Effectiveness of ChAdOx1 nCoV-19 (COVISHIELD) vaccine against the delta variant of SARS-CoV-2 in India

SARS-CoV-2 has affected more than 200 million people causing more than 5 million deaths worldwide as per the WHO statistics. The rise in mutant variants of SARS-CoV-2 virus has led to concerns regarding vaccine effectiveness. Delta (B.1.617.2) variant is the predominant strain in India. The vaccination programme in India is driven largely by the Covishield vaccine (ChAdOx1 nCoV-19).

A multi-institutional team of Indian researchers led by Translational Health Science and Technology Institute (THSTI) evaluated the real-world vaccine effectiveness of Covishield during the SARS-CoV-2 infection surge between April and May, 2021, in India. They also assessed neutralising activity and cellular immune responses against the Variants in healthy vaccinated persons to understand the mechanisms of protection.

In the study published in journal “The Lancet Infectious Diseases” which included comparison between 2379 cases of confirmed SARS-CoV-2 infection and 1981 controls, the vaccine effectiveness against SARS-CoV-2 infection in fully vaccinated individuals was found to be 63%. The vaccine effectiveness of complete vaccination against moderate-to-severe disease was much higher at 81%. More importantly, the scientists also observed that the Spike-specific T-cell responses were conserved against both the delta variant and wild-type SARS-CoV-2. Such cellular immune protection might compensate for waning humoral immunity against the virus variants and prevent moderate-to-severe disease and need for hospitalisation. This study provides the comprehensive data on the real-world vaccine effectiveness and immunological response to vaccination which should help guide policy.

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