

EDITORIAL

COVID-19 VACCINES BOOSTERS: A DOOR WAY OF TREATMENT?

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As of September 20, 2021, the entire planet has reported 218.5 million COVID-19 cases, with 4.52 million fatalities. Lockdowns and softening measures have been thrown into turmoil throughout the world since the outbreak. Our social life will only return to normal once an appropriate vaccine is produced and proper authorized preventive techniques are implemented. To tackle this pandemic, governments and health experts all around the globe are experimenting with a range of measures and preventative strategies. Certain countries are considered to be more successful than others in terms of providing safety to their inhabitants and increasing their economic activities. A plethora of vaccinations have been produced, and a research anthology has been published. However, medical personnel are still searching for a viable treatment to limit this pandemic.

Keywords: Coronavirus pandemic, booster vaccines, mass vaccination

Pak J Physiol 2021;17(3):1-2

There is a rising worry about the inadequate protection offered by COVID-19 vaccinations against the formation of SARS-CoV-2 viral strains. The United States speaks with Pfizer about delivering equivalent dosages to the most vulnerable people. Israel has begun supplying Pfizer with vaccination booster injections for people at risk. People with COVID-19 vaccinations have reduced the chances of contracting the virus causing the disease, which is less likely to produce the serious signs of sickness. However, the findings suggest that current vaccinations, for example a Delta version, might provide less protection from future variants of SARS-CoV-2.¹ According to Centers for Disease Control and Prevention (CDC) Study Trusted Source, the immune reaction to a delta variation has been decreased compared with prior strains in 95% of patients who have taken both doses of Pfizer-BioNTech or of Oxford-AstraZeneca CVC-19.² According to the Israeli Ministry of Health, the Pfizer-BioNTech vaccine has lowered its efficacy in prevention of symptomatic COVID-19 by 64% six months after inoculation.² However, two Pfizer dose levels have been found to be able to prevent serious sickness in 93% of people. The United States still has to decide whether booster vaccinations should be provided or not. However, it has been pointed out by the CDC and the Food and Drug Administration (FDA), that the authority is ready for booster-dose if and when the study reveals it is required.^{1,2}

Vaccine boosters are supplemental doses of vaccines that must be used to further guard the illness since the benefits of some vaccines are reduced over time. Many viral diseases require booster vaccines such as the yearly flu. However, Diphtheria, Pertussis and Tetanus, once every 10 years are recommended as boosters. Lower dosages are better for some vaccines than a single high dose of immunization. This method permits a long-standing immune response to the

immune system. When the immune system recalls antigen that has already been triggered, the next time it meets them, it may respond more rapidly. Many vaccination boosters have been changed to improve their efficacy in the same way as prior dosages. For example, the influenza vaccine is amended every year to respond better to new changes in influenza viruses.³

For one of two reasons, individuals might choose vaccine boosters. Firstly, our immunity usually decreases with age. If some antigens aren't often exposed to the immune system, they might become less competent to prevent infection or illness. Vaccine boosters assist the immune system to maintain a protective response. The spokesperson on COVID-19 Vaccine Team University of Oxford informed Medical News Today that viral mutations are a further reason we may require booster vaccines. Certain variations have developed in order to bypass certain elements of the human immune response which means that they can infect persons already infected or immunized with the immune response to the virus. On the other hand, the virus cannot avoid all parts of human immune response. Booster vaccinations are beneficial since they can increase portions that the virus shape cannot boost our immune response.^{2,3}

According to CDC the published evidence suggests that the majority of COVID-19 vaccines provide a robust immune response that provides adequate protection against the virus. The duration of protection by COVID-19 vaccinations at their present dose is unclear. Booster doses may assist seniors or those with impaired introductive immune systems since, after the initial vaccinations, their bodies may not have formed a powerful enough immune response.

It is those who are not responding to vaccines where we need be careful.⁴ Many vulnerable people fall into this group, and previous vaccinations have demonstrated that seniors are not necessarily protected

to the same extent as younger people. We should examine carefully if supporting them is appropriate.

According to Oxford Vaccine Team COVID-19, there is nothing contentious scientifically about extra booster vaccines; they function in a two-vaccine schedule in much the same way as the second. The main goal of the vaccinations is to maintain the masses outside of the hospital.⁵

Vaccines have proven that hospitalizations are significantly reduced. According to health pantheons, supply of vaccines will be constrained in the near future. Sir Andrew argues that before providing boosters to others, it is necessary to prioritize those who have not yet had a single injection. Some even ask whether it is morally right to promote vaccine users, when many individuals, especially in poor nations, have not even received a single shot and are thus more at risk for infection. Others are unconvinced that a third vaccination is needed. T and B cells, which are a body immune system component, respond to vaccination by creating a long-lasting viral protection. B cells are the immune system's 'memory cells' which produce virus-binding antibodies. T cells help these B cell antibodies to be synthesized. Some T cells are capable of killing contaminated cells.⁶

One research—not yet reviewed by peers, but accessible on an online pre-print source—shows a long-lasting T-cell response to those recovering from moderate COVID-19. Another study, which was released prior to the preprinting service peer review, found that B cells can develop antibodies which specifically target newer forms of SARS-CoV-2 in people recovering with symptomatic or mild COVID-19.^{4,6}

Vaccination booster dosages researches are currently being conducted including some preliminary inquiries. Although current vaccinations protect against recognized variations, they may diminish as the virus mutates and new forms arise. The antibody responses were decreased when exposed to delta and beta forms of SARS-CoV-2 respectively, discovered in India and South Africa, which were demonstrated by patients who were completely vaccinated with Pfizer-BioNTech and Oxford-AstraZeneca vaccines. Also available online via a preprint site, another research revealed that individuals were immunized from multiple SARS-CoV-2 variations, including the delta form following the single

dosage of the Johnson & Johnson vaccine. The immunological responses to the delta fluctuation seemed lower than in prior SARS-CoV-2 versions.⁷

A statement published on July 8, 2021 by Pfizer and BioNTech stated that the booster dosage of their vaccine 6 months after the second dose induces an immunological response 5–10 times higher than the response after the 2nd dose against diverse virus strains. But they say they are working on an updated version of the vaccination against the delta variant. Several clinical studies were underway to learn more about the protective duration in normal vaccine regimens. How it changes after a 3rd dose, and what happens when the 3rd dose corresponds better to new variants need answers. However, given the recent start of most of the research, findings are not available for a while.^{1,5,7}

It is important to mention that vaccination process is continuing globally. However, with the emergence of novel variants of Coronavirus, it is a need of the hour to administer vaccine boosters as it contracts complications among people. Various studies have proved that it provides a defensive barrier to our body.

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Received: 11 Sep 2021

Reviewed: 20 Sep 2021

Accepted: 21 Sep 2021

Contribution of Authors:

TH: Manuscript-writing

S: Concept, Idea of Editorial

SS: Data collection, Literature search