

Review of: "Immune responses to SARS-CoV-2 infection and vaccine in a big Italian COVID-19 Hospital: an 18-month follow-up"

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Potential competing interests: No potential competing interests to declare.

Article Title: Immune responses to SARS-CoV-2 infection and vaccine in a big Italian COVID-19 Hospital: an 18-month follow up.

Authors: Sansone E, *et al.*

Summary:

This study summarizes the findings obtained from a large cohort of healthcare workers during the COVID-19 pandemic. It is well-designed, and has a number of follow-up intervals which are important to monitor antibody levels in vaccinated and previously infected individuals. It correlates with a number of other studies that show a decline in antibody responses over time. Overall, this is an important study, and the authors should take note of the following suggestions and corrections to improve the manuscript's readability.

Title

1. I suggest changing to word "vaccine" to "vaccination" as that is better English.

Abstract

1. Start with the background before launching into objectives.
2. There should be a "methods" sub-heading.
3. In the results sub-heading, it is stated that anti-S titers are significantly lower in those without pre-infection. Please put the P-value in to substantiate this.
4. The objectives and conclusion should be better linked

Introduction

1. The abbreviation EMA needs to be written out in full the first time it is used.
2. It is unclear what is meant by “hence marking the year 2021 and catching the attention” means. Please rewrite or clarify.

Methods

1. The authors should include more detailed methods on how the T cells were stimulated. There is no mention of whether any positive or negative controls were used. This is very important information that needs to be included.

Results

1. Reporting of statistical significance is missing throughout the manuscript. This needs to be addressed urgently. For example, the authors report that a significant difference is observed between genders in the first weeks, yet no p-values are provided in the text or indicated on Figure 4. Significant differences are again reported for age comparisons, but again no p-values are given. This needs to be corrected throughout the manuscript.

Discussion

1. The authors state that the differences in T cell responses between males and females were different due to gender-specific effects, yet did not verify or prove this in any way. Did they test T cells responses to other viruses as controls to prove this statement? If not, this is speculation in this cohort.
2. The authors did not elaborate on study limitations or how they could be addressed in future.
3. The discussion ends very abruptly. The authors should include a final paragraph summarizing the major findings of this study, their importance and make future recommendations.

Writing, spelling, and grammar

1. There are a number of grammatical errors throughout the manuscript. It is suggested that the authors make use of a language-editing or proof-reading service.
2. Tables and Figures need to be capitalized in the text.
3. Reference was made to supplemental data, yet this was not available to view or review.

