

OWN DATA NEEDED

MIXING JABS COULD WORK BUT BEWARE OF PITFALLS, SAY EXPERTS

Large, long-term study on effectiveness of 2-dose regimen of different vaccines needed, says epidemiologist

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GETTING a two-dose regimen of different Covid-19 vaccines is a safe and reasonable move which might trigger stronger, more robust immune responses against the virus and its newer variants than two doses of a single vaccine.

Experts said while this mix-and-match approach — called a heterologous prime-boost — could benefit countries like Malaysia whose vaccine supplies fluctuate, it does have disadvantages.

They also questioned the authorities' next move should people need a third dose, or a booster shot, to prolong immunity or protect against emerging variants, and called on the government to establish a Voluntary Covid-19 Vaccination Registry to enable further study.

Professor Datuk Dr Awang Bulgiba Awang Mahmud, who is the Science, Technology and Innovation Ministry's Covid-19 Epidemiological Analysis and Strategies Task Force chairman, said the approach might better protect people as Covid-19 vaccines were trialled at different times against different variants.

Therefore, he said one vaccine might prove better against a variant compared with another depending on the prevailing variant at the time of the trial.

"So, the heterologous prime-boost might work against a wider spectrum of variants," he told the *New Straits Times*.

Science, Technology and Innovation Minister Khairy Jamaluddin had on Wednesday said Malaysia was closely monitoring mixing vaccines, with AstraZeneca as the first dose followed by Pfizer-BioNTech, to boost vaccine efficacy and tackle supply constraints.

Dr Awang Bulgiba, who is an epidemiologist, said there had been academic discussions on whether the approach might be required for the long-term due to reasons such as some vaccines might not be effective enough to substantially reduce transmission or serious disease rates.

He said there could also be an insufficient degree of herd immunity due to some people being hesitant to be inoculated because of adverse publicity of some vaccines.

"Some vaccines may not be effective enough against newer variants (Beta, Epsilon, Delta or Alpha), while some may be unsuitable for certain people due to severe side effects.

"Vector immunity may develop in viral vector-based vaccines, thereby rendering the vectors ineffective in delivering the spike protein code into human cells."

He said the authorities would need to factor in logistic issues,



A nurse drawing the vaccine made by Sinovac into a syringe at the Mines International Exhibition and Convention Centre yesterday. PIC BY FARIZ ISWADI ISMAIL

such as if all types or only some types of vaccines would be used for this approach.

"Who will require the heterologous prime-boost approach? How should it be carried out? The number of doses of those vaccines and how to compute their dosing schedules?"

"We will also need to research the possibility of people (who were administered two different vaccines) requiring a third dose or booster shots."

Dr Awang Bulgiba, who is also head of the Independent Covid-19 Vaccination Advisory Committee, said the portfolio of vaccines in the National Covid-19 Immunisation Programme (NIP) was quite diverse, but there was only a limited number of categories of vaccines, hence the need to study which vaccines could be used in this approach.

"Currently, we do not have too many choices of vaccines so the heterologous prime-boost approach may not be too difficult, but this may change in the future.

"We need a registry with 50,000 vaccine recipients recruited as volunteers and followed up for two years to evaluate how long the immunity from different vaccines last. Rare side effects can also be monitored.

"We can also study whether mixing vaccines results in a better immune response (both humoral and cell immunity) and determine who would be more likely to benefit from such a heterologous prime-boost approach.

"Yet, we are making decisions without our own data."

Dr Awang Bulgiba also cautioned of possible disadvantages in the heterologous prime-boost approach.

Different vaccines, he said, worked against different parts of the virus so the "prime" first dose might not target the same part of

the spike protein as the "boost" second dose from a different vaccine, which might result in sub-optimal immunity.

"NIP will need to continue for some time with the attendant logistic issues. We are stepping into unknown territory here as we will be unsure whether there will be interaction between the older and newer vaccines.

"This could also give rise to more ammunition for antivaxxers, as it will indicate that the vaccination programme was not properly thought through."

Associate Professor Dr Malina Osman, an epidemiologist and biostatistician from Universiti Putra Malaysia, said the mix-and-match approach was a positive step to overcome possible shortages of certain vaccines and an appropriate strategy to increase the country's vaccination rate.

"It is a very practical and commendable step, particularly when vaccine shortage becomes an issue. Detailed study on this approach is ongoing.

"Latest published evidence has documented preliminary findings that the mixed vaccine provides much higher levels of antibody production.

"Hence, it could better protect us against the newer and more transmissible variants."

Canada recently updated its guidance to say that people who received the AstraZeneca vaccine as their first dose can either receive the same vaccine as their second dose or get a follow-up shot of Pfizer or Moderna.

Other countries, including France, Finland, China and Bahrain have also outlined possible scenarios for combining different vaccines.

The US Centers for Disease Control and Prevention has interim guidance saying this was acceptable in "exceptional situations", such as if the same vaccine was not available.



A man reciting a prayer before getting his jab at the Bukit Jawi Golf Resort in Nibong Tebal, Penang, yesterday. PIC BY DANIAL SAAD