NEWS / HEALTH

Why vaccinated healthcare workers are testing positive for COVID-19

CHAHAT RANA

25 March 2021

A healthcare worker receives a dose of a COVID-19 vaccine in Kolkata. RUPAK DE CHOWDHURI / REUTERS

COVID-19

On 14 March, more than a month after he received the second dose of a COVID-19 vaccine, 55-year-old Rajinder Verma tested positive for the disease. Two days earlier, Verma had developed a fever, a slight cold and a cough. "I am not that young anymore, so I thought I was just exhausted and developed a cold due to the changing season," he said. However, his temperature rose within a day to 103 degrees Celsius and his body ached. "It was like I was on fire from the inside," he told me.

Verma worked as a security guard at the Government Medical College in Chandigarh. As a staff member of a healthcare institution, he had been vaccinated with his first dose on 16 January and the second booster dose on 13 February. "Never in a million years did I imagine I would test

positive," he said. "Not after that vaccine for sure. No one even told us it's possible to test positive after getting vaccinated."

What Verma did not realise is that it is possible to get infected after being fully vaccinated. The first reason is that it takes roughly 45 days after the first shot to develop immunity. The second is that the COVID-19 vaccines in use prevent severe disease but not infection. Many healthcare workers and frontline workers across the country have tested positive for COVID-19, even after getting the two vaccine doses prescribed. Healthcare workers got one of two vaccines currently available in India— Serum Institute of India's Covishield or Bharat Biotech's Covaxin. In Maharashtra, the state with the highest number of COVID-19 infections, at least eight healthcare workers tested (https://timesofindia.indiatimes.com/city/mumbai/mumbai8-health-workers-test-ve-after-2nd-vax-dose-most-have-mild-symptoms/articleshow/81538288.cms) positive after getting vaccinated. Healthcare workers in Madhya Pradesh (https://www.livemint.com/news/india/madhya-pradesh-doctor-infected-with-covid-19-after-2nd-vaccine-dose-11615688075233.html), Gujarat (https://timesofindia.indiatimes.com/city/ahmedabad/doc-couple-tests-covid-positive-despite-taking-both-doses-of-vax/articleshow/81519483.cms) and Punjab (https://indianexpress.com/article/cities/ludhiana/in-punjab-8-test-positive-after-vaccination-6-after-first-dose-7235485/) have also tested positive for the disease after vaccination.

"Full immunity that also induces a sufficiently long-lasting immune memory takes about 15 days after the booster or second dose," Dr Shahid Jameel, a virologist and the director of the Trivedi School of Biosciences at Ashoka University, said. For healthcare workers, who were the first group of people to be vaccinated, the second dose was administered about 28 days after the first. This meant that each healthcare worker was likely to develop lasting immunity only 45 days after the first dose.

Dr Manish Mahobiya, a 35-year-old resident doctor from Netaji Subhash Chandra Bose Medical College in Jabalpur, in Madhya Pradesh, did not account for this lag in developing immunity. Mahobiya tested positive on the night on 15 March. He was surprised since he had taken the first shot of the vaccine on 29 January, and the second on 26 February. "It never even occurred to me I could have COVID-19," he said. "I just kept self-medicating for a while and took the test when my fever crossed 103 degrees. I spent the whole pandemic in COVID-19 duty, taking all precautions, fearing for my health. And now, when I think life can return to some semblance of normalcy, I get infected."

New evidence suggests that a longer gap between the two doses increases the efficacy of Covishield. In light of this, the union health ministry advised states on 22 March to extend the duration between Covishield doses from up to six weeks to up to eight weeks for people getting vaccinated.

I spoke to Dr Lalit Kant, the former head of the epidemiology and communicable diseases division of the Indian Council of Medical Research. "It is not that people will not have any immunity after the first jab. It's just that if they are exposed to the virus, they are more likely to develop disease within this period than later," he said, referring to the period between the first and second vaccine shots. "However, they will still have a better chance of escaping disease than they did without the vaccine."

Even though infections can occur after vaccination, such infections do not seem to progress into severe disease. COVID-19 vaccines have not been shown to have sterilising immunity that prevents transmission of the virus among people. Vaccinated individuals can be asymptomatic carriers. However, they provide partial immunity that can prevent disease. "This is the only assurance COVID-19 vaccines can offer to us right now, that they will decrease risk of disease, make sure people are not hospitalised and reduce mortality," Vineeta Bal, immunologist and

faculty member at the Indian Institute of Science and Research in Pune, said.

Dr Manish Mishra, chief medical and health officer for Jabalpur, told me that he knew at least three health care workers who tested positive in the district within a week of receiving booster doses. "But all of them have mild to moderate symptoms and none of them are hospitalised," he said. In Maharashtra's Jalna district, where three government officials (https://english.lokmat.com/maharashtra/shocking-jalna-two-health-officials-test-covid-19-positive-after-taking-second-dose-of-vaccine/)including two healthcare workers tested positive on 11 March, additional civil surgeon Padmaja Saraf told me she believed they were exposed to the virus before the 45-day window for developing lasting immunity. "They are all doing well though," she added. "Just some slight fever and cough is all they have. They will be fine."

Kant recounted the incident of a doctor colleague who got both doses but was lax in following COVID-19-appropriate behavior. She tested positive in Delhi after returning from Mumbai. "She is in her late seventies but, because of the vaccine, at least she does not have a severe form of the disease," he said. "The vaccines are essential. There is no doubt that they save lives."

Jameel said that the messaging around COVID-19 vaccines needed to change to manage expectations. No vaccine can provide complete immunity from disease. "It is not something we can or should expect from the COVID-19 vaccine," Jameel emphasised. Researchers have demonstrated (http://www.thelancet-press.com/embargo/oxfordvaccineinterval.pdf?utm_campaign=tlpr&utm_source=hs_email&utm_medium=email&utm_content=119GjdCdgHa8-JOXmtNOxJ6MPNG46UO3z9nQOvTivsCMvxGIWsys-rKkXksLyw35LSFmSdG-5ONo2B9bEKlPjpvF8lM5Ww) that Covishield administered in two doses with a 28-day gap has an efficacy of 55 percent. This means that a person who gets the two prescribed doses has a 55 percent less chance of getting COVID-19 compared to a person who has not been vaccinated. According to Bharat Biotech, Covaxin has an efficacy of 81 percent. However, since COVID-19 vaccines are built on different platforms, at different times and under different circumstances, their reported efficacies are not strictly comparable, as this article in *Vox* explains (https://www.vox.com/22311625/covid-19-vaccine-efficacy-johnson-moderna-pfizer).

Jameel worried that too many people expected vaccines to be the ultimate weapons—silver bullets that will end the pandemic. "Never before have we tried to end a global pandemic using vaccines," he said. "Never at this pace have we even developed a vaccine for a new disease."

Another reason for infection after vaccination is that in some people immunity wanes more rapidly than others. Jameel said it was possible for some people to lose immunity within weeks of the second dose, while in others it may last for months. This is because of the level of genetic variation in human populations. "Genetic polymorphisms make us each a little different from each other in the way we respond to infection, disease, medicines, vaccines." he said. Yet another possibility is that people may be getting infected by new strains. A new strain might evade vaccine-triggered immunity, especially if it has mutated to differ enough from the original strain of the virus for which the vaccine was created.

"Usually, until we figure out more about the new strain and its effect on disease transmission, it has already wrecked the damage we hope to prevent," Bal said. She thought it was futile to worry about new strains at the expense of the ongoing vaccination drive. "The point remains that the vaccination drive needs to continue, even if it provides limited immunity towards new strains. It needs to be ramped up to the highest possible level," she said.

The vaccine is one of two main tools to control the pandemic. The second continues to be COVID-19-appropriate behaviour. "Such preventive behaviour can be practiced by anyone anywhere," Jameel said. "Further while the vaccine might give you immunity in 45 days, COVID-19-appropriate behaviour can prevent you from getting sick at the moment. Exuberance around getting vaccinated can lead to a false sense of security and slackening of social distancing and mask wearing, Jameel feared. Mahobiya, the doctor from Jamshedpur, said he had been sticking to these preventive measures as strictly as before but had seen colleagues flout them. "Of course, at the hospital we are all used to taking these precautions, but outside of work, there is a general sense of fatigue. People will go to the market and pull their masks down. When before they wouldn't dare to." When I spoke to him, his fever had receded, but he still had a cough.

Kant agreed that expectations from COVID-19 vaccines needed to be tempered. The government should have changed its messaging to create awareness on what to expect from the vaccine and what protocols to follow after getting vaccinated. "Yes, they will likely prevent you from getting sick and they will reduce transmission to some extent, but they are not the be-all and end-all for COVID-19 prevention," he said. "We need to brace ourselves for a potential new wave now, and we can't afford to lose faith in our vaccines."

contents of this reportage.

CHAHAT RANA (/AUTHOR/37386) is a reporting fellow at *The Caravan.*

KEYWORDS: covishield(/tag/covishield)   Covid-19 vaccine(/tag/covid-19-vaccine)

COVID-19(/tag/covid-19)   covaxin(/tag/covaxin)

COMMENT

You are logged in as Haripriya K M

Type your comment

SUBMIT

READER'S COMMENTS

somenath roy
25 Mar, 2021

abe gadha vaccine is not a wall which prevents virus from entering your body.