

# MADHYA PRADESH STUDY FINDS HEPATITIS IN COVID-19-AFFECTED CHILDREN

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A health worker administering Covid-19 vaccine to a kid in a private school in Bhopal. | Photo Credit: A.M. Faruqui

While [fresh COVID-19 cases in India](#) continue to be at manageable levels, doctors in India—alongside medical experts globally—grapple with a mysterious spike in unexplained hepatitis in children who've tested positive for COVID-19.

A team of medics from the Bundelkhand Medical College (BMC), Sagar, Madhya Pradesh and the Post Graduate Institute of Medical Research, Chandigarh report that an investigation of 475 children, who tested Covid positive from April-July in 2021, showed 37 (about 8%) with Covid Acquired Hepatitis (CAH). Though sporadic reports from various parts of India have emerged in the last two years, this is the first systematic investigation to quantify the scale of the syndrome in the country.

10 children had the more serious, rare, but better documented, [Multisystem Inflammatory Syndrome in Children](#) (MIS-C), that is marked by inflammation in multiple organs and can kill three in every ten diagnosed children.

In CAH, the symptoms include nausea, loss of appetite, weakness, and mild fever. Inflammation isn't marked, though a high level of liver enzymes, called transaminases, is observed. All of the other typical causes of hepatitis, such as associated viruses, are absent. All of the 37 children recovered "uneventfully", meaning that routine treatment for severe hepatitis such as corticosteroids, rehydration, fever management and vitamins were sufficient for nearly all of them.

"We observed a peculiar rise in hepatitis cases. Usually, the beginning of monsoon marks a rise in hepatitis cases. Last year (2021) we started to see this in April, or summer, in covid positive children who were part of follow-up. Most of them in fact had recovered from their covid," said Sumit Rawat, Associate Professor, Microbiology, BMC, and the corresponding author of the study. "Hepatitis A and E are specific to certain villages or regions, B is present through the year and D is usually from a parent or from a blood transfusion. Last year, following the Delta wave we saw these cases from all over the state, defying the usual histories."

Apart from the usual causative viruses, Mr. Rawat and his colleagues investigated multiple possibilities of the hepatitis occurring due to Epstein Barr virus, auto-immune disorders, and chicken pox virus (varicella). However, he noted, some children seemed to be testing positive when administered "irrelevant tests" such as dengue or varicella zoster. They surmised that the hepatitis was possibly due their immune systems behaving abnormally. "What was common in all children was a very high level of covid-antibodies," he added. Mr. Rawat and his colleagues have [reported their findings](#) last week in the pre-print repository, Biorxiv, and await publication in a peer-reviewed journal.

While Mr. Rawat's account of Covid-linked hepatitis in children is the most detailed out of India so far, there are reports from several countries postulating a link.

The WHO said last week that 348 probable cases of "hepatitis of unknown origin" had been

identified, and the prime suspect was an adenovirus along with a COVID-19 infection.

Nearly 20 countries had reported cases though only six countries had reported more than five. Britain tops the list of countries with nearly 160 confirmed cases.

The United States' Centers for Diseases and Control released a nationwide health alert about an increase in hepatitis cases of unknown origin in children, raising concern that it could be due to a COVID-19 infection.

Although the cause of the hepatitis is a mystery, Mr. Rawat says it's only the tip of the iceberg as the numbers reported so far were only in children who were severely ill. Many more with less severe liver damage may have gone undiscovered.

A spurt in hepatitis infections followed a month or two after Covid peaks and Mr. Rawat suspects, though he admits it's only a hunch, that Covid caused the children's immune system to "misfire" and pave the way for other usually innocuous infectious organisms, such as an adenovirus or another "co-factor", to cause hepatitis. "On its own an adenovirus is harmless but in the presence of a disturbed immune system can cause a severe infection." Evidence from the United Kingdom, said Mr. Rawat, suggested that these infections were fewer in vaccinated children and so Covid vaccination could be helpful in young children.

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