

## **SARS-CoV-2 Infection Rate in Cancer Patients Reduced using COVID-19 Vaccines**

A study recently published has stated that [coronavirus disease 2019](#) (COVID-19) vaccines are more than 55% effective in reducing the risk of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection in cancer patients.

Vaccine efficacy is highest among those who have not received any [cancer](#)-related treatments within six months before vaccination.



### **Introduction**

The COVID-19 pandemic caused by deadly [SARS-CoV-2](#) has caused unprecedented damage to the healthcare system, with more than 265 million confirmed cases and 5.25 million deaths recorded worldwide. As a result, several vaccines have been developed in record time and speed to tackle the virus head-on. According to the World Health Organization (WHO) report, around 8.17 billion vaccine doses have been administered globally as of December 2021.

The clinical trials investigating vaccine efficacy have demonstrated that the majority of currently available vaccines are highly effective against SARS-CoV-2 infection, symptomatic COVID-19, hospitalization, and mortality. However, the effectiveness of these vaccines in immunocompromised patients, including cancer patients, is not fully known as they have not been included in any clinical trials. In this context, some recent evidence has suggested that cancer patients are less responsive to COVID-19 vaccines in terms of inducing robust [humoral immunity](#).

In the current study, the scientists have evaluated the effectiveness of [COVID-19 vaccines](#) in reducing SARS-CoV-2 infection and related mortality in cancer patients.

### **Study Design**

The study was conducted on adult patients with solid tumors or [hematologic cancers](#) who had received cancer-related therapies between August 2010 and May 2021.

All participants were from the US Veterans Affairs Healthcare System and received mRNA-based COVID-19 vaccines. Throughout the study period (December 2020 – May 2021), [vaccinated patients](#) were enrolled on a daily basis and were matched with unvaccinated or not yet vaccinated controls based on age, race, and ethnicity.

The primary and secondary outcomes of the study were laboratory-confirmed SARS-CoV-2 infection and COVID-19 related [death](#), respectively.

### **Observations**

A total of 29,152 [vaccinated cancer patients](#) and 29,152 matched controls (unvaccinated) were included in the study. During a 47-day follow-up, SARS-CoV-2 infection was detected in 161 vaccinated cancer patients and 275 unvaccinated controls. The number of deaths among vaccinated patients and unvaccinated controls was 17 and 27, respectively.

The efficacy of the vaccine was estimated to be 42% after the [first dose](#). There was no difference in infection rate between vaccinated and unvaccinated patients within 2 weeks following first vaccination.

After 14 days from the second vaccination, the overall [vaccine efficacy](#) was estimated to be 58%. The effectiveness was significantly higher among solid tumor patients (66%) compared to that among hematologic cancer patients (19%).

The highest vaccine efficacy of 85% was observed among patients who had received cancer therapy more than six months before the [second vaccination](#). However, the efficacy reduced to 63% and 54% in patients who had received cancer therapy during 3 – 6 months or within 3 months before vaccination, respectively.

Considering types of cancer therapies, the highest efficacy (76%) was observed among patients who had received endocrine therapy within three months prior to the second vaccination. However, the efficacy reduced to 57% for patients who had received [chemotherapy](#) in the same period.

### **Conclusion**

The study findings highlight the effectiveness of mRNA-based COVID-19 vaccines in reducing SARS-CoV-2 infection and COVID-19 related deaths in cancer patients. However, the efficacy of vaccines may vary depending on the type of cancer, type of [therapy](#), and the interval between therapy and vaccination.

As mentioned by the scientists, more studies involving different types of cancer patients and more extended follow-up period are necessary to effectively assess the robustness and durability of [vaccine immunity](#) and determine the need for administering a third booster dose in these patients.

### **Source:**

<https://www.news-medical.net/news/20211205/COVID-19-vaccines-shown-to-reduce-SARS-CoV-2-infection-rate-in-cancer-patients.aspx>