Infant Immune System May Kill Hepatitis C While in Utero

Researchers are seeking to understand why only 5% of babies born to mothers with hep C become infected.

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It is possible that the immune systems of babies born to mothers with hepatitis C virus (HCV) have the capacity to kill off the virus during gestation. This may be why only 5% of infants born to women with the virus are themselves born infected.

These theories are put forth in a new paper published in Gut by researchers at the Karolinska Institute in Stockholm.

The study authors studied 55 pregnant women at a maternity hospital in St. Petersburg, Russia. Forty of them had an active HCV infection, and the remainder had antibodies to the virus but no active infection.

Three of the babies born to the women with active infection were infected with hep C.

The investigators monitored the infants through 18 months of age, taking routine blood samples. They also included samples from 18 other infants who had been infected with HCV at birth.

It turned out that both the babies who had hep C at birth and those that were exposed to the virus in utero but tested negative at birth had certain changes in their adaptive immune systems—specifically, adaptations in their B lymphocytes. These immune cells produce antibodies that can identify and root out foreign pathogens.

“The immune system of the healthy babies shows similar changes to that in babies infected with hepatitis C,” study author Niklas Björkström, a doctor and researcher at the department of medicine at the Karolinska Institute, said in a press release. “This could suggest that the immune cells have encountered the virus in the womb and managed to eliminate it before birth.”

“A possible explanation is that most babies exposed to the virus in utero manage to deal with it, which we can later see by the B lymphocytes,” Björkström continued. “One interesting hypothesis is that these cells can contain novel information that we can use to protect ourselves against hepatitis C in the future.”

To read a press release about the study, click here.

To read the study abstract, click here.

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