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CE - LETTER TO THE EDITOR

Response to BNT162b2 mRNA COVID-19 vaccine among healthcare workers in Italy: a 3-month follow-up—Reply

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Dear Editor,

We read with interest the letter by Serraino and colleagues [1] as they report on our recent study about antibody response to BNT162b2 mRNA COVID-19 vaccine [2].

As a result of the swift development of vaccines for COVID-19 and immunization efforts worldwide, real-world data (RWD) have been collected among several populations and settings confirming vaccination safety, immunogenicity, and efficacy. In so doing, these studies have brought to attention important aspects toward understanding tailored intervention approaches to maximize vaccination campaigns worldwide.

Serraino and colleagues [1] report a greater boosting of antibody concentrations when vaccines were administered 2 months or more after SARS-CoV-2 diagnosis, confirming the observations about the role of prior SARS-CoV-2 infection in immune priming [2, 3].

It is also in agreement with a recent study of cellular and humoral responses to the first BNT162b2 vaccine dose in previously infected individuals who developed a stronger booster response when the interval between infection and vaccination was extended [4].

Possible explanations for these results have been speculated including a role for memory B cells, whose clonal turnover may modulate the antibody sequence evolution after the first BNT162b2 dose in previously infected subjects [5]. Further research is needed on the functional response of the cellular immune system following SARS-CoV-2 infections and COVID-19 vaccination over different time periods.

Presently, there are insufficient data to draw firm conclusions about the optimal timing of a single vaccination dose following infection and a number of factors that limit the comparability of vaccine data across studies, including differences in study design, population and setting. Nonetheless, the practice evidence presented by Serraino and colleagues provides a useful metric to implement the most appropriate vaccination prioritization strategies, particularly in the context of continuous monitoring of vaccine immunogenicity and effectiveness, as well as safety surveillance.

Collectively, the work by Serraino and colleagues, together with our findings [2, 3], suggest how important it is to use data derived from analysis of real-world evidence to understand how COVID-19 vaccines are helping control the pandemic and to tailor the most appropriate population-level interventions to protect against COVID-19.

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Declarations

Conflict of interest RP is full tenured professor of Internal Medicine at the University of Catania (Italy) and Medical Director of the Institute for Internal Medicine and Clinical Immunology at the same University. In relation to his recent work in the area of respiratory diseases, clinical immunology, and tobacco control, RP has received lecture fees and research funding from Pfizer, GlaxoSmithKline, CV Therapeutics, NeuroSearch A/S, Sandoz, MSD, Boehringer Ingelheim, Novartis, Duska Therapeutics, and Forest Laboratories. Lecture fees from a number of European EC industry and trade associations (including FIVAPE in France and FIESEL in Italy) were directly donated to vaper advocacy no-profit organizations. RP has also received grants from European Commission initiatives (U-BIOPRED and AIRPROM) and from the Integral Rheumatology and Immunology Specialists Network (IRIS) initiative. He has also served as a consultant for Pfizer, Global Health Alliance for treatment of tobacco dependence, CV Therapeutics,

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Boehringer Ingelheim, Novartis, Duska Therapeutics, ECITA (Electronic Cigarette Industry Trade Association, in the UK), Arbi Group Srl., Health Diplomats, and Sermo Inc. RP has served on the Medical and Scientific Advisory Board of Cordex Pharma, Inc., CV Therapeutics, Duska Therapeutics Inc, Pfizer, and PharmaCielo. RP is also the founder of the Center for Tobacco prevention and treatment (CPCT) at the University of Catania and of the Center of Excellence for the acceleration of HArm Reduction (CoEHAR) at the same University, which has received support from Foundation for a Smoke Free World to conduct eight independent investigator-initiated research projects on harm reduction. RP currently involved in a patent application concerning an app tracker for smoking behaviour developed for ECLAT Srl. RP is also currently involved in the following pro bono activities: scientific advisor for LIAF, Lega Italiana Anti Fumo (Italian acronym for Italian Anti-Smoking League), the Consumer Advocates for Smoke-free Alternatives (CASAA) and the International Network of Nicotine Consumers Organizations (INNCO); Chair of the European Technical Committee for standardization on "Requirements and test methods for emissions of electronic cigarettes" (CEN/TC 437; WG4). All other authors declare no conflict of interest.

Human and animal rights This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent For this type of study, informed consent is not required.

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