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EDITORIAL

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Suggested risk factor for oral lichen planus arising after mRNA COVID-19 vaccination

Dear Editor,

Several vaccines with favorable safety and efficacy profiles administrate against SARS-CoV-2 infection. Meanwhile, more knowledge on their possible side effects is surfacing in progress of the vaccination campaign.[1]

BNT162b2 (Pfizer/BioNTech) is one of the mRNA vaccines currently used.[1]

Kaomongkolgit and Sawangarun[2] reported a case of oral lichen planus (OLP) after receiving the second dose of BNT162b2 vaccine in a person with no past history of OLP. The mechanism responsible for this event is not fully known although a proposed explanation is that BNT162b2 vaccine induces upregulation of Th1 response. This may play a relevant role in lichen planus (LP) activation through an increase in the levels of IL-2, IFN-γ, and TNF-α as common inflammatory cytokines directly involved in the pathogenesis of LP.[3,4] The exact underlying pathomechanisms need more investigations as it seems some conditions may play a role in enhancing risk of OLP development in vaccine recipients as follow:

After the first BNT162b2 dose of vaccine administration, changes occur in the level of inflammatory cytokines such as IFN-γ that is positively correlated with the generation rate of anti-Spike-RBD antibodies/antibody titers. On the contrary, level of antibody titers is influenced by previous infection (seropositive) or non-infection (seronegative) status of COVID-19 before the prime injection in the vaccine recipients.[5]

The first dose of BNT162b2 vaccine increases anti-spike IgG titers in seropositive more than 140 times of that of peak pre-vaccine levels. It also significantly increases the antibody titers and strengths of T-cell responses in seropositive individuals more than seronegative ones.[6,7]

After the second injection of the vaccine, cytokine changes become broader and greater in these seropositive individuals (suggesting stimulation of anamnestic responses). Whereas more obvious role of cytokines induces TNF-α and IL-6.[5]

Hence, a single dose of BNT162b2 vaccine is recommended for COVID-19-infected individuals. It might be sufficient to induce an effective response[5,6] as it reduces side effects due to the release of inflammatory mediators.

AUTHOR CONTRIBUTIONS

The author listed is the sole author.

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None.

CONFLICT OF INTEREST

None to declare.

DATA AVAILABILITY STATEMENT

Data available on request from the author.

CONSENT

This manuscript is a "Letter to Editor" considering the published case report by Kaomongkolgit and Sawangarun.[2] There is no case of a patient in this "Letter to Editor" but only a hypothesis (risk factor).

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