

HOME | ABOUT | SUBMIT | NEWS & NOTES | ALERTS / RSS Search

Comment on this paper

Q Advanced Search

Waning of BNT I 62b2 vaccine protection against

SARS-CoV-2 infection in **Qatar**

De Hiam Chemaitelly, Patrick Tang, Mohammad R. Hasan, Sawsan AlMukdad, Hadi M. Yassine, Description Fatiha M. Benslimane, Hebah A. Al Khatib, Deter Coyle, Deter Coyle, Deter Louisein H. Ayoub, Deter Louisein H

Einas Al Kuwari, D Andrew Jeremijenko, D Anvar Hassan Kaleeckal, Ali Nizar Latif, D Riyazuddin Mohammad Shaik, Hanan F. Abdul Rahim, Gheyath K. Nasrallah, D Mohamed Ghaith Al Kuwari, Hamad Eid Al Romaihi, Adeel A. Butt, D Mohamed H. Al-Thani,

Abdullatif Al Khal, D Roberto Bertollini, Laith J. Abu-Raddad **doi:** https://doi.org/10.1101/2021.08.25.21262584 This article is a preprint and has not been peer-reviewed [what does this mean?].

used to guide clinical practice. Preview PDF Full Text Info/History Metrics **Abstract**

It reports new medical research that has yet to be evaluated and so should not be

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.

Funding Statement

The authors are grateful for institutional salary support from the Biomedical Research Program and the Biostatistics, Epidemiology, and Biomathematics Research Core, both at Weill Cornell Medicine-Qatar, as well as for institutional salary support provided by the Ministry of Public Health and Hamad Medical Corporation. The authors are also grateful for the Qatar Genome Programme for institutional support for the reagents needed for the viral genome sequencing. The funders of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the article. Statements made herein are solely the responsibility of the authors.

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).

Yes

I have followed all appropriate research reporting guidelines and uploaded the relevant EQUATOR Network research reporting checklist(s) and other pertinent material as supplementary files, if applicable.

Yes

Paper in collection COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Copyright The copyright holder for this preprint is the author/funder, who has granted medRxiv a license to display the preprint in perpetuity. All rights reserved. No reuse allowed without permission.

Blog posts linking to this article:

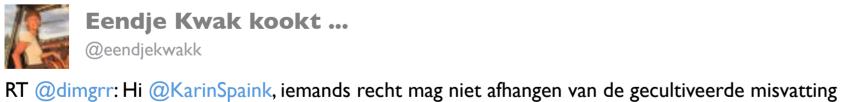
SPECIALTIES, 02 Sep 2021

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

Absolutely Maybe, 31 Aug 2021 I sure don't envy the people under all that pressure at the U.S. Food and Drug Administration. They've been at

the brunt of an...

Tweets referencing this article:



Eendje Kwak kookt ... @eendjekwakk

dat een prikje anderen beschermt. I) Cryptisch...

04:32PM



Robert Everts @robert_everts

Het correspondeert aardig met andere gegevens uit de praktijk. https://t.co/9a9QF5hClb

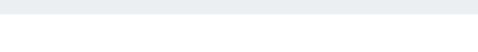