

A SHOT OF HOPE

Why single-dose Covishield may not be such a bad idea

Maximum Coverage With One Dose Could Help Slam The Brakes On Covid

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Last year, the UK's vaccine taskforce chief Kate Bingham listed 'single dose' among the top traits of an "ideal pandemic vaccine". In January, J&J's chief scientific officer Dr Paul Stoffels described their oneshot vaccine as "the pandemic vaccine" because you can vaccinate at twice the speed with it.

But when a few days ago reports said India might consider a one-shot strategy for Covishield, Twitter rolled its eyes. A day later, Niti Ayog member Dr VK Paul clarified: "There is absolutely no change in the schedule of Covishield doses; it will be two doses only."

Was it really a bizarre idea, or could a single-dose strategy for Covishield have its uses? **TOI** took the question to Professor Andrew J Pollard, director of the Oxford Vaccine Group and chief investigator of the 'Oxford' Covid vaccine's global clinical trials. The Oxford vaccine is called Covishield in India.

'Covishield was planned as one-shot vaccine'

One of the grounds for suggesting a one-shot strategy was that Covishield "started out as a single-dose vaccine."

Pollard confirmed this had indeed been the case. "Initially, the plan was to save lives by vaccinating people as quickly as possible with one dose. But the successful lockdown in the UK gave us time to look at the trial data, which included a subgroup who had two doses, and we realised that two doses were better than one in terms of the immune response."

Nonetheless, the trials also showed even one dose was highly effective, and now this has been confirmed through actual vaccination data available January onwards. It is clear that a single dose – the UK kept a 12-week gap for Covishield from the start – gives "a high level of protection as it almost completely prevented hospitalisation."

Are viral vector jabs special?

Another argument for the one-shot idea was that vaccines similar to Covishield – called 'viral vector' vaccines – work well with one dose. Both wellknown single-shot vaccines – J&J and Sputnik Light – are of the same type as Covishield. But Pollard says the mRNA vaccines being used in the UK

alongside Covishield have also kept people out of hospital in the 3-month interval after the first shot.

Effective, but for how long?

So, Covishield and similar vaccines give a high level of protection with one dose. But how long does it last? For example, a viral vector vaccine made by the Chinese firm CanSino was approved for single-shot use after trials showed it was 65.7% effective – almost the same as the J&J vaccine. But a recent report from Mexico, where 14% of vaccinations have been with this vaccine, says immunity from it “declines significantly after six months,” and booster shots should be given.

Similarly, Alexander Gintsburg, director of the Russian institute that made the Sputnik vaccine, said in January protection from the first dose of Sputnik V – which is the same as Sputnik Light – would last 3-4 months. However, J&J has never positioned its single dose as a half-measure.

Pollard says there isn't enough data to say for sure how long immunity from one dose lasts, as people in the UK get their second dose after 3 months. But Covishield trials clearly showed the protection remained strong for the first 3 months, and “that does not mean it plummets right after 3 months.”

What about WHO's 50% benchmark?

Last year, WHO said any vaccine that achieved 50% efficacy would be considered good. However, recent UK data shows a single dose of Covishield is only 33% effective against the 'Delta' variant (B.1.617.2) that's circulating in India. How worried should we be about it?

Pollard says it depends on the impact in terms of hospitalisations. If the dip in efficacy only leads to more symptomatic cases but keeps people out of hospital, it's not a problem. But if hospitalisations shoot up – not enough data on it so far as the UK now has very few cases – it's definitely a cause for concern. The UK data, however, does show high efficacy against even mild infection after the second dose.

When is one-shot enough?

In January, Sputnik Light was described as a “possible ‘temporary’ solution to help countries with high infection rates.” But the two-dose Sputnik V remained Russia's main vaccine. Even J&J, which started with a one-shot vaccine is now developing a two-dose version.

Pollard also says they recommend a two-dose regimen for Covishield, “but if supplies are tight, giving one dose to the maximum number of people for maximum benefit” might be a good idea. However, he cautions that this decision would have to be based on data and disease modelling in the affected country.

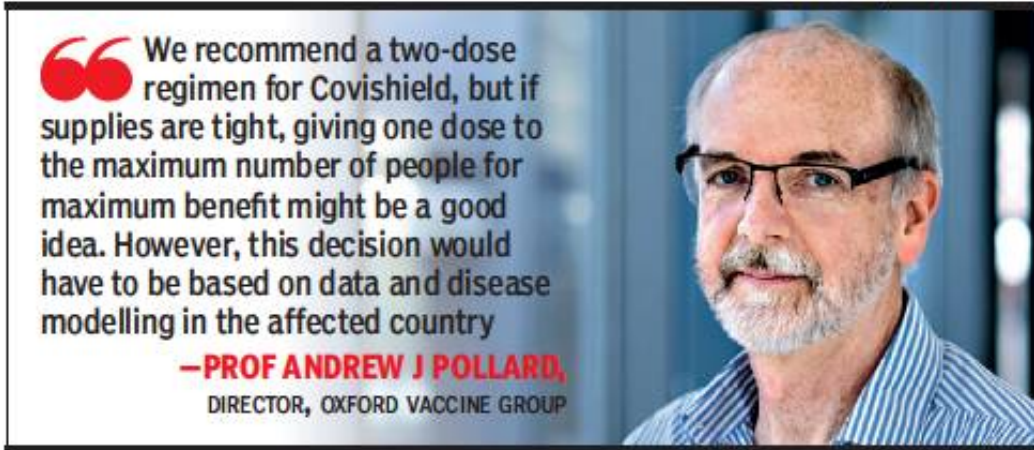
What about mutations?

Could vaccinating people with one dose instead of two help the virus overcome immunity from vaccines, like antibiotic misuse leads to resistance?

Pollard says there's no evidence for this. “Unvaccinated people are the greater risk. So, even if you

vaccinate with one dose, it cuts the risk of transmission, therefore mutation.”

John Cairns/Oxford University



TOI has put together a panel of experts to answer questions about Covid-19 and vaccination. Scan the QR code or visit bit.ly/3gKqS6h to ask your question