Some Doubts Vaccine Boosters, Vaccine Passports, and Prohibition to Use Antivirals Help with Cases and Fatalities of COVID-19 Infection

Alberto Boretti

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To the Editor,

Data of hospitalizations, ICU admissions, and deaths among cases diagnosed with Omicron by vaccination status in New South Wales, Australia permit us to discuss the relevance of vaccinations, boosters, vaccine passports, and other non-pharmacological measures to limit the spread of the virus. It is shown as the data support evolution towards a living with COVID-19 strategy aimed at achieving an exit from the pandemic repealing any requirements impinging on personal freedoms, only protecting the vulnerable, and adopting antiviral therapies in the early stages, with no need for frequent boosters administered by same vaccines few weeks after having completed one vaccination cycle in the generally healthy population, or the maintenance of discriminatory practices based on vaccine passports. The performance of the Australian approach to the COVID-19 are well represented in Fig. 1, proposing the time series of daily new cases and new fatalities per million of Australia, United Kingdom, United Arab Emirates and India.

In analogy with the Spanish flu [1], [2], which lasted 2 years, from 1918 to 1920, when the H1N1 virus eventually become much more infectious but much less lethal, downgraded to an endemic regular seasonal flu virus, history may repeat with the SARS-CoV-2 virus of the COVID-19 pandemic. After about the same 2 years from the start, the latest Omicron variant of the SARS-CoV-2 virus, has certainly much higher infectivity and much lower lethality than the predecessors, as proven by the extraordinarily higher number of daily new cases, but also the unparalleled lower case fatality rate, in between the vaccinated and non-vaccinated.

The latest wave of the SARS-CoV-2 virus is thus being interpreted as the end of the pandemic [3], with some countries finally removing most of the restrictions acknowledging the virus is becoming endemic with much larger infectivity but a drastically reduced lethality thus permitting to downgrade the threat [3], [4]. The United Kingdom finally announced [4] on February 20, 2022, the day after the Queen tested positive, that it will scrap the remaining coronavirus restrictions as part of a living with COVID-19 strategy aimed at achieving an exit from the pandemic faster than in other major economies, repealing any pandemic requirements impinging on personal freedoms.

According to the data provided by New South Wales Health in Australia (New South Wales is practically the only state of Australia to have disclosed the number of cases and fatalities together with the vaccination status, a parameter not disclosed by other states such as Victoria) [5], [6], the number of cases has been grown dramatically moving from the Delta to the Omicron variant, but the number of fatalities has not increased proportionally. Between 16/06/2021 and 25/11/2021 there have been in New South Wales 75,316 cases, 7,823 hospitalizations, 1,469 ICU, and 588 deaths, mostly by Delta. Then, between 26/11/2021 and 12/02/2022, 1,120,059 cases, 11,603 hospitalizations, 1,172 ICU, and 1,085 deaths mostly by Omicron. Thus, the case fatality rate dropped from 0.781% for Delta to 0.097% for Omicron. Because case numbers were under-reported at the peak of the Omicron wave, with estimates of true cases triple the reported [5], the case fatality rate was likely much closer to 0.033% than 0.097%.

Table 1 presents NSW data collected between 26/11/2021 and 12/02/2022 from [6]. Excluding those detected through a rapid antigen test (RAT) and limiting the statistic to those who tested positive through a Polymerase chain reaction (PCR) test, 50,539 people tested positive after having...
received three or more effective doses. 1.3% were hospitalized, 0.1% ended up in ICU, and the case fatality rate was 0.2%. Then, 579,516 people tested positive after having received two effective doses. 1.2% were hospitalized, 0.1% ended up in ICU, and the case fatality rate was 0.1%. 7,747 people tested positive after having received only one effective dose. 2.7% were hospitalized, 0.3% ended up in ICU, and the case fatality rate was 0.4%. 128,081 people tested positive without having received any effective dose. 0.9% were hospitalized, 0.1% ended up in ICU, and the case fatality rate was 0.2%. To be noted, table categories of [6] were not mutually exclusive, as hospitalized cases include cases admitted to ICU but deaths may occur with or without being admitted to hospital or ICU. While there are to mention 173,743 cases of unknown vaccination status, with between 1.4% 0.2%, and <0.1% hospitalizations, ICU, and deaths, the above statistic already showed as there was no benefit from having received three or more effective doses vs. having received two doses or having received no vaccination at all, with the best case fatality rate delivered by two doses. Particularly unfortunate was the case of those who got infected after having received only one dose, as they experienced from double to four times higher case fatality rate than the other groups.

