

“Post COVID19 Vaccination Wave” -- Be Aware-Cautions, Cautions and Cautions Needed in 2021!!!!

Mayank Vats^{1*}, Deepa Khandelwal² and Spraha Vats²

¹Senior Specialist, Department of Pulmonary and Sleep Medicine Rashid Hospital, Dubai, UAE

²ENT Specialist and Paediatric Sleep Specialist, Dubai, UAE

***Corresponding Author:** Mayank Vats, Senior Specialist, Department of Pulmonary and Sleep Medicine Rashid Hospital, Dubai, UAE.

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Abstract

COVID19 pandemic is still going on in full bloom and with the multiple mutants and variants of concern wits causing further dissemination of CVOID infection and there seems no hope that it will subside soon or will become under control.

Already, over more than 1 year COVID19 has caused significant devastation globally and still continue to do so with its more destructive second wave. Fortunately, vaccine has been developed but with variable efficacy and still mass immunization/universal immunization if far away from the target to build herd immunity to control COVID infection. This article will focus on the major issue which may happen after the post COVID vaccination including the resurgence of post COVID vaccination wave and emergence of various resistant strains as well.

Keywords: COVID19; Vaccine; Covid Pandemic; Post Vaccination Wave

Introduction

COVID has tolled Billions of cases, millions of deaths, trillions of USD loss globally since its origin. It's most rampant pandemic of the century and even after 1 year of worst global impact we don't know what's the exact pathogenesis, treatment and the future of this disease.

After the Mass destruction caused by COVID 19 in terms of infections, hospitalization, deaths, economic and financial loss to whole world, over last more than 1 year, now Availability of COVID vaccinations from different pharmaceutical companies and with different claims of efficacy ranging from 60 to 80 percent for the prevention of COVID 19 in terms of preventing infection, reducing severity of COVID19 diseases in the vaccinated population based on the phase 2 and 3 trials conducted on small numbers of patients globally and the emergency use authorization by WHO considering the great impact of COVID pandemic. Still lots of things have to be learnt for all the available vaccines including the safety, and actual efficacy and long term protection from Corona in vaccinated persons.

Although globally a mass vaccination program has been rolled out and maximum numbers of persons are being vaccinated in a very short span with the target of universal vaccination earliest possible to develop the immunity and curb the spread of virus.

It typically takes a few weeks for the body to build immunity (protection against the virus that causes COVID-19) after vaccination. That means it's possible a person could be infected with the virus that causes COVID-19 just before or just after vaccination and still get sick.

Details of vaccines and the cases and vaccination done per 1000 population in major countries.

Its important to note that that these vaccines are not 100% protective and till now long term phase 4 trials involving huge number of population are not conducted (still under way) hence only time will tell the efficacy and safety profile of the vaccine.

Another important point that the distribution of vaccines are not uniform globally considering huge requirements and relatively short supply due to production and technical issues of transporting and storage at ultra-low temperature and hence underdeveloped and developing countries does not have enough vaccine to roll out mass universal vaccination at a snapshot of time which will lead to partial immunization of o population and while on the other hand putting the unimmunized population at risk of acquiring infection and spread to vaccinated people.

All countries are gradually easing off the travel and tourism restrictions to rebuild the destroyed economics leading to international travel and with possible spread of original or mutant variant of Corona (UK and South Africa and brazil variant having less susceptibility for the vaccine and exceedingly high transmissibility).

As a natural relief seeking behaviour of people, that is to avoid mask, to think that after vaccination they do not need any social distancing and protections from infection, to do social gatherings and international and national travel, it could impose an imminent threat to the circulation of virus and then post vaccination wave could emerge with its unpredictable transmission and consequent morbidity and mortality.

Recently More than 56 million people in the USA have now been fully vaccinated against COVID-19. Yet cases are rising again in some parts of the country, notably in Michigan and states in the Northeast [1].

