

Immunogenicity and Safety of mRNA-COVID-19 Vaccines in Immune-Checkpoint-Inhibitor-Receiving-Lung- Cancer Patients

Attapon Cheepsattayakorn^{1,2*}, Ruangrong Cheepsattayakorn³ and Porntep Siriwanarangsun¹

¹Faculty of Medicine, Western University, Pathumtani Province, Thailand

²10th Zonal Tuberculosis and Chest Disease Center, Chiang Mai, Thailand

³Department of Pathology, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

*Corresponding Author: Attapon Cheepsattayakorn, 10th Zonal Tuberculosis and Chest Disease Center, Chiang Mai, Thailand.

Received: March 02, 2023; Published: March 08, 2023

Currently, in cancer or lung-cancer patients, immune checkpoint inhibitors (ICIs), such as anti-CTLA-4, anti-programmed cell death protein 1 (PD-1), anti-programmed death-ligand 1 (PD-L1) antibodies, etc. are widely prescribed as single agent or in combination with other anticancer- treatment modalities [1]. Due to immune-associated adverse events (iaAEs), these ICIs can facilitate antitumor effects, such as interstitial pneumonitis, endocrine-gland-disorders-associated abnormal hormone secretion [2] that can be caused and aggravated by mRNA-based-COVID-19 vaccines (Figure 1) [1,3].

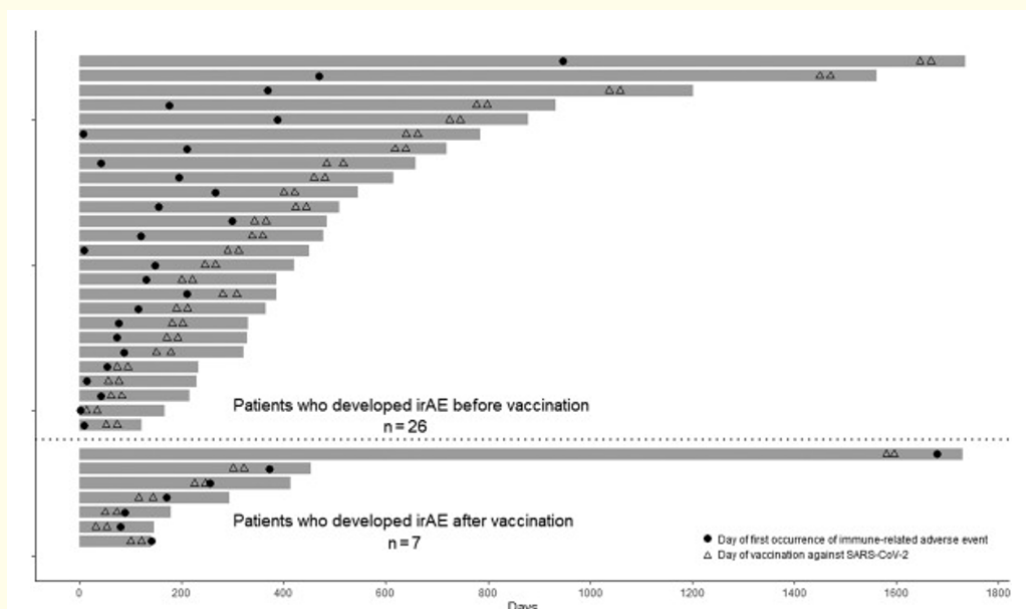


Figure 1: Demonstrating swimmer plot of patients who developed an iaAE/irAE. The swimmer plot reveals the total observation period (d) from the start date of the ICI treatment regimen to the end date of observation. The dates of the two doses of mRNA vaccine against SARS-CoV-2 (COVID-19) are indicated by triangles, and the date of onset of an iaAE/irAE is indicated by a dot for each of the 26 patients who developed an iaAE/irAE before vaccination and the seven patients who developed an iaAE/irAE after vaccination [1]. (ICI: Immune Checkpoint Inhibitor; iaAE: Immune-Associated Adverse Event; irAE: Immune-Related Adverse Event; mRNA: Messenger Ribonucleic Acid, SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus 2 (COVID-19).

In conclusion, COVID-19 vaccination, particularly, mRNA-COVID-19 vaccination among ICIs-treated-lung-cancer patients should be assessed due to being classified as a vulnerable population.

Bibliography

1. Hibino M., *et al.* "Safety and immunogenicity of mRNA vaccines against severe acute respiratory syndrome coronavirus 2 in patients with lung cancer receiving immune checkpoint inhibitors: a multicenter observational study in Japan". *Journal of Thoracic Oncology* 17.8 (2022): 1002-1013.
2. Brahmer JR., *et al.* "Management of immune-related adverse events in patients treated with immune checkpoint inhibitor therapy: American Society of Clinical Oncology Clinical Practice Guideline". *Journal of Clinical Oncology* 36 (2018): 1714-1768.
3. Desage AL., *et al.* "Vaccination and immune checkpoint inhibitors: does vaccination increase the risk of immune-related adverse events?: a systematic review of literature". *American Journal of Clinical Oncology* 44 (2021): 109-113.

Volume 19 Issue 3 March 2023

All rights reserved by Attapon Cheepsattayakorn., *et al.*