For the opportunity of severe outcome (ICU or death), [6] proposes a <1% result for the age groups 10–19 and 20–29 for three or more effective doses, two doses or less than two doses (Table 6 in reference [6]), same as the age group 0–9 which is only less than two doses. Finally, irrespective of vaccination, [6] proposes a case fatality rate <0.1% for the age groups 0–9, 10–19, 20–29, 30–39, 40–49, and 50–59 (Table 7 in reference [6]). It is therefore absolutely unnecessary to administer boosters by the same vaccines within a few months from having completed the two doses in the young and healthy population, with more than legitimate
Table 2 Hospitalizations, ICU admissions, and deaths among cases diagnosed with COVID-19, by vaccination status, New South Wales, week ending 18 June 2022. Data is from [19]

| Vaccination status | Admitted to hospital (but not to ICU) | Admitted to ICU | Deaths |
|--------------------|--------------------------------------|----------------|-------|
| Four or more doses | 72                                   | 5              | 8     |
| Three doses        | 189                                  | 24             | 48    |
| Two doses          | 105                                  | 5              | 15    |
| One dose           | 8                                    | 0              | 2     |
| No dose            | 4                                    | 1              | 4     |
| Unknown            | 128                                  | 12             | 0     |
| Total              | 506                                  | 47             | 77    |

doubts if also the vaccines were unnecessary in the youngest and healthy.

It is worth noting that surveillance reports such as [6], are not regularly updated following the same logic, as this could have permitted to properly assess the efficacy of the vaccines, which is otherwise assumed high no matter what the data says. Table 2 (from [19]) proposes for example the most recent data for the week ending 18 June 2022. A RAT test is now considered adequate proof of infection. It is not reported how many people were susceptible to infection, or were infected, by COVID-19 in the different categories of four or more doses, three doses, two doses, one dose, and no dose, to correctly compute the “prevalences”. While Ref. [19] surprisingly write about the data in Table 2 “Of the 77 people who were reported to have died with COVID-19 all were eligible for a third dose of a COVID-19 vaccine but only 56 (73% of those eligible) had received a third dose”, it would have been more appropriate to note the number of fatalities is increasing rather than reducing with the number of boosters, conforming the trend previously highlighted in Table 1. The fatalities are 4 in the non-vaccinated, 15 in the fully vaccinated, and 56 in the boosted, with this latter category certainly not the most common. While data to draw better conclusions is missing, there is more support for arguing boosters increase the risk of dying from COVID-19, rather than the opposite. Ref. [19] also includes data on influenza, which appears this year stronger than the years before. In the observed week, while the number of people with COVID-19 admitted to the hospital was 506, there have been 211 emergency department presentations for “influenza-like illness”. While there is no information about the COVID-19 vaccination status in between those more severely affected by influenza, this information would be certainly welcomed.

As noted in [3], ideally for the Omicron variant to be the final wave of concern for the COVID-19 pandemic, it would help if this infection could stimulate strong and long-lasting immunity against potential future variants, through a protective T cell response [3], [7]. Preserved T cell immunity to Omicron may thus contribute to protection from severe COVID-19 infection caused by future variants, possibly better than adopting recurrent booster shots by the same vaccines. It is believed that T cell response from natural infection may induce longer and stronger protection than spike-protein-induced mRNA vaccination. The spike-protein-induced mRNA vaccination stimulates T-cell responses without inducing protection. This is demonstrated by a large number of infected by Omicron in high vaccination rates countries, mostly among those who have been fully vaccinated with mRNA and DNA vaccines, also after administration of boosters by same vaccines (see the cases not only of New South Wales in Australia but also of the remaining states of Australia or the United Kingdom).

According to [7], the non-spike proteins N and ORF1 and their T cell epitopes (protein fragments) exhibit cross-reactivity between SARS-CoV-2 and human coronavirus (huCoVs). Thus, if N-protein epitopes from huCoVs could induce long-term protective T cell immunity against SARS-CoV-2, then the epitopes from Omicron should induce stronger and long-lasting T cell immunity against novel SARS-CoV-2 variants [3]. According to [8] all the known human coronaviruses produce immunity with similar characteristics. Thus, widespread infection of SARS-CoV-2 infection through a variant of increasing infectivity but reducing lethality, as is the case of Omicron, may result in an endemic circulation of SARS-CoV-2 with mild symptoms and downgraded lethality also with future variants. Naturally acquired immunity was already not inferior to the immunity from the existing vaccines with prior variants [9, 10, 11, 12]. In the case of Omicron, definitively the efficacy of existing vaccines is generally less than the naturally acquired immunity.

