ISSN: 2577 - 8005

Opinion Article

Medical & Clinical Research

Third Shot vaccination for COVID-19 in Israel

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Submitted: 02 Oct 2021; **Accepted:** 06 Oct 2021; **Published:** 16 Oct 2021

Citation: *Shimon Shatzmiller (2021) Third Shot vaccination for COVID-19 in Israel. Medical & Clinical Research 6(10): 643-646.*

Abstract

After several manufacturers announced COVID-19 vaccine efficacy in clinical trials for disease, a comprehensive post-efficacy strategy for the following steps to ensure vaccination of the global population is now required. These considerations should include: how to manufacture billions of doses of high-quality vaccines, support for vaccine purchase, coordination of supply, the equitable distribution of vaccines, and the logistics of global vaccine delivery, all of which are a prelude to a massive vaccination campaign targeting people of all ages. Furthermore, additional scientific questions about the vaccines remain, and that should be answered to improve vaccine efficacy, including questions regarding the optimization of vaccination regimens, booster doses, the correlates of protection, vaccine effectiveness, safety, and enhanced surveillance. The timely and coordinated execution of these post-efficacy tasks will bring the pandemic effective and efficient [1].

Keywords: COVID-19, Vaccination, Pandemic.

Foreword

Well, first, I think we need to understand what we mean when we say booster shots. What we'm really talking about right now is, is it necessary to get a third dose of vaccine if you have already received your first two doses? And there are really three reasons why we might want to give another one.

The first is if you did not respond, if you are in the category of people who did not respond properly to the first two doses you received, we have some information that may be needed for people with the vaccine. Third dose because these first two do not do what they do in healthy or normal people.

The second reason why we may give a third dose is that if over time the immunity you have received and gained as a result of immunization begins to weaken, it begins to deteriorate or decrease over time. And in fact, the evidence right now shows that vaccines hold up exceptionally well to protect you from a serious illness.

Figure 1: The next step for a COVID-19 vaccine.

After a COVID-19 vaccine has demonstrated efficacy in a clinical trial, the vaccine must be approved and manufacturing scaled up, according to an international standard known as CGMP. The transportation of the vaccine must respect the cold-chain

requirements. COVID-19 vaccines should be allocated with respect to equity and access for LMICs. Several scientific questions around optimization of the vaccine(s) dose and schedule, boosting and correlates of protection must be answered, particularly if testing of the 'second wave' of vaccines cannot be accomplished with a placebo group (owing to licensure or approval of first-wave vaccines). Collection of effectiveness data and understanding indirect protective effects of vaccination will allow countries to make rational plans for maintaining herd protection. Surveillance for COVID-19 mutations and the sensitivity of those mutations to vaccine-induced immune responses will be necessary, as will continued vigilance for the emergence of new zoonotic coronavirus infections. Finally, for effective control of COVID-19 transmission, countries will need to address vaccine hesitancy issues; increasing vaccines' uptake will be a priority before control over COVID-19 can be gained. Credit ref [1].

The consequences might be hospitalization and even death. We, therefore, do not see strong evidence leading to the need to provide a third dose to people who have already received twice the vaccination.

This increase is related to the entry into the country of a strain (variant) Delta that spread rapidly and is reflected in an increase in the number of verified and the number of severe patients. Among those infected: children, the vast majority of whom have not yet been vaccinated but are also vaccinated, including particularly severe morbidity in adults. The Israeli Ministry of Health estimates that there are two leading causes of infection and morbidity: The vaccine confers less protection against the Delta strain relative to the strains that were common in Israel in the third wave Decay of the immune response over time from the second dose. If you are included in one of the groups that are eligible for a third vaccine and 5 months have passed since receiving the second vaccine dose go get vaccinated, for your health!

