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Short Communication

A Global Update on COVID-19 Pandemic

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Abstract: As of October 10, 2021, the entire planet has reported 219 million COVID-19 cases, with 4.55 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. So far, 22 vaccines have been approved. They are effective against immunocompromised people, pregnant women, and multiple sclerosis patients. Certain nations 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: COVID-19 pandemic, Hybrid immunity, Mass vaccinations, mRNA Vaccines, DNA vaccines, FDA.

1. INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes COVID-19, a respiratory disease. Researchers from all around the world are working to create a vaccine [1, 2]. Numerous potential vaccines are in the conduit or are in their nascent phases of clinical trials, while others are clinically accessible and have been authorized. Animal studies, as well as human trials, have already revealed possible tendencies toward achieving a high level of neutralizing antibodies. As of today, there are now 151 potential vaccine candidates, currently, 41 potential vaccines are in stage 3 clinical studies. So far, 22 vaccinations have been approved in various countries. The Food and Drug Administration (FDA) has approved the Pfizer-BioNTech COVID-19 vaccination for persons aged 16 and above, and it is being considered for kids aged 5 to 15. The vaccine is presently being marketed under the trade name "Comirnaty." Dr. Janet Woodcock, the acting FDA Commissioner, stated in the organization's news release, "While millions of individuals have already successfully received COVID-19 vaccinations, we recognize that FDA approval of a vaccine may potentially inspire further confidence in being vaccinated among the masses." Today's accomplishment puts us one step closer to changing the worldwide direction of the pandemic [3, 4]. Since the start of the pandemic, vaccine acceptance has become a great conundrum all over the world. Even rich countries have often struggled to roll out vaccines but in Global South, things are much worse [5].

2. MATERIAL AND METHODS

2.1 Global Review of Pandemic

Global review of COVID-19 pandemic is shown in Table 1.

2.1.1 What we need to know about DNA-vaccines

The field of medicine continues to see radical new techniques for combating COVID-19, with the most recent development being in vaccination. India has approved the world's first DNA vaccine for use in an emergency against COVID-19, joining almost a dozen additional DNA vaccine candidates

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in clinical testing. The ZyCoV-D vaccine works by priming the immune system against the virus that causes COVID-19, SARS-CoV-2. It is also administered without the use of an injection. This vaccine differs from the messenger RNA (mRNA) technology utilized in two of the currently approved COVID-19 vaccines, Moderna and Pfizer-BioNTech, both of which have received praise for their inventiveness [6].

2.1.2 Hybrid immunity is more effective to combat the SARS-CoV-2 virus

Several other investigations have indicated that individuals who have both contracted SARS-CoV-2 and received the COVID-19 vaccine had nearly "bulletproof" immunity against the new coronavirus and its variants. People acquire a highly powerful immune response as part of this "hybrid" immunity, as some researchers refer to it, by producing a large number of antibodies as well as "flexible" antibodies capable of repelling numerous coronaviruses, including SARS-CoV-2 subtypes. The researchers conclude, "Overall, hybrid immunity against SARS-CoV-2 appears to be astoundingly high." Whatever you call it, this type of immunity is excellent news in the middle of what appears to be an endless supply of bad COVID-19 news. Several recent investigations have revealed that certain persons have a very high immune response to SARS-CoV-2, the coronavirus that causes COVID-19. Their bodies produce very high levels of antibodies, but they also produce antibodies with great flexibility — antibodies that are likely capable of combating the coronavirus variants that are currently circulating in the world but are also likely effective against variants that may emerge in the future [7].

2.1.3 Johnson & Johnson vaccine to be 80 % effective against infection and hospitalization

Credible proof from worldwide research shows that Johnson & Johnson's single-shot vaccination provides high and stable protection against COVID-19 across time — that is, from the time the Delta variant first appeared until the time it became prevalent. The firm recently revealed the findings of a major trial, which indicated that the vaccine was 79% effective in avoiding coronavirus infections and 81% successful in reducing hospitalizations. The study revealed no evidence of decreased efficacy between March and late July when the number of Delta variant cases increased. "Our extensive real-world data and phase 3 trials indicate that the Johnson & Johnson vaccination provides substantial and long-lasting protection against COVID-19-related hospitalizations." Furthermore, our phase 3 study findings show further protection

Table 1. Global review of COVID-19 pandemic

COVID-19 Concerns Globally	Update & Statistics	Citation
No. of COVID-19 cases globally	313 million	1
No. of COVID-19 mortalities globally	4.55 million	1
No. of approved vaccines globally	22	1
No. of COVID-19 vaccination administration globally	1.93 billion fully vaccinated, 5.04 billion partially vaccinated	1
Can Multiple Sclerosis patients get COVID-19 vaccines	Yes	7,8
Can immunocompromised people get COVID-19 vaccines	Yes	9
Is second dose of mRNA vaccine is safer after allergic response from the first dose?	Yes	7
Which countries are more reluctant towards COVID-19 vaccine jabs?	High income countries	10

against COVID-19-related death," stated Dr. Mathai Mammen, Ph.D., worldwide head of Janssen Research & Development at Johnson & Johnson. Previously, early results indicated that when a booster dose was provided 2 months after the initial injection, the vaccine's effectiveness against moderate-to-severe COVID-19 rose to 94 percent [3, 6].

2.1.4 FDA to approve COVID-19 vaccines for senior citizens

In October 2021, a Food and Drug Administration (FDA) advisory group decided against authorizing a booster dose of the Pfizer COVID-19 vaccination for anyone aged 16 and over. The booster dosage for younger people was defeated by a vote of 16-2. However, the same advisory group voted 18 to 0 in favor of allowing the booster dosage for people over the age of 65 and those at high risk of developing severe COVID-19 after viral infection [3, 4].

2.1.5 COVID-19 vaccines effective against Multiple sclerosis patients

Anti-CD20 monoclonal antibodies, which restrict the activity of B cells, are frequently used by people with multiple sclerosis. A recent small-scale study discovered that, despite the immunosuppression, there was still a strong T-cell response to COVID-19 immunization [8].

2.1.6 Hesitation towards COVID-19 vaccine jabs among low- and middle-income countries

According to a new study published in the journal 'Nature Medicine', populations from low - and middle-income countries (LMICs) had less COVID-19 vaccination reluctance than those from high-income nations. In addition to this, seven studies were conducted in low-income countries (Sierra Leone, Burkina Faso, Rwanda, Uganda, and Mozambique) five studies were undertaken in nations with a lower-middle-income level (India, Pakistan, Nepal, and Nigeria) and one study was done in middle-income country (Colombia). According to the data, the average vaccination acceptance rate in LMICs was 80.3 %. They also demonstrated that even the LMICs with the lowest rates — Burkina Faso and Pakistan — performed better in terms of COVID-19 vaccine uptake than Russia and the United States. Vaccine uptake rates were 66.5 % in both Burkina Faso and Pakistan. Ironically, the digits were 64.6 % in the United States and 30.4 % in Russia. Dr. Alexandra Scacco, a senior research fellow at the WZB Berlin Social Science Center and co-author of the study, observed that "Across nations, we see that adoption of COVID-19 vaccines is typically somewhat diverse, it may be due to their novelty" [9].

2.1.7 Is the second dose of mRNA vaccine is safer after an allergic response from the first dose?

An estimated 2 % of individuals experienced adverse side-effects from mRNA COVID-19 vaccinations, such as the Pfizer-BioNTech and Moderna vaccines. The great majority of these responses are mild. A new study article published in the Journal of American Medical Association examined how these people responded to their second dosage. The study included information from 159 people who experienced an adverse reaction from their first dose of mRNA vaccination and then received a second dose [10].

According to the study, 47/159 individuals took an antihistamine before the second dosage. "All 159 patients, including 19 with first-dose anaphylaxis, tolerated the second dose. Thirty-two (20 %) patients had acute and possibly allergic symptoms associated with the second dosage that were self-limited, mild, and/or alleviated with antihistamines alone" [11].

2.1.8 Experimental COVID-19 vaccines to lasts at room temperature for a month

In a recent study, mice and macaques were given a single dosage of a novel adeno-associated viral vector-based vaccination. The vaccination not only elicited a robust immune response against SARS-CoV-2 variations, but it also stayed stable at room temperature for 1 month. Although the currently available COVID-19 vaccines are extremely effective, they have limited production capacity, and several — such as the Moderna and Pfizer-BioNTech vaccines — need cold-chain storage, which limits their worldwide availability [12].

3. CONCLUSION

Coronavirus is declared a pandemic by WHO the

previous year. Since its inception health pantheons and several big Whig pharmaceutical companies striving best to contain this virus by implementing a plethora of preventive measures and developing COVID-19 vaccines. So far, many vaccines have been developed and their results are very promising. Hitherto, scientists have achieved marvelous results regarding these vaccines such as these vaccines are safe for younger people, pregnant and lactating women, immunocompromised people. Prior to vaccines, many allopathic drugs were used to contract COVID-19 patients such as ivermectin, dexamethasone, actemra, etc. To date, only 5 vaccines have been approved by WHO for emergency use that includes, Pfizer-BioNTech, Moderna, AstraZeneca, Sinopharm, Johnson & Johnson. Furthermore, vaccine boosters are also efficacious against the deadliest strains of COVID-19 such as Delta, Epsilon, Beta, and Alpha. Now people across the globe are trusting these vaccines and voluntarily administering them.

4. CONFLICT OF INTEREST

There is no conflict of interest.

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