

A Brief Review on Covid-19 Vaccines

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ABSTRACT

Vaccines are biological products that can help the body to acquire immunity against pathogen without occurrence of infection. During clinical trials, vaccines are tested in volunteers to ensure safety and effectiveness. As a part of phase 4 clinical stage, adverse effects are monitored regularly by the licensing authority. The benefit of vaccination is to reduce the risk of death and severity of the disease. Evidence suggests that it is very common to get side effects after covid-19 vaccination. These side effects usually disappear after few days of vaccination. The main aim of this review is to provide an overview of covid-19 vaccines in the present scenario.

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Introduction

Vaccines are biological products that can help the body to acquire immunity against pathogen without occurrence of infection. They are considered as safe and effective strategy for prevention of diseases [1]. Along with vaccine manufacturing companies, various institutions including academic/research are involved in development of covid-19 vaccine. Generally, the development of new vaccine/drug takes approximately 10-15 years. However, emergency use authorization facilitates the production and allows use of vaccines in public health emergencies. In pandemic crisis the period for development of a vaccine is reduced to 12-18 months [2].

During clinical trials, vaccines are tested in volunteers to ensure safety and effectiveness. The results from phase I, II and III clinical trials were reported to the regulatory authorities. They decide whether the vaccine should be approved or not based on their safety and effectiveness. As a part of phase 4 clinical stage, adverse effects are monitored regularly by the licensing authority [3]. Reports from regulatory authority help us to identify rare and common side effects. The benefit of vaccination is to reduce the risk of death and severity of the disease. Evidence suggests that it is very common to get side effects after covid-19 vaccination. These side effects usually disappear after few days of vaccination. They do not last long, instead it was a sign to fight against viral antigen. Most

common reported side effects with majority of the vaccines are pain at injection site, headache, fever, chills, fatigue and muscle pain [4]. The main aim of this review is to provide an overview of covid 19 vaccines in the present scenario.

Covishield

It is a non-replicating viral vector type vaccine manufactured by Serum Institute of India Pvt Ltd. It consists of two doses 0.5 ml each into the deltoid muscle of upper arm. Second dose should be administered between 4-12 weeks after the first dose. Side effects include redness, itching, swelling & lump at injection site, fever and joint pains. A booster dose of covishield is administered after six months of taking the second dose [5].

Covaxin

It is an in-activated type vaccine manufactured by Bharat biotech, India. It consists of two doses 0.5 ml each into the deltoid muscle of upper arm. Second dose should be administered after 4 weeks of taking the first dose. Side effects include headache, nausea and rashes. A booster dose of covaxin is administered after six months of taking the second dose [6].

Janssen

It is a non-replicating viral vector type vaccine manufactured by Johnson and Johnson, USA. It is



administered as a single dose 0.5ml as primary vaccination. The booster dose 0.5ml is administered after 2 months of primary vaccination. Side effects include swollen lymph nodes, tinnitus, difficulty in breathing, dizziness and weakness [7].

Spikevax

It is a m-RNA type vaccine manufactured by Moderna, USA. It is administered intramuscularly as primary series. It consists of two doses, 0.5 ml each with 1 month apart. The booster dose 0.25 ml can be administered after 6 months. Side effects include myalgia, arthralgia, chills, tenderness and fever.

Vaxzevria

It is a non-replicating viral vector type vaccine manufactured by Astra Zeneca, United Kingdom. It consists of two doses 0.5 ml each into the deltoid muscle of upper arm. Second dose should be administered between 4-12 weeks after the first dose. Side effects include sweating, swelling and abdominal pain [8].

Sputnik V

It is a non-replicating viral vector type vaccine manufactured by Gamaleya National Center of Epidemiology and Genetec, Russia. It is administered intramuscularly in two stages. Component-1(recombinant adeno virus serotype 26), blue color at a dose of 0.5 ml. Component- 2 (recombinant adeno virus serotype 5), red color at a dose of 0.5 ml administered after 3 weeks of the administration of the component-1. Side effects include headache, runny nose, cough, sore throat and stomachache [9].

Zycov D

It is a DNA type vaccine manufactured by Cadila health care, India. It is a needle free intradermal vaccine. Total 3 doses, 2 mg each is administered at day 0, day 28 and day 56. Each dose will be given in 2 shots on upper arms (1mg each). Side effects include pinching sensation [10].

Carbevax

It is a protein subunit vaccine manufactured by Biological E Limited, India. It is an intramuscular vaccine. Total two doses, 0.5 ml each administered at

day 0 and day 28. Side effects include fever, headache and itching [11].

Covovax

It is a protein subunit vaccine manufactured by Serum Institute of India Pvt Ltd. It is an intramuscular vaccine. Total two doses, 0.5 ml each administered at day 0 and day 21. Side effects include fever, swelling, headache and itching [12].

Conclusion

The rise of covid-19 cases is mostly due to spread of mutated variants. Covid-19 vaccination is a better way to protect ourselves against disease. They are safe and effective to reduce the spreading of virus. Evidences suggest that prevalence of covid-19 cases were lowest among the vaccinated people than the unvaccinated people. The side effects are more common after the vaccination and last only for few days. After vaccinating, the mortality due to covid-19 was observed to be very minimal and hence, everyone should take the vaccine in time to protect themselves against this deadly virus.

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