

Sputnik Light: Value addition to India's extraordinary COVID-19 vaccination prog

05 October 2021 | Views | By Dr Gajendra Singh, Public Health Expert, Dr Anuja Gupta, Microbiologist

With three vaccines already in India, what is the need for this single-dose vaccine



India is steadily moving towards universal vaccine coverage as it recently crossed the landmark of 84.23 crore doses including 21.2 crores fully vaccinated, according to the Union Ministry of Health and Family Welfare. On other hand, India has already exported 663.7 lakh doses of India made COVID 19 vaccines to 95 countries. This drive is riding on the backbone of three vaccine candidates, Covishield, Covaxin and Sputnik V. You have an option to go for either of the three vaccines.

Briefly, Sputnik V is a two-vector vaccine against coronavirus. Also known as Gam-COVID-Vac, the vaccine uses a heterologous recombinant adenovirus approach using adenovirus 26 (Ad26) and adenovirus 5 (Ad5) as vectors for the expression of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spike protein. The use of two varying serotypes, which are given 21 days apart, is intended to overcome any pre-existing adenovirus immunity in the population. Among the major COVID vaccines in development to date, only Gam-COVID-Vac uses this approach. Around 43.5 lakh doses of Sputnik V are already administered.

In the recent event, the committee, which examines COVID-19 related proposals under an accelerated approval process, at its meeting on September 16, 2021, recommended to the Central Drugs Standard Control Organization (CDSCO) that Hetero Biopharma be allowed to manufacture the vaccine. The panel's decision, which will help enhance the availability of the vaccine, followed a proposal from the Hetero group firm that included interim safety and immunogenicity results from the Phase III clinical trial it had conducted.

Covaxin is an inactivated vaccine that is developed by Hyderabad-based Bharat Biotech International in collaboration with ICMR (Indian Council of Medical Research) and the National Institute of Virology, Pune. It is based on a tried and tested platform of dead viruses. The vaccine is developed using a whole-virion inactivated Vero cell divide platform technology. Inactivated vaccines do not replicate and are likely to revert and cause pathological side effects. They contain dead viruses that are incapable of infecting people but still able to instruct the immune system to mount a defensive reaction against an infection. Around 9.6 crore doses of COVAXIN are already administered.

Covishield is based on a viral vector platform, a chimpanzee adenovirus called ChAdOx1 (the vector), that has been modified to carry the corona virus spike protein into human cells. While the injected cold virus is harmless it serves as an instruction manual for the body on how to fight against similar viruses. This virus is used for infections like Ebola. Being majorly used, 74.9 crore doses of Covishield are already used in India.

Recent conversations bring to notice another vaccine part of the Sputnik family- Sputnik Light. Sputnik Light is the first component of Sputnik V (recombinant human adenovirus serotype number 26 (rAd26)). The single-dose Sputnik Light vaccine demonstrated 79.4 per cent efficacy according to analysed data taken from 28 days after the injection was administered as part of Russia's mass vaccination programme between December 5, 2020 and April 15, 2021. An efficacy level of almost 80 per cent is higher than that of many two-dose vaccines. The Sputnik Light vaccine elicits the development of virus neutralising antibodies in 91.67 per cent of individuals on the 28th-day post-immunization.

A recent study published in *The Lancet* showed that Sputnik Light showed 78.6-83.7 per cent efficacy against COVID-19, significantly higher than most two-shot vaccines. The study was conducted on at least 40,000 elderly people in Argentina.

The question now remains that with three vaccines already in India, what is the need for this single-dose vaccine.

We must not falter and continue our fight against the virus by ensuring everyone gets vaccinated and does not become careless as the world tries to resume normalcy. Moreover, vaccines such as Covishield and Sputnik V are fit for Indian terrain since they can be stored between +2 degrees and +8 degrees in contrast with the mRNA vaccines which require an extreme temperature regimen of -70°-20°C for storage.

Interestingly, Sputnik V vaccine has already been approved by several countries across North and South America, the Middle East, Europe, Asia and Africa, the recent ones being Mexico and Egypt. With this, it is now approved for use in more than 35 countries making it one of the world's top three coronavirus vaccines in terms of the number of approvals issued by the regulatory authorities.

Here, it is important to note that India is likely to allow the export of domestically produced doses of Russia's Sputnik Light COVID-19 vaccine this month, as stocks are available. There's pressure on the government to export.

In the fight against a virus that brought the world to a standstill, it would be important to collectively find a conducive solution to reach the endpoint. India not only needs to continue the fight against the pandemic but also win it along with other countries of the world by adopting a pragmatic approach and think beyond nationalism.

Dr Gajendra Singh, Public Health Expert and Dr Anuja Gupta, Microbiologist