Researchers at The Ohio State University Comprehensive Cancer Center (OSUCCC-James) are gathering information on the impact of the SARS-CoV-2 virus on, and the efficacy of COVID-19 vaccines in, immunocompromised patients with cancer and cancer survivors.

“While we are not seeing these patients coming for medical care with breakthrough COVID-19 infections, there are many questions about the prevalence of asymptomatic infections, how long immunity will last, if their immunity decays more quickly than the general population, and if they will start developing symptomatic infections,” says the study’s lead author Caroline O. Cobb, PhD, an associate professor in the Department of Psychology at Virginia Commonwealth University.

To answer these questions, the Study of Infections and Immune REspoNse (SIREN) study will examine how infection susceptibility and immunity change in patients with cancer on the basis of their stage of disease, and then it will compare this with a cohort of healthy volunteers. The aim is to enroll 450 patients with cancer and 100 healthy volunteers, all of whom will be at least 18 years old and have received 1 of the messenger RNA COVID-19 vaccines.

During the year-long study, all participants will be tested weekly for COVID-19 infections with a polymerase chain reaction test and will be measured for signs of immune responses based on blood samples, both of which will be mailed in. In addition, participants will provide self-reported information by completing periodic questionnaires about the vaccine that they have received, any associated symptoms, and any potential exposures to COVID-19.

Dr. Shields says that he and his colleagues hope to learn whether there are symptomatic or asymptomatic infections in the patients with cancer who are part of the study, what their immune profile response to vaccination is and how it changes over time, and what immune markers may indicate a changing immune profile.

Researchers hope that the results will help to fill the gap in the current understanding of how cancer treatments affect the efficacy of the COVID-19 messenger RNA vaccines because patients with cancer and survivors were not included in the vaccine trials.

Dr. Shields says that the findings will also extend to other patients who have compromised immune systems because many drugs that are used to treat cancer are used to treat other diseases. “Our data will look at specific immune markers that might be applicable to them for assessing immune response,” he says.

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