The Evidence Is In: COVID Vaccines Do Protect Patients With Cancer

Third booster dose may improve immune response in cancer patients without sufficient protection after second dose.

September 23, 2021 By European Society for Medical Oncology

The long-awaited confirmation of the efficacy of COVID-19 vaccination in patients with cancer has arrived, on time to be disseminated to a global audience at the annual congress of the European Society for Medical Oncology (ESMO Congress 2021), the leading professional society for medical oncology.

With a multitude of studies supporting similar conclusions [presented this week], new research revealed that individuals with cancer have an appropriate, protective immune response to vaccination without experiencing any more side effects than the general population. Indirect evidence suggests that a third "booster" shot could further increase the level of protection among this patient population.

As patients with cancer were excluded from the clinical trials conducted to develop the vaccines and support their authorization for use, the questions of whether the vaccines are safe in this vulnerable population and whether they provide adequate protection against severe forms of COVID-19 to individuals whose immune system may be weakened by various anticancer medicines had until now been left open.

"The ESMO annual congress, held for the second time in a virtual format this year in an extra effort to protect our colleagues, has devoted significant efforts to making COVID-19 a priority," said ESMO Chief Medical Officer George Pentheroudakis. "The fact that we have received more than 90 abstracts on the topic, with excellent data, is a clear demonstration that this was the right thing to do."

Patients With Cancer Protected Regardless of Current Oncology Treatment
To explore the potential impact of chemotherapy and immunotherapy on the protection afforded by vaccination against COVID-19, the VOICE study enrolled 791 patients from multiple hospitals in the Netherlands in four distinct study groups comprising individuals without cancer, patients with cancer treated with immunotherapy, patients treated with chemotherapy and finally patients treated with a chemo-immunotherapy combination, to measure their responses to Moderna's two-dose mRNA-1273 vaccine.

At 28 days after administration of the second dose, adequate levels of antibodies to the virus in the blood were found in 84% of patients with cancer receiving chemotherapy, 89% of patients receiving chemo-immunotherapy in combination and 93% of patients on immunotherapy alone.

According to ESMO Press Officer Dr. Antonio Passaro, a lung cancer expert at the European Institute of Oncology in Milan, Italy, [who was] not involved in the study, these results compare favorably with the antibody responses seen in almost all (99.6%) of the group of individuals without cancer: "The high rates of efficacy of the vaccine observed across the trial population, regardless of the type of anticancer treatment, constitute a strong and reassuring message for patients and their doctors," he said.

Passaro further highlighted the importance of ensuring complete, two-dose vaccination for patients with cancer to develop enough protective antibodies against the virus, as the trial data also showed that only about one in three of those receiving chemotherapy on its own or in combination with immunotherapy had achieved a sufficient response after their first shot—half as many as in the group of individuals without cancer.

This observation was replicated in a study on the effects of [the Pfizer–BioNTech COVID-19 vaccine] among 232 patients with cancer and 261 control subjects in Israel: While less than a third of individuals with cancer (29%) developed antibodies after receiving the first dose, compared to 84% in the control group, this proportion increased to 86% following administration of the second dose. Further demonstrating the efficacy of the vaccine, only two cases of COVID-19 were reported during the study period, both of which occurred in patients who had not yet received their second shot.

Booster Shot Could Increase Efficacy for More Patients

Data from the CAPTURE study presented [September 20] additionally shows that out of 585 patients with cancer having received two doses of either [the Pfizer-BioNTech vaccine] or AstraZeneca's COVID-19 Vaccine in the U.K., those who had previously contracted COVID-19 (31%) had higher levels of virus-neutralizing antibodies, including against variants such as Delta, for which vaccination loses some of its effectiveness.

This is separately corroborated by research showing that the antibody response to vaccination was significantly enhanced even after the first dose among patients with cancer who had recovered from COVID-19.

Dr. Luis Castelo-Branco, Medical Oncologist, ESMO Scientific and Medical Division, an expert with no ties to the studies, commented: "These findings lend additional support to the principle of offering the complete cycle, possibly including a third booster dose, to patients with cancer to improve their protection, because it suggests their immune system will respond to the extra stimulation."

A study just published in the New England Journal of Medicine has shown that a vaccination boost in people 60 years or older, after 5 months since completing their [initial] vaccination cycle,

reduced the incidence of COVID-19 and severe illness.

“More data is needed to better understand for whom and when these vaccination boosts should be considered, but in general it would make sense to prioritise all patients with compromised immune function, including patients with cancer.”

“Going forward, it will be important to continually reassess the vaccines’ effectiveness against new variants of SARS-CoV-2 as they emerge,” Castelo-Branco continued, emphasising that special consideration and additional protective measures should be provided to subgroups of patients such as those suffering from blood cancers, more than two thirds (69%) of whom were found in the CAPTURE study to have developed no neutralizing antibodies at all against the currently dominant Delta variant following vaccination.

Vaccination Against COVID-19 is Safe for People With Cancer

According to Castelo-Branco, these and other results presented at the ESMO Congress 2021, in reporting no new adverse events, offer conclusive evidence that while being largely effective, anti-COVID vaccination is just as safe for people with cancer as it is for the general population.

This is notably demonstrated in a subgroup analysis of 3,813 participants with a history of past or active cancer in the Phase III randomized controlled trial of [the Pfizer-BioNTech vaccine], which shows that the most common side effects of vaccination were the same—injection-site pain, fatigue, fever, chills, headache and muscle pain—overwhelmingly mild and occurred at a similar frequency as within the overall trial population (44,047 participants).

“Although this trial excluded people on immune-function suppressing anticancer treatment such as chemotherapy, and thus a significant proportion of patients with cancer, taken together with the plethora of complementary data presented it contributes to a comprehensive and positive overall picture of COVID-19 vaccine efficacy and safety that the oncology community worldwide has good reason to rejoice over,” said Castelo-Branco.

ESMO President Solange Peters concluded: “Since the very start of the pandemic outbreak, we at ESMO have made it a top priority to secure extra care for our patients: first by educating oncology colleagues throughout these unprecedented events, then by pushing for the prioritization of COVID-19 vaccination for patients with cancer. The ESMO promise of ‘Good Science. Better Medicine. Best Practice’ is kept once again, as the wealth of valuable data being presented at ESMO 2021 on the use of the anti-COVID vaccines in patients with cancer will allow us to provide practical guidance to the medical community—oncologists and other professionals alike—as well as inform decisions at the highest levels of health policymaking.”

This news release was published by the European Society for Medical Oncology on September 20, 2021.

© 2026 Smart + Strong All Rights Reserved.