As of 15 April, approximately More than 841 million vaccine doses have been administered worldwide, equal to 11 doses for every 100 people. There is already a stark gap between vaccination programs in different countries, with many yet to report a single dose. And data is not available from majority of countries and the vaccination rates are having an extreme variable range from less than 0.1 percent to highest 56% for both the doses in various countries, (data source: Our World in Data project, University of Oxford). In USA 37% (at least one dose) and 23% (two doses) population has been vaccinated till 15 April. While vaccine doses remain relatively scarce globally, most countries have focused their early vaccination efforts on priority groups like the clinically vulnerable; older people; and front-line medical workers.

Israel, Seychelles (both countries had administered 116 doses/every 100 people) and UAE (97 doses/every 100 people) is vaccinating its population faster than any other country. In Seychelles (68% and 47% population) and in Israel (60% and 56%) has received 1st and 2nd dose of vaccine respectively, which are impressive figures but still extremely far from universal 100% immunization [2]. Apart from these countries, NY times data report source clearly shows that the fully vaccinated person accounts to nearly negligible global population and these vaccine recipient would be risk of getting infection from the nonvaccinated COVID19 infected persons if they don't comply 100% with all the infection control precautions.

Following are the concrete facts about the immunity development, efficacy and benefits of vaccine and factors hindering full vaccination drive and rise of post vaccination wave:

1. Its very important to note that f development of full immunity takes weeks after the second dose and then also Immunity is not absolute 100% full proof and there are no clinical or lab parameters to define the efficiency of vaccine or quantification and longevity of the vaccine induced immunity. A person can get infected in post vaccination period although with less severe disease as claimed by manufactures but still exceedingly difficult to comment.
2. All vaccines don't have similar efficacy (varies from 40 to 90% as claimed by the manufactures and may be lower in practicality!!!) and all vaccines are not effective against all the variants (for example less efficacy against B1.351, South African, brazil variant and recent double mutant variant).

3. Another important psychological concept which should be considered is VATS'S tetrad of behavioural effect which is a combination of 4 behavioural and economic factors such as:
 - a. Natural relief seeking behaviour (people are tired of wearing mask, social distancing and restrictions, sanitization practices, infection control measures which could be combined together labelled as pandemic fatigue.
 - b. Denial behaviour/under perception of the risk or behavioural compensation for the perceived risk, e.g. when the risk is more than people becomes more cautious and vice versa behaviour and hence getting exposed to high risk activities (people think that they will not get infection because they did not get infection till now and now the incidence of covid case are reducing hence they are becoming more careless) which is not true and predisposes them to acquire COVID19 infection.
 - c. To Combat the effects of Economic meltdown (a significant global economic crisis leading people to focus on their business/jobs in order to compensate for the loss suffered in last 1 year and for survival) and hence they are exposed to other persons with risk of getting infection.
 - d. Pseudo confidence/sense of false security in the vaccine and hence not following stringent infection control precautions soon after taking the vaccine as evident by less use of masks and PPE kits by the health care workers and social distancing and hand sanitization have become progressively less. The bitter fact is that currently available vaccines neither give immediate or 100% protection against acquiring infection although it has been claimed that after vaccine the severity of COVID infection would be less although we have seen many cases in our practices that patients are getting infections even after vaccination. These all can lead to further rise of cases globally with high incidence of new mutant variants with consequent morbidity and mortality.

Its very important to vaccinate the majority (ideally 100%) of people at risk and population and at the same time to remember VATS'S tetrad of behavioural effect because this behavioural tetrad is dangerous and can be disastrous for mankind with consequent huge post vaccination wave.

Conclusion

Considering the multiple prevailing strain of Corona virus with high transmissibility and severity plus ongoing intensive immunization program worldwide taking a long time for universal immunization and with uncertain efficacy of vaccines (ranging from 40 - 80 percent for different vaccines) and human behavioural tetrad as mentioned above and with complex interplay of COVID19 virus's unpredictable mutational capacity, there is significant threat that we could face large post vaccination wave even during and after universal immunization and hence author advise to take all universal precautions stringently, Social distancing, Mask up, and Sanitization (Remember SMS) till universal global vaccination with full effect of vaccination is achieved with development of herd immunity and/or till the time virus becomes weak by mutation or fully eradicated and there are no new cases of COVID 19.

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