to protect the mother’s health. “I can only speculate they wanted to do it in a controlled environment with protective equipment in place,” says Zaigham.

One in 20 of the babies born to the mothers in Knight’s study tested positive for the coronavirus, and five of the babies died. Three of the deaths appear to have been unrelated to the coronavirus, but two of them might have been, say Knight and her colleagues.

There have been reports of miscarriage and stillbirth in women infected with the virus, but it is unclear yet whether these were as a result of the coronavirus. “It’s difficult to get a clear picture of the situation,” says Andrew Shennan at King’s College London.

But there is “fairly convincing” evidence that the virus can be passed from a person to their fetus via the placenta, says Mullins. A small number of babies born to people with covid-19 have tested positive for the coronavirus shortly after birth, and a woman who lost her pregnancy at 22 weeks was found to have the coronavirus in her placenta.

However, most studies have found no evidence of such transmission, so if it is crossing the placenta, this is likely to be rare, says Shennan.

Avoiding the virus

We don’t yet know how the virus might affect a developing fetus. Some other viruses, such as Zika and the virus behind chicken pox, can harm the development of a fetus’s brain and visual system, for example. The risks are thought to be especially high in early pregnancy, when organs are first developing. But when it comes to the new coronavirus, we simply don’t have any information, especially when it comes to the first and second trimester, says Rasmussen.

The good news is that most newborn babies with the virus have recovered well so far. Mullins and his colleagues have launched an international project to collect data on the outcomes of pregnant people who have covid-19 and their babies. The project will specifically look at miscarriage, fetal growth, still birth, premature birth and transmission from mothers to babies. Zaigham and her colleagues are launching a similar study in Sweden.

Until we have clear answers to the questions surrounding covid-19 in pregnancy, people who are pregnant should do their best to adhere to social distancing and handwashing advice, says Rasmussen. “Right now, the important thing is that pregnant women do whatever they can to avoid getting covid-19,” she says.