Vaccination mostly by spike protein mRNA vaccines was already widespread before Omicron but did not prevent this latest wave. Spike protein vaccines do not induce long-lasting and effective T cell protection, with booster shots by the same vaccines unlikely to make any difference. Hence, frequent booster shots with the same vaccines are not a solution to the pandemic. Attribution of the status of “immune” to those who received two shots of a spike protein vaccine, or a third, or even fourth booster shots, is unscientific, negating the evidence of fully vaccinated being infected at about the same rate as the non-vaccinated, and, with about same low case fatality rate overestimated at 0.1–0.2%, but likely one-third of this for the unreported cases. Discriminations based on vaccination status, despite being popular across Australia, do not make any sense, as those vaccinated with or without boosters are not immune from being infected, and may transmit the virus the same as the non-vaccinated. More likely, widespread natural immunity...
by Omicron could prevent future SARS-CoV-2 variants to represent a pandemic.

In this hypothesis, frequent booster shots by the same vaccines appear to be unnecessary. Repealing any pandemic requirements impinging on personal freedoms, protecting the vulnerable [13], and adopting antiviral therapies [14, 15, 16, 17] seem the correct way to progress, does not matter if because of the herd immunity is achieved by infection more than vaccination as suggested by some, or simply because the much less lethal virus now constitutes a danger only for the extremely vulnerable as highlighted by others, a danger that repurposed antivirals may drastically reduce especially if administered in the first days of infection [18].

There is definitively a need for better collecting and sharing critical information about the efficacy of COVID-19 vaccines and drugs.

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References
1. Spreeuwenberg P, Kroneman M, Paget J (2018) Reassessing the global mortality burden of the 1918 influenza pandemic. Am J Epidemiol 187(12):2561–2567
2. Aassve A, Alfani G, Gandolfi F, Le Moglie M (2021) Epidemics and trust: the case of the Spanish flu. Health Econ 30(4):840–857
3. Wang J, Pandemic G, Endemic H (2021) www.theepochtimes.com/gooodbye-pandemic-hello-endemic_4216339.html, visited January 1, 2022
4. http://www.channelnewsasia.com/world/uk-s-johnson-set-scrap-covid-19-restrictions-2510356
5. http://www.theage.com.au/national/people-are-still-dying-from-covid-but-who-and-are-they-vaccinated-20220314-p5a4d6.html
6. http://www.health.nsw.gov.au/Infectious/covid-19/Documents/covid-19-surveillance-report-20220303.pdf
7. Kundu R, Narean JS, Wang L, Fenn J, Pillay T, Fernandez ND, Conibear E, Koycheva A, Davies M, Tolosa-Wright M, Hakki S (2022) Cross-reactive memory T cells associate with protection against SARS-CoV-2 infection in COVID-19 contacts. Nat Comm 13(1):1–8
8. Lavine JS, Bjornstad ON, Antia R (2021) Immunological characteristics govern the transition of COVID-19 to endemicity. Science 371(6530):741–745
9. Le Bert N, Tan AT, Kunasegaran K, Tham CY, Hafezi M, Chia A, Chng MHY, Lin M, Tan N, Linster M, Chia WN (2020) SARS-CoV-2-specific T cell immunity in cases of COVID-19 and SARS, and uninfected controls. Nature 584(7821):457–462
10. Le Bert N, Clapham HE, Tan AT, Chia WN, Lim JM, Kunasegaran K, Tan LWL, Dutertre CA, Shankar N, Lim JM (2021) Highly functional virus-specific cellular immune response in asymptomatic SARS-CoV-2 infection. J Exp Med 218(5):e20202617
11. Pilz S, Chakeri A, Ioannidis JP, Richter L, Theiler-Schwetz V, Trummer C, Krause R, Allerberger F (2021) SARS‐CoV‐2 reinfection risk in Austria. Eur J Clin Invest 51(4):e13520
12. Wajnberg A, Amanat F, Firpo A, Altman DR, Bailey MJ, Mansour M, McMahon M, Meade P, Mendu DR, Muellers K, Stadlbauer D (2020) Robust neutralizing antibodies to SARS-CoV-2 infection persist for months. Science 370(6521):1227–1230
13. Boretti A (2021) Scientists are more in favor of Covid-19 protection than restrictions. Ethics, Medicine, and Public Health, 16, p.100627
14. Boretti A (2022) Zinc augments the antiviral potential of HCQ/CQ and ivermectin to reduce the risks of more serious outcomes from COVID-19 infection. Journal of Trace Elements in Medicine and Biology, p.126954
15. Boretti A (2021) Pharmacotherapy for COVID-19 infection in the countries of the Cooperation Council for the Arab States. J Taibah Univ Med Sci 16(5):794–797
16. Boretti A (2021) Analysis of the performances of the covid-19 therapeutic approaches in the United Arab Emirates. Signa Vitae 17(3):256–263
17. Boretti A (2021) Safety and efficacy of chloroquine/hydroxychloroquine in sars-cov-2 infection. Asian Journal of Chemistry, pp.1718–1722
18. c19early.com/
19. http://www.health.nsw.gov.au/Infectious/covid-19/Documents/weekly-covid-overview-20220618.pdf
20. ourworldindata.org

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