Are Coronavirus Vaccines Safe and Effective for People With Cancer?

COVID-19 vaccines may be somewhat less effective for people on active treatment, but they should still get vaccinated. And it's very safe.

December 24, 2020 By Bob Barnett

The two COVID-19 vaccines that have been authorized for emergency use by the Food and Drug Administration (FDA)—one from Pfizer and BioNTech, the other from Moderna and the National Institutes of Health—are remarkably safe and effective for the general population.

But how will they work for people who are immunocompromised due to cancer treatment?

What about people recovering from stem cell transplants, which can affect immunity for months? Should survivors be concerned? Are they safe for people living with cancer?

Although the new vaccines are authorized for people with cancer, the clinical studies that led to their approval did not include people in treatment for cancer. Thus, many questions remain.

A panel of experts recently brought together by the American Society of Clinical Oncology (ASCO) had some reassuring answers:

- While immunocompromised patients may not experience as robust an immune response to the vaccines as the general public, they will likely get some level of protection.
- That protection is particularly important for people on active treatment for cancer, especially if they are immunocompromised, because the risk for severe complications due to COVID-19 is greater than it is for the general population.
- There is good scientific reason to believe that the specific kind of vaccines now available—messenger RNA (mRNA) vaccines—are safe for people with cancer.

"The panel noted that while some immunocompromised patients may experience decreased response to the vaccine, it may still confer some benefit and is important to reduce the risk of COVID-19 to cancer patients, especially given recent evidence of higher rates of severe infection,"

according to a statement released by ASCO. (Severe complications are particularly common in people with lymphoma, leukemia and lung cancer.)

The virtual event, which was held in conjunction with the Infectious Diseases Society of America, was held on December 17. Here are highlights of the panel discussion:

COVID-19 vaccination may be particularly urgent for people being treated with cytotoxic agents, more commonly called chemotherapy. Some chemotherapy drugs can cause a low white blood cell count (neutropenia), which temporarily suppresses immunity and increases susceptibility to infections.

“Cytotoxic therapies are the ones we worry about the most,” said Gary H. Lyman, MD, a professor at the Fred Hutchinson Cancer Research Center in Seattle. “These are patients with active disease, probably immunocompromised, so they are at increased risk for COVID-19 complications and mortality. The risk/benefit for vaccination is probably favorable.”

Michael G. Ison, MD, a professor at Northwestern University Feinberg School of Medicine in Chicago, said “I will recommend [vaccination] to immunocompromised patients. It gives some degree of insurance and may also decrease severity of disease.”

Joshua A. Hill, MD, an assistant professor in the vaccine and infectious diseases division at Fred Hutchinson, likened the situation to the annual flu vaccine. “Patients should get an annual influenza vaccine whether or not they are getting chemotherapy,” he said. While those on active chemotherapy may not have as robust an immune response to the coronavirus vaccines, “we don’t think there is a reason not to give it.” The panelists also agreed that there is no reason to believe that long-term cancer survivors will be any less protected against COVID-19 by vaccination than the general population.

How soon people in treatment for cancer will be able to get vaccinated is not yet known, but it will be within the first phase of the national rollout, according to the Centers for Disease Control and Prevention’s Committee on Immunization Practices. Health care personnel and residents of long-term care facilities have been prioritized to receive COVID-19 vaccines as part of Phase 1a. The next group (Phase 1b) to be vaccinated will include adults over 75 and essential frontline workers. The next group (Phase 1c) will include people ages 65 to 74, other essential workers and people ages 16 to 64 with high-risk medical conditions, including cancer. (ASCO released a statement on December 23 advocating that cancer patients be given priority status.)

Safety was a simpler issue. The panelists agreed that the current vaccines will be as safe for people with cancer as for the general population. Ison pointed to the unique characteristics of the mRNA technology that both vaccines use. “It’s like Snapchat,” he said, by which he meant that the communication disappears quickly. “The mRNA is degraded quickly by our natural processes, so you’re only getting one protein of the virus. You can’t get an infection. It goes away quickly, which helps with safety. There’s nothing there that can cause problems.” Said Lyman, “These vaccines are remarkably safe. I have no real concerns that there will be big surprises when it comes to safety for the cancer population.”

The panel agreed that studies involving people with cancer are needed. Because immune responses may not be as robust in some immunocompromised people, for example, it may be worthwhile to study different doses or frequency of dosing to improve effectiveness.

There is also the question of timing vaccination based on short-term cancer treatment schedules that can affect immunity. “In actively treated patients, [giving the vaccination] a week or two after the last treatment and a week or two before the next one…may provide a better response,” said Lyman. He noted that this is the experience with flu vaccines—the response is better if given during weeks when the individual’s immunity is less compromised. Similarly, it may be prudent to wait 100 days before vaccinating people who have undergone stem cell transplants so the immune system has time to recover, according to Ison. “But if COVID-19 levels are very high [in the community], I may want to vaccinate earlier,” he said.

Said Lyman, “We need dedicated studies in those with active disease and active treatment. I think the suggestion of delaying and altering a regimen is a reasonable strategy to explore, but we need to learn. We simply don’t have data.” Added Hill, “I imagine there will be variations after careful study.”

Experts advised that people with cancer on active treatment who do take the vaccine work closely with their care team, especially to understand side effects. These vaccines may cause fever and fatigue, but so can cancer and many of its treatments. Understanding that the vaccine causes such side effects and that they will likely fade in a day or two, is very important, said Lyman. Otherwise, people may fear that the fever and fatigue mean the cancer is coming back, he said. “The main thing is for these patients to know what may happen [with vaccination].”

The panelists also agreed that oncologists and others caring for people in treatment should advocate for them to get vaccinated as soon as the vaccine is available to them. “I counsel my patients that it’s important to advocate vaccination for all patients and their family members to create a bubble when the vaccine is available,” said Ison. Said Lyman, “For the cancer population, consider yourself on the list to get vaccinated early. If you have adverse effects, they will be mild and time limited and are not a contraindication to getting the second dose.”

Finally, the panel emphasized that even when fully vaccinated, everyone—perhaps especially people on active treatment for cancer—needs to remain vigilant and continue to wear masks in public, practice social distancing and the like. Said Ison, “Even after the second dose, you can’t stop being safe.”

To learn more, see “Cancer Survivors at Greater Risk of Flu Complications” and “Who Can Safely Receive COVID-19 Vaccines?”

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