DOI: 10.1002/jmv.27322

LETTER TO THE EDITOR

JOURNAL OF MEDICAL VIROLOGY WILEY

On reaching herd immunity during the COVID-19 pandemic and further issues

To the Editor,

The global and pervasive awareness that vaccination against COVID-19 is dramatically urgent has even enrolled, in a quiet silent way, healed, unaware and swab-negative people, who were previously immunized from the direct contact with SARS-CoV2.[1] Obviously, the burdensome effort to check if subjects were endowed with serum anti-RBD IgGs, or not (naïve people), was completely overshadowed by the pandemic emergency. Despite this attitude being anything but scientific, the recent report by Callegaro et al., in this journal, showed that median titers for specific antibodies in people previously infected with SARS-CoV2 or having undergone COVID-19 increased once following even a single dose of vaccine.[1] Data from this study, that is, 30 527 U/ml (interquartile range [IQR]: 19 992–39 288) for past COVID-19 or 19 367.5 U/ml (IQR: 14 688–31 353), were yet quite different from titers evaluated following two doses of vaccine and reported elsewhere.[2,3] Subjects having experienced contact with SARS-CoV2, though asymptomatic, develop serum conversion producing anti-RBD IgG_1 within 3–16 days from the contact[4] and with levels not so different with respect to two-dose vaccinated people.[4–7] Despite immunized and vaccinated individuals sharing a comparable endowment in plasma anti-RBD IgGs, the different routes of virus entry, involving an early SIgA-B cell mucosal immunity in immunized subjects, maybe a possible reason why immunized and vaccinated individuals are not grouped together to reach the targeted herd immunity.[8] Yet, both for vaccinated and immunized people, the only reliable window through which one can evaluate to date if a subject is covered against COVID-19, is evaluating serum IgGs.

In Italy, people being vaccinated can use an EU certificate to pass (Green Card), whereas people having comparable amounts of anti-RBD IgGs in the serum must demonstrate their previous SARS-CoV2 swab positivity to be included in the authorized list. Obviously, if anyone becomes aware for the first time of having contracted SARS-CoV2 in the recent past by simply verifying their own IgGs level because of contracting the infection in an asymptomatic way, he might be excluded from any right to pass and attend crowded and public indoor places. This apparently odd and awkward discrimination toward people previously infected by SARS-CoV2 without unequivocal symptoms and serum converting a good level of anti-RBD-IgGs lacks any good explanation.

The paper by Callegaro et al., suggests also that boosting IgG immunity by even a single dose of vaccine in subjects having already experienced an asymptomatic SARS-CoV2 infection or a COVID-19 illness, resulted in a marked production of antibodies, decisively higher than in SARS-CoV2 naïve people.[1] In this context, one should wonder if as higher is the serum anti-RBD IgG level, as safer is the vaccine coverage against the next forthcoming SARS-CoV2 infection, but no reliable data exist about this. Actually, politics is holding the vaccination campaign indiscriminately upon people despite their IgG serology, never mind if naïve (never been infected) or immunized.

The question of how much SARS-CoV2 immunized people may account for reaching herd immunity should be a leading issue for expanding the debate and address politely the many raising outcries against vaccination.

Interestingly, people being infected with SARS-CoV2, either in an asymptomatic or symptomatic way and lately developing a serum immunity, have a different B-cell and T-ell memory with respect to vaccinated individuals, due to the initial SIgA-B cell mucosal response driving a sustained IgG-B cell memory,[8] which is the next horizon the recent straightforward and innovative RNA-based vaccines would expect to reach.[9] In this sense, politicians should promote citizens for exhibiting an immunized state (A: serum anti-RBD $IgG_1 \geq 0.30–0.50$ AU/ml, CI_{95} 100–280 AU/ml, SARS-CoV2 swab = negative, IgM ≤ 1.1 UA/ml, even without a previous certificate assessing a SARS-CoV2 positive swab), before forwarding a request of vaccine hesitancy; which yet, is to be fully discouraged, of course. Vaccines remain formidable weapons against COVID-19.

Science should wonder if SARS-CoV2 immunization caused by a direct viral infection can be exchanged, from an immune perspective, with a vaccination procedure. Aside from health recordings, the only clue that a person is immunologically safe against COVID-19 is the IgG serum conversion. In this sense, there is no significant difference between immunized and vaccinated people and both categories must be included in any authorized pass currently restricted to vaccinate and SARS-CoV2 negative individuals.

If reaching herd immunity would mean considering the widest population of people having contracted the SARS-CoV2 asymptomatically and immunologically enabled to address COVID-19 via their anti-RBD IgGs, the vaccination campaign might be much more cost-effective, less cumbersome, and time-consuming and moreover, it may address the bothersome issue of vaccine-hesitant people, giving anyone the opportunity to enjoy their own rights.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

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