



Does Hepatitis C Raise the Risk of Schizophrenia and Bipolar Disorder?

A new study suggests HCV can linger in the brain lining and may alter neural function.

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Hepatitis C virus (HCV) lingering in cells lining the brain may contribute to conditions such as schizophrenia and bipolar disorder, according to study results published in [Nature](#). An analysis of health records confirmed that people with these conditions were more likely to have chronic hepatitis C.

These results “provide clues regarding the contribution of viruses to the pathology of psychiatric disorders,” the study authors wrote.

While previous research has suggested a link between psychiatric disorders and viral infection, direct evidence has been lacking, possibly because some viruses are more likely to take up residence in the linings of the brain rather than neural tissue itself.

To learn more, Sarven Sabuncian, PhD, of Johns Hopkins University School of Medicine, and colleagues studied cells of the choroid plexus, a structure within the fluid-filled ventricles of the brain that produces cerebrospinal fluid, in postmortem samples from deceased individuals. Using high-throughput sequencing, they screened for more than 3,000 human and animal viruses.

The team found 13 virus species in the choroid plexus of 46 individuals, and samples from people with schizophrenia or bipolar disorder were more likely to contain viral sequences. HCV was the only virus that had a statistically significant association with these conditions. Interestingly, however, some people with chronic hepatitis C did not have detectable virus in their choroid plexus samples, suggesting it does not always travel to the brain lining.

Next, the researchers looked for a link between psychiatric disorders and viruses using the TriNetX electronic health records database, which includes data from 285 million patients. They found that 3.6% of people with schizophrenia, 3.9% of those with bipolar disorder and 1.8% of those with major depression had been diagnosed with chronic hepatitis C, compared with only 0.5% of those without psychiatric disorders.

Drug use is common among people with schizophrenia or bipolar disorder, but this is also the case for those with major depression, suggesting that HCV infection may be linked to schizophrenia and

bipolar disease pathology, not just behavioral risk factors such as injection drug use.

Finally, the researchers looked for the presence of viral RNA in samples from the hippocampus, a structure in the brain's temporal lobe that plays a role in learning and memory. While HCV was not present in this tissue, indicating that the virus had not invaded the brain, its presence in the choroid plexus had evidently changed hippocampus gene expression.

"Our findings show that it's possible that some people may be having psychiatric symptoms because they have an infection, and since the hepatitis C infection is treatable, it might be possible for this patient subset to be treated with antiviral drugs and not have to deal with psychiatric symptoms," said Sabunciyan in a [news release](#).

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