Comment on this paper

Waning of BNT162b2 vaccine protection against SARS-CoV-2 infection in Qatar

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ABSTRACT

BACKGROUND Waning of vaccine protection against SARS-CoV-2 infection or COVID-19 disease is a concern. This study investigated persistence of BNT162b2 (Pfizer-BioNTech) vaccine effectiveness against infection and disease in Qatar, where the Beta and Delta variants have dominated incidence and PCR testing is done at a mass scale.

METHODS A matched test-negative, case-control study design was used to estimate vaccine effectiveness against SARS-CoV-2 infection and against any severe, critical, or fatal COVID-19 disease, between January 1, 2021 to August 15, 2021.

RESULTS Estimated BNT162b2 effectiveness against any infection, asymptomatic or symptomatic, was negligible for the first two weeks after the first dose, increased to 36.5% (95% CI: 33.1-39.8) in the third week after the first dose, and reached its peak at 72.1% (95% CI: 70.9-73.2) in the first five weeks after the second dose. Effectiveness declined gradually thereafter, with the decline accelerating ≥15 weeks after the second dose, reaching diminished levels of protection by the 20th week. Effectiveness against symptomatic infection was higher than against asymptomatic infection, but still waned in the same fashion. Effectiveness against any severe, critical, or fatal disease increased rapidly to 67.7% (95% CI: 59.1-74.7) by the third week after the first dose, and reached 95.4% (95% CI: 93.4-96.9) in the first five weeks after the second dose, where it persisted at about this level for six months.

CONCLUSIONS BNT162b2-induced protection against infection appears to wane rapidly after its peak right after the second dose, but it persists at a robust level against hospitalization and death for at least six months following the second dose.

Competing Interest Statement

The authors have declared no competing interest.

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Author Declarations

I confirm all relevant ethical guidelines have been followed, and any necessary IRB and/or ethics committee approvals have been obtained.

Yes

The details of the IRB/oversight body that provided approval or exemption for the research described are given below:

The study was approved by the Hamad Medical Corporation and Weill Cornell Medicine-Qatar Institutional Review Boards with waiver of informed consent.

All necessary patient/participant consent has been obtained and the appropriate institutional forms have been archived.

Yes

I understand that all clinical trials and any other prospective interventional studies must be registered with an ICMJE-approved registry, such as ClinicalTrials.gov. I confirm that any such study reported in the manuscript has been registered and the trial registration ID is provided (note: if posting a prospective study registered retrospectively, please provide a statement in the trial ID field explaining why the study was not registered in advance).

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