



Warning of the COVID-19 Novel Variant: Is the COVID-19 Omicron Variant a Real Danger for Cancer Patients or Not?

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Dear Editor,

In late December 2019, the novel coronavirus disease (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first presented in the Hubei province of China as pneumonia of unknown cause, which has caused millions of deaths up to now (1). Studies indicated the most common signs and symptoms of the conventional COVID-19 variants as fever, cough, dyspnea, and fatigue. In advanced stages, this mysterious viral disease leads to acute respiratory distress syndrome, acute cardiac damage, as well as gastrointestinal manifestations (2).

In late 2021, the emergence of the new COVID-19 variant, called the Omicron variant, started a new global pandemic wave and was stated as a “version of concern (VOC)” by the World Health Organization (3). Despite our little knowledge about the COVID-19 Omicron variant, some evidence presented the milder manifestation of this new variant than the previous variants, probably due to the global vaccination effects. However, few new theories and studies indicated the life-threatening aspects of the Omicron variant (3).

As indicated in our previous study, cancer patients are in danger of COVID-19 (4); however, seemingly, the Omicron variant has made a novel situation for these patients. Therefore, in the present study, the authors briefly investigated whether the COVID-19 Omicron variant is threatening cancer patients or not?

Cancer Patients in the COVID-19 Era

Most cancer patients are at an exceptionally high risk of infection with the SARS-CoV-2 with probably higher morbidity and mortality rates, prompting special attention to this populace. Molecular links between most cancers and the COVID-19 have been observed to be related to Angiotensin-Converting Enzyme 2, Transmembrane Protease Serine 2, pro-

inflammatory cytokines, and blood coagulation (5). Some anticancer agents are being investigated as a possible treatment for the COVID-19. Based on these findings, new therapeutic options are designed for the treatment of both cancer and the COVID-19. They can manage the extreme outcomes of the COVID-19 and have therapeutic effects on many active cancers (2,5). On the other hand, some investigations have proposed the theory of the COVID-19 associated cancer incidence (4,5). Therefore, according to what is stated and considering the immune-suppressed situation of cancer patients, it is highly advised that clinicians who encounter SARS-CoV-2 infected cancer patients pay special attention to their treatment and follow-up.

Omicron Variant: Danger for Cancer Patients or Not?

The latest findings of the COVID-19 Omicron variant determined its new immune-escape properties, which can potentially enable the virus to infect vaccinated individuals or re-infect anyone (6). Furthermore, these investigations indicated that this VOC has higher transmissibility among people than the Delta and Beta variants. Additionally, its doubling time is approximately one-third of the two other mentioned variants (6). Therefore, due to increased infections, transmissibility, and immune escape, this new VOC has made an alert for healthcare workers and clinicians to severely take care of cancer patients, as an in-danger group. In detail, some of the major reasons and recommendations are as follows (Figure 1):

1- Cancer Patients Vaccination: Based on molecular and serological studies, the serum anti-SARS-CoV-2 S (anti-S) titer has a lower median after two doses of vaccination in cancer patients, compared to the general healthy population. Previous research findings proposed that all cancer patients should receive the third dose of the vaccine three to

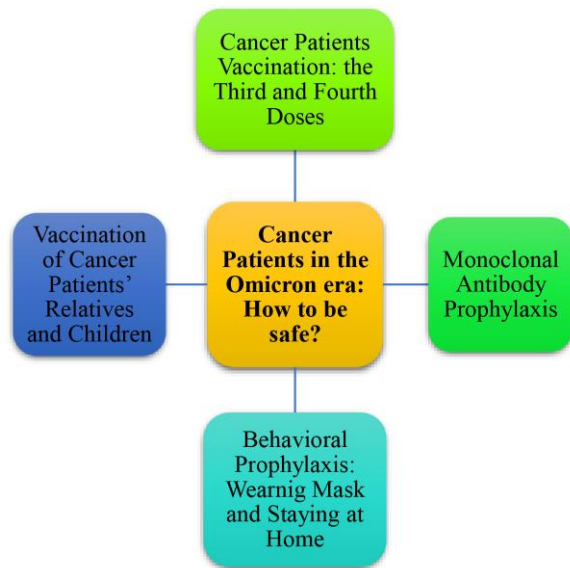


Figure 1. Recommendation for cancer patients to be safe in the COVID-19 Omicron variant era

four months after the second one (7). While receiving the third dose of the COVID-19 vaccine is necessary for all cancer patients, there are controversies about the fourth dose for these patients. Although administering dose four is probably not highly efficient in cancer patients due to their anti-CD20 treatment, some scientific tips state that the fourth dose can be administered four months after the last dose in developed countries (7,8).

2- Cancer Patients' Relatives Vaccination: It is highly recommended by scientific studies and societies that relatives of anyone, due to their close contact, could act as a virus transporter. It is advised to administer the third dose for those in contact with cancer patients approximately four months after the second one. Moreover, vaccination of 5-11 years old children, as silent transporters, seems highly important (8).

3- Behavioral Prophylaxis: Scientific studies have approved that the COVID-19 is transmitted through air and droplets. Therefore, it is essential that immune-suppressed people, especially patients with active malignancy, do not gather in populated communities and events. Furthermore, wearing highly protective masks is highly crucial not only for cancer patients but also for everyone else (9).

4- Monoclonal Antibody Prophylaxis: Monoclonal antibody prophylaxis and treatment is not approved for COVID-19 medication. However, some *in vitro* documents indicated its efficacy on the Delta variant, while this neutralization effect is lower on the Omicron variant. Nevertheless, there is a high controversy about applying monoclonal antibodies for COVID-19 prophylaxis even in cancer patients (10).

Conclusion

Although cancer patients have been in danger of COVID-19 infection and its complication, the new Omicron variant needs more attention and protection. It is highly advised that clinicians and cancer patients take the Omicron variant seriously. Complete vaccination, the administration of the third and even the fourth dose, as well as behavioral prophylaxis, are major routes to being safe beyond the other ways to be protected in the COVID-19 Omicron era.

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Footnotes

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