Safety

There are certain safety-related events due to rarity or pathogenesis, they may only be detected during long-term follow-up of post-vaccination side effects. FDA guidelines for emergency use approval offer a median duration of follow-up of Phase 3 trial volunteers in a two-month vaccination of [2-6]. Most events are expected to enter this window after vaccination. For example, intususception after vaccination with a virus is a rare but well-studied event, occurring with a frequency of 1/20,000-1/100,000 vaccines, and a statistical association between intussusception and rotavirus vaccination was seen in about [3] but not [4] surgeries. In high-income countries, it is rarely fatal, and in cases of LMIC, the benefit of vaccination in preventing disease and death in vaccinated infants is significant [5]. Previous anti-epidemic campaigns, such as the 1976 or 2009 swine flu epidemics, followed by rare but severe side effects, Gillin-Bar syndrome and narcolepsy [6]. Potential.

What Steps are taken to ensure

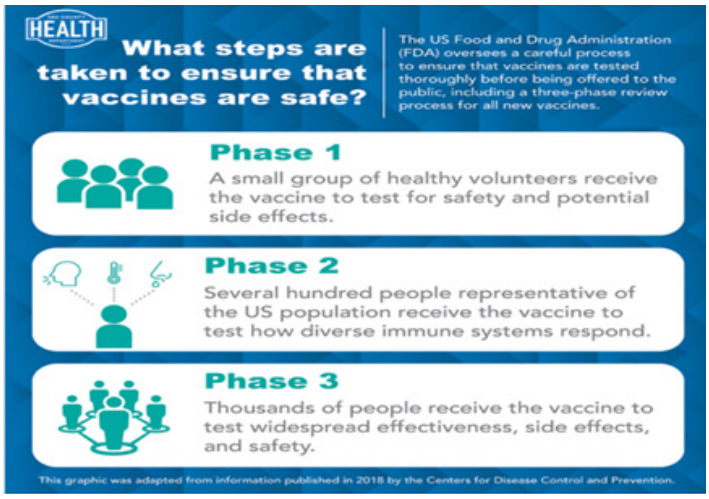

Figure 2: What steps are taken to ensure safety of the vaccine ? (credit ref [7]).

Scientific Questions

Optimization of dosage, schedule, and accelerating men.

The rate of vaccine development for SARS-CoV-2 has been unprecedented. However, the working time that companies and researchers will have to research the dose optimization and the schedule is reduced in the urgency of development. A fractional dose has already been used to expand the vaccine supply for yellow fever 27,28, and if lower doses of COVID-19 vaccines prove to be effective and safe, then, especially when supply is limited, the fractional quantities may allow more people to be vaccinated. AstraZeneca reported that a half-dose regimen followed by at least one month followed by a full dose of chimpanzee-based adenovirus-based COVID-19 vaccine resulted in greater efficacy than two full doses at least one month apart. Sinovac found that for their complete virus vaccine (WIV), extending the dose range of COVID-19 vaccine from 2 weeks to 4 weeks may improve the neutralization of antibody antibodies 12. Although a closer dose interval may be beneficial during outbreak, optimizing the schedule for size and durability Of induced responses may make immune campaigns to the COVID-19 virus more practical because they allow national programs to plan and execute more effectively 29,30.

We do not yet know whether the protective vaccine responses are resistant; Perhaps identifying immune defense adapters will determine what level of immune biomarker is needed for protection. Although the excess evidence suggests that the adaptive vaccine responses caused by SARS-CoV-2 infection exist and may protect against re-infection 31, experience with seasonal corona virus and current experience with SARS-CoV-2 suggest that immunity to natural infection may disappear. Time and report re-infection Additional booster doses may be needed to prolong the duration of

protection; We do not know if initial series and amplification doses can or should be different. It is also unclear whether people who were infected will benefit from a vaccine in the past. Although at this stage, a vaccine against SARS-CoV-2 should occur regardless of the state of infection.

