What experts know about the Omicron 'variant of concern'

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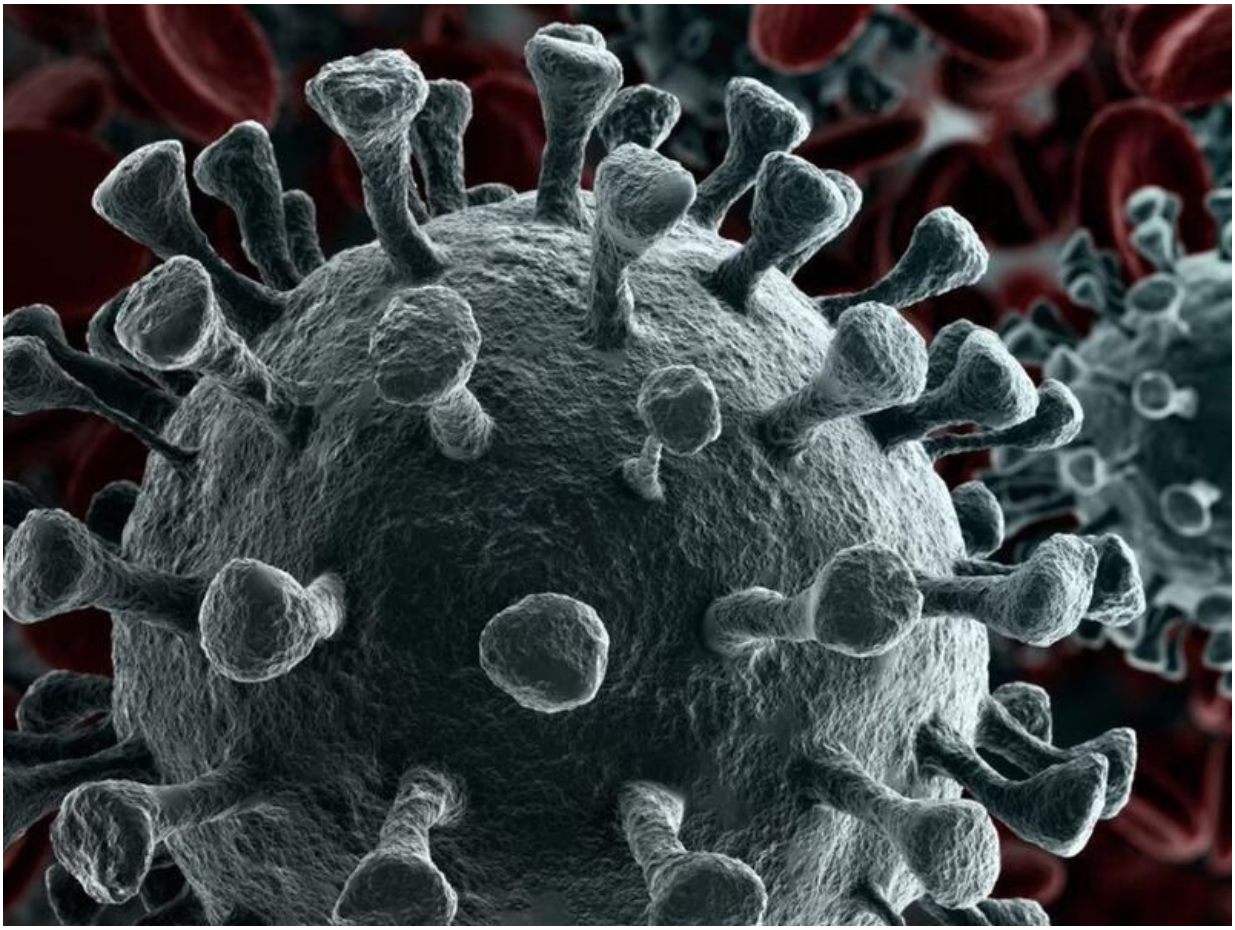

(HealthDay)—Hopes for an easing of the pandemic were dealt a major

setback over the Thanksgiving weekend, with news that a variant first spotted in southern Africa carries a multiplicity of mutations that might make it resistant to approved vaccines.

At an emergency meeting convened Friday by the World Health Organization, the agency dubbed the variant, first labeled B.1.1.529, with the name Omicron, the 15th letter of the Greek alphabet.

The agency also designated Omicron a "variant of concern." That's the most serious category the agency uses as it tracks new variants of SARS-CoV-2, the virus that causes COVID-19.

Global reaction has been swift, as detection of Omicron cases in Africa, as well as isolated cases elsewhere, sent markets tumbling and nations banning flights from southern African countries.

So far, flights from the region have been put on hold by the United States, the European Union, Israel, Britain and Canada, as well as other nations, in hopes of at least stalling the variant's arrival.

It may already be too late: Cases have been recorded in the United Kingdom and the European Union, and two cases of infection with Omicron were reported in North America on Sunday. According to a statement released Sunday by Ottawa Public Health in Ontario, Canada, "two individuals in Ottawa tested positive for the COVID-19 Omicron variant with recent travel from Nigeria."

On Saturday, the U.S. Centers for Disease Control and Prevention issued a statement stressing that, so far, "no cases of this variant have been identified in the U.S. to date." The agency added that "CDC is continuously monitoring variants and the U.S. variant surveillance system has reliably detected new variants in this country. We expect Omicron to be identified quickly, if it emerges in the U.S."

