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Short Communication

COVID-19 Vaccination in Cancer Patients

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In patients with cancer, SARS-CoV-2 (COVID-19) can contribute to increasing morbidity and mortality [1-3] and decreased survival was found in patients with hematological and intrathoracic malignancies, poor performance status, comorbidities, and increased age [3-5]. Patients with hematological malignancies who were treated with stem cell transplantation and anti-CD-20 antibody demonstrated lower rates of seroconversion, compared to COVID-19-infected-cancer patients [6,7]. Patients with hematological malignancies might have substantially compromised B-cell and T-cell responses [8]. These study results indicated that following COVID-19 vaccination, overall high seroconversion rates could be anticipated in cancer patients due to different mechanisms and degrees of immune suppression, such as cell therapies (particularly chimeric antigen receptor (CAR)-T cell), anti-CD-20 antibody (B-cell depleting) therapies, stem cell transplantation, immunosuppressive effects of corticosteroid treatment, and cytotoxic-chemotherapy-bone-marrow-suppressive effects in certain subgroups of cancer patients [9]. Currently, there are lacking data in cancer patients in protection following SARS-CoV-2 (COVID-19) infection, reinfection by various SARS-CoV-2 (COVID-19) variants, or COVID-19 vaccination although mucosal surface antigens (e.g. IgA and protective T-cell responses) might be similarly important in protection from natural SARS-CoV-2 (COVID-19) infection [10]. The association of carcinogenesis with genomic information encoding vaccines, particularly with very-transient-intracellular-presence-COVID-19-mRNA vaccines is likely very low [11]. Hypothetically, mRNA-vaccine-encapsulated-small liposomes and lipid carriers may accumulate through the permeation retention and enhanced effect in tumor tissues [12,13]. The recommendation that have been suggested administering COVID-19 vaccines one to two weeks prior to a chemotherapy dose by many key-professional organizations has not been practical with COVID-19 administration schedules (for examples; two doses of mRNA-1273 (Moderna) are recommended to be given 28 days apart, whereas two doses of BNT162b2 (Pfizer/BioNTech) are given 21 days apart, efficacy > 94%), variable chemotherapeutic regimens, and limited COVID-19 vaccination slot availability, contributing to allowing the most rapid COVID-19 vaccination of these immunosuppressed cancer patients [14] and due to lacking COVID-19- vaccine safety and the information immunogenicity in the context of immune-system-stimulated immunotherapies (for examples; immune checkpoint inhibitor (ICI) therapy) [15] and general exclusion of malignancy-diagnosed patients in the clinical trials of currently approved COVID-19 vaccines [16]. Previous studies revealed that humoral and cell-mediated immunity to SARS-CoV-2 (COVID-19) are the integrated highly-effective-durable-protective key [17].

In conclusion, for continuation of the quality of oncological care, cancer patients on clinical trials should be prioritized for COVID-19 vaccination that do not affect the eligibility of the clinical trials.

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