Protection Adapter

A defense adapter is a vaccine-induced biological marker whose presence is associated with a lower risk of infection, and not all vaccines have protection adapters (35,36,37). For example, a 1:40 hemagglutinin inhibitory antibody title is used to license flu vaccines that vary from year to year 38, whereas anti-polyribosylribitol phosphate antibody levels of 0.15 micrograms of 1 million or more are required to license a hemophilus-type conjugated influenza B vaccine. Of Phase 3 randomized trials will have a vaccine serum test of vaccinated and infected volunteers compared to a group of unvaccinated vaccinated volunteers 36,. Ironically, highly effective vaccines (such as human papillomavirus vaccines or Pfizer and Moderna COVID-19 vaccines with 94-95% efficacy) are sometimes problematic because too few 'vaccinated' volunteers induce correlation surgery. If one is found, the correlation may then be used as a proxy for vaccine efficacy, providing a biological marker for dose, timing, and compatibility optimization. Instead of clinical endpoints, this vaccine corlate can be used to simplify and accelerate the development of future vaccines, reducing the size of the trial and the cost of efficacy trials. This may be an important issue for testing the second and third wave COVID-19 vaccines (i.e., the vaccines whose intermediate efficacy results are expected to reach mid to late 2021). This assumes that the defense mechanism is common; It may not be valid, for example, if the vaccine for which a match was prescribed was injectable, and the comparator was given orally [8-10]

In Israel, government policy is to vaccinatre the whole poopulation from 0-120 with three shots. On october 3 the new regulation is applied. Tomorrow (Sunday) the conditions for receiving the green card will change and the certificate that was valid until the end of September will be revoked. Prior to the update of the green label, and the need for a third vaccine to receive it, 58,679 Israelis received the third vaccine dose yesterday. This is the highest daily number of vaccinators since 9 September. So who will be eligible for the new green label, what does it provide, what places operate under it and how can it be produced? Ynet makes an order.

Who is entitled to a green sign from Sunday?

Anyone who has received three doses of Pfizer vaccine and at least a week has passed from the third vaccine dose is entitled to a green label for six months. Those who have received two doses of vaccine and at least one week have passed from Pfizer's second vaccine and two weeks from Moderna's vaccine, and less than six months have passed from the second vaccine [11].

In America, the FDA approved 3 shot only for elderly and people with backgound illnesses that require susting the immune system, like cancer patientds. Israel base it's policy on the basis of local medicinal experience and research. Israsel uses preferably the Pfiser vaccine. Most elderly and many younger hasvre already been vaccinated with the 3rd shot. This keeps the number of seriousely ill people with COVID-19, Delta mutation to 700. Most of them are person that resisted any vaccination, over 90% of the diseased. Now there is little to do, many of them will unfortunatele face death.

What will be the validity of the green character in the new outline? The mark will be valid for six months from the recipient of the third vaccine for those who received three vaccines, ie two vaccines and a booster dose, and one week has passed from its receipt. If you have received two doses of the vaccine, the mark will be valid for six months, since you received the second vaccine. For those recovering from Corona, the green label will be valid for six months from the date of approval of the recovery. For corona recoverers who have been vaccinated, the green mark will be valid for six months of receiving the vaccine.

THE CWHO is less enthusiastic about the 3rd buster shot

Dr. Katherine O'Brien (WHO) "Currently, we have evidence that there are a small proportion of people who suffer from severe vaccine conditions. Those who do not seem to respond to the first two doses in the way that people who do not have an uncompromising condition do what they do they need a third dose. But that is really because of the primary reaction their system affords. It is because they did not respond appropriately to the first two servings. But aside from the protection that an amplification dose gives people, we need to know a few other considerations.

Does giving a third dose really boost the immune response? And we do see evidence that this is true, and we would expect it to be true based on what we know about how the vaccine is used. But the other issue is should these doses be given? As I mentioned earlier, the evidence for this argument is weak. We certainly do not see unequivocal evidence that an increase in dose is needed among most people who have already been vaccinated. And the third issue is safety.

The provision of a third dose, should be monitored for safety issues, and we would like to see a safety database before proposing such a recommendation. And this evidence is also constructive, but we are not there yet." In Summary What does the evidence say so far about the safety and effectiveness of booster shots? Are there groups who may need them? Should the world be considering booster shots at this stage of the pandemic? Dr Katherine O'Brien explains in Science in 5 this week [12].

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