According to a statement from the White House, President Joe Biden met Sunday with Dr. Anthony Fauci and members of the COVID Response Team to be briefed on the Omicron variant.

"Dr. Fauci informed the President that while it will take approximately two more weeks to have more definitive information on the transmissibility, severity, and other characteristics of the variant, he continues to believe that existing vaccines are likely to provide a degree of protection against severe cases of COVID," the statement read.

'Significance uncertain'

In the meantime, there's little that's clear about just how big a threat Omicron might pose to people, whether vaccinated or unvaccinated. But the sheer number of mutations on the virus' spike protein—a crucial piece of anatomy used by the virus to infect cells—caught scientists off guard.

"This variant did surprise us, but the full significance is still uncertain," Dr. Tulio de Olivera, who directs the Centre for Epidemic Response & innovation in South Africa, said in a media briefing on Thursday. His team said it found more than 30 mutations on the spike protein, which lies on the surface of the coronavirus.

That's potentially worrisome, since it is the makeup of the spike protein that's the prime target of antibodies that the immune system produces to recognize and attack the coronavirus. If the protein becomes too different from prior versions, there's the chance Omicron might evade antibodies produced by either prior infections or vaccines, experts noted.

Still, research on the new variant is in its infancy, scientists stressed. Omicron was first spotted in Botswana, where a team at the Botswana Harvard HIV Reference Laboratory in Gabarone sequenced its genetic

code in coronavirus samples that tested positive for the variant, *The New York Times* reported. At that point, the samples shared about 50 mutations not seen in such a mix before.

According to the *Times,* de Olivera said Thursday that "close to two or three hundred" genetic sequences of South African cases involving Omicron would be released to researchers in the coming days. At least six cases have been detected in Botswana, and isolated cases among travelers have been spotted in the United Kingdom, Belgium and Hong Kong, according to media reports.

Still, one expert in virology and infectious disease urged that people not immediately expect the worst from Omicron. Might the variant trigger more serious disease? Could it evade current vaccines? Those are all unknowns, cautioned Dr. Amesh Adalja, a senior scholar at the Johns Hopkins Center for Health Security in Baltimore.

"It's too early to know what level of threat B.1.1.529 constitutes as there is not enough information—particularly clinical information—about the cases that have been identified," Adalja said. He said there was one early sign for hope: "It appears that the hospitalized patients in South Africa were largely unvaccinated, arguing vaccines protect against what matters." Only about one-quarter of South Africa's population is vaccinated.

Unusual symptoms

As reported by the British newspaper *The Telegraph* on Saturday, one of the South African doctors who first raised the alarm about Omicron said she was initially puzzled by the unusual—but mild—symptoms of some COVID-19 patients arriving at her practice in Pretoria.

Many patients arrived feeling exhausted, Dr. Angelique Coetzee told the

newspaper, but none had the loss of smell and taste that is typical of SARS-CoV-2 infection. Many were otherwise healthy young men, she said, and about half were unvaccinated.

"We had one very interesting case, a kid, about six years old, with a temperature and a very high pulse rate, and I wondered if I should admit her [to hospital]. But when I followed up two days later, she was so much better," Coetzee said. Still, she wonders how the new variant might impact older, unvaccinated patients.

There are early signs that Omicron may transmit quickly throughout a population. According to the *Times*, a test designed to detect the variant has found it is surging throughout South Africa. That suggests that it might be overtaking the Delta variant, which has been the dominant variant there and elsewhere.

Will current vaccines or antibody-based treatments protect against Omicron? Again, not enough data is available to say for sure, Adalja said.

"The presence of these mutations in a strain merit a lot of investigation to characterize what it may mean for immunity [vaccine- and infection-induced], as well as monoclonal antibodies," he said.

More than antibodies

According to Dr. Theodora Hatziionannou, a virologist at Rockefeller University in New York City, the unusual number and combination of mutations detected on Omicron suggest that it might have arisen in someone with a compromised immune system, such as a person living with HIV. In such cases, SARS-CoV-2 could linger in the body for weeks or months, giving it time to develop multiple mutations, she told the *Times.*

"This virus has seen a lot of antibodies," Hatziionannou said, raising the specter that its spike protein might give it resistance to antibodies produced by prior infection or the current crop of vaccines.

But she also stressed that the human immune systems rely not just on antibodies, but on other players such as immune cells to quell infection. So, experts believe that vaccines are still likely to have some effect against Omicron.

Booster shots might also help, as they increase the variety of antibodies available, she added. "We will see, because studies are still ongoing," Hatziionannou told the *Times.*

Experts note that other variants—Beta and Mu, for example—showed a worrying ability to evade immune defenses, but then fizzled out because they weren't good at spreading between people. And although Omicron does seem to be spreading in South Africa, reasons other than its innate ability to do so could explain that.

Dr. William Hanage, an epidemiologist at Harvard's T.H. Chan School of Public Health told the *Times* that "it's too early to be definitive," noting that the overall rate of new daily infections in South Africa remains very low.

He also believes that travel bans may buy countries unaffected by Omicron a little time, but it's not a long-term solution.

Adalja agreed. He said believes travel bans might even be counterproductive.

"The travel bans will do little to prevent spread but penalize countries that are being diligent with reporting variants," he said. He noted that the Omicron case spotted in Belgium "is not linked to South Africa or south

African countries."

More information: Find out more about SARS-CoV-2 variants at the CDC.