COVID-19 Recommendations for Patients Receiving Anti-Cancer Immunotherapy

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We should all be doing our best to keep from catching COVID-19, if not for ourselves and our loved ones, then to avoid passing the disease to people in high-risk populations – like cancer patients taking chemotherapy, which can lower white blood cell counts and undercut the effectiveness of remaining white blood cells, leaving these patients immunocompromised and less able to fight infections like COVID-19.

But what about cancer patients taking one of the relatively new class of medicines known as immunotherapy? Are these patients similarly at risk? Or, on the other hand, could medicines that activate the immune system in fact protect against COVID-19 infection?

To answer these questions, we reached out to Ryan Weight, DO, MS, investigator at University of Colorado Cancer Center and medical oncologist at the UCHealth Highlands Ranch campus. While working at Thomas Jefferson University, Dr. Weight helped to develop one of the country's first immunotherapy rapid response teams, defining the emergency response to rare, severe cases of immunotherapy toxicities. He also recently took part in a National Comprehensive Cancer Network (NCCN) panel on immunotherapy side effects, resulting in four pages of updates to the existing guidelines that cancer-care providers use to identify and manage these toxicities.

"As far as we know, immunotherapy on its own would not make patients more susceptible to COVID-19," Weight says. However, he cautions that most patients taking anti-cancer immunotherapies including checkpoint inhibitors like pembrolizumab (Keytruda), nivolumab (Opdivo), and atezolizumab (Tecentriq) are likely to have other factors that put them at risk, including age and/or factors that accompany the underlying diagnosis of metastatic cancer.

"It is important to understand that there is a fundamental difference between chemotherapy and immunotherapy," Weight says. "Chemotherapy is a potent immunosuppressive agent, but immunotherapy is in no way an immunosuppressive agent as we understand it. Many people receiving immunotherapy think the effects will be similar to chemotherapy, and believe they are

at high risk for COVID-19 complications, but as far as we know that's just not the case."

The second question is whether anti-cancer immunotherapy could in some way protect against COVID-19. Basically, immunotherapies activate the immune system against cancer, but not all of this extra immune system activity is directed at the disease. This general immune system activation is what sometimes leads to immunotherapy-related side effects. Early reports even made it seem as if immunotherapy could provoke an especially aggressive response against the viral components of annual flu vaccines, implying these medicines may, in fact, lead the immune system to act aggressively against viruses, perhaps including COVID-19.

"But within the last month, a larger study of 162 patients looked at this specifically, and found no increased response to flu vaccines in patients receiving checkpoint inhibitors, so that seems to not be the case," Weight says.

The timeline of these findings hints at the real challenge: "The checkpoint inhibitor immunotherapies are still very new," Weight says. "The first approval was in 2011, but they didn't hit the mainstream for multiple cancer types until 2015 or 2016. Approvals for immunotherapies to treat many cancer types didn't come until even later than that."

In other words, we simply don't know all the ways anti-cancer immunotherapies might affect a patient's ability to fight viruses like COVID-19.

"We don't have any data to support that immunotherapies could reduce a person's susceptibility to infection. It just hasn't been studied yet," Weight says.

So for now, Weight's recommendation is that patients on immunotherapies don't count their medicine in the plus or the minus column of COVID-19 risk.

"It's not an automatic risk factor like chemotherapy," Weight says. "However, it's important to look at all the other factors accompanying a cancer diagnosis like age and measures of frailty. Despite immunotherapy having no likely effect on COVID-19 outcomes, many of these patients will find themselves in the high-risk group for other reasons."

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