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Letter to the Editor

## Letter of response to comment on: Efficacy and safety of BNT162b2 vaccination in solid cancer patients receiving anti-cancer therapy - A single centre prospective study



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Dear Editor,

We would like to thank the authors Sekkate *et al.* for their letter describing findings from a single-centre prospective study at Foch Hospital in France. Their aim was to evaluate anti-SARS-CoV-2 antibody titers in patients with solid tumours (excluding lung cancers) who had received two doses of the BNT162b2 vaccine and to assess the correlation between these titers and lymphocyte count. Their study included 237 patients who had received two doses of the BNT162b2 vaccine. Blood samples for anti-spike antibodies and lymphocyte determinations were taken 3–4 months

following vaccination. They found a significant correlation between antibody titers and lymphocyte counts ( $R = 0.167$ ,  $p = 0.01$ ).

The association between lymphocyte counts and serologic response to the BNT162b2 vaccine was assessed in previous studies. A significant correlation was found in patients undergoing maintenance hemodialysis and in patients with B-cell non-Hodgkin lymphoma [1,2]. On the other hand, no correlation was found in patients with multiple myeloma, multiple sclerosis, as well as in heart and renal transplant recipients [3–6].

Following the findings of Sekkate *et al.*, we performed a post-hoc analysis evaluating a possible correlation between lymphocyte counts and antibody titers in our cohort. Medical records were reviewed for results of complete blood count following the second vaccine dose. Data were available for 109 out of 129 patients reported in our original study [7]. Blood samples were collected at a median of 25 days (1–228) following the second vaccine dose. The median lymphocyte count was  $1.4 \times 10^3/\mu\text{L}$

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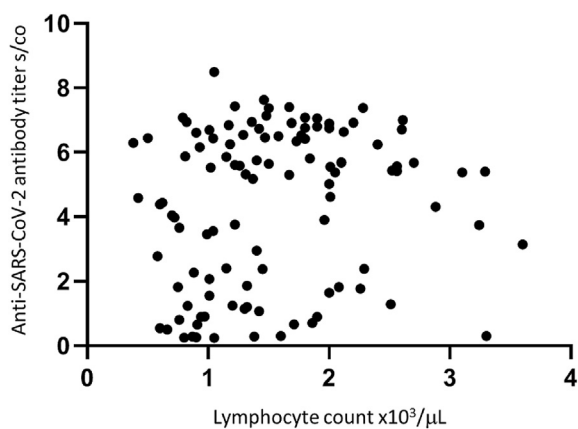


Fig. 1. Correlation between anti-SARS-CoV-2 antibody titer and lymphocyte count.

(0.38–3.60). As shown in Fig. 1, we found a correlation between lymphocyte counts and antibody titers (Spearman's rank correlation coefficient,  $R = 0.196$ ,  $p = 0.041$ ). We adjusted the analysis for the time interval between the second vaccine dose and the date of blood collected for lymphocyte count. After adjusting,  $R$  was 0.189, with a borderline  $p$ -value of 0.0501.

Several caveats should be noted. The value of the  $R$  correlation coefficient shown both by Sekkate *et al.* and us was relatively low (0.167 and 0.189, respectively). In addition, the  $p$ -value after adjustment was of borderline significance in our analysis.

Together with the findings of Sekkate *et al.*, our data suggest low lymphocyte counts following the second BNT162b2 vaccine dose correlation with low antibody titers. Further analyses are needed to corroborate this correlation. The presence of low lymphocyte count may be taken into consideration, among other factors, in decision-making for administering a third (booster) vaccine dose.

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## Conflict of interest statement

Authors declare no conflict of interest.

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