Editorial

The perspective of COVID-19 vaccines

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The current COVID-19 is now endemic on every continent and becomes the most challenging outbreaks over centuries, thus millions of people have been infected with the novel coronavirus (SARS-CoV-2), and have contributed to the deaths of more than two million people. Researchers are working continuously to develop safe and effective vaccines that people have started receiving since December 2020. Vaccines against severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) are the most important countermeasure to the COVID-19 pandemic taking into consideration that vaccines induce a robust immune response [1].

In addressing the efficacy, safety, and perspective of COVID-19 vaccines, it can be noticed that, although, only 13 vaccines have been authorized for use across several countries, there are around 100 candidate vaccines under investigation, among them 29 candidate vaccines in stage 3 clinical trials [2].

The available vaccines which have been approved or authorized for use [**Table 1**] are in particular: Pfizer-BioNTech COVID-19 vaccine developed in Germany, Moderna COVID-19 vaccine developed in Cambridge, UK. Oxford AstraZeneca vaccine developed in UK, Coronavac, developed by Sinovac in China, Sputnik V vaccine, in Russia, Covaxin, developed by Bharat Biotech in India, and Johnson & Johnson vaccine developed in USA in which each of these vaccines has received use authorization in at least one country [3].

Table 1: Currently authorized COVID-19 vaccines

Vaccine	Manufacturer	Type of vaccine	Efficacy rate
BNT162b2	Pfizer-BioNTech	mRNA	95%
mRNA-1273	Moderna	mRNA	94.5%
Ad26.COV2.S	Janssen (Johnson & Johnson)	Viral vector	66%
AZD1222	Oxford-AstraZeneca	Viral vector	81.3%
Covishield*	Serum Institute of India	Viral vector	81.3%
Ad5-nCov	CanSino	Viral vector	65.28%
Sputnik V	Gamaleya	Viral vector	91.6%
Covaxin	Bharat Biotech	Inactivated	80.6%
BBIBP-CorV	Sinopharm (Beijing)	Inactivated	79.34%
Inactivated (Vero Cell)	Sinopharm (Wuhan)	Inactivated	72.51%
CoronaVac	Sinovac	Inactivated	50.38%
RBD-dimer	Anhui Zhifei Longcom	Protein subunit	Unknown
EpiVacCorona	FBRI	Protein subunit	Unknown

* Covishield is the Oxford-AstraZeneca vaccine produced for India.

A new research findings show that whoever receives two doses of the mRNA vaccine may reduce COVID-19 symptoms by 80% [4]. In general, the majority of people seem to receive such vaccines safely in which they did not have the disease so far. Although these vaccines showed almost satisfactory efficacy rates, the use of COVID-19 vaccine may develop some kind of risk, namely blood clot, beginning 4 to 16 days' post

vaccination [5], as well as skin rashes and probably others to follow. This week, the European Medicines Agency (EMA) announced that the AstraZeneca vaccine does not increase the risk of blood clots [6].

The perspective of using the COVID-19 vaccine looks promising regardless of the emergence of some side effects or risk at the present time or even perhaps in the coming future for the long term. There is no escape from dealing with this deadly epidemic with utmost caution in all appropriate ways, the first of which is the use of the available vaccines while not ignoring other precautionary measures such as wearing face mask, social distancing, not going to crowded places, sterilizing places, and others.

We must bear in mind that life should continue, not stop, and at the same time deal with the Corona virus with a high-level scientific and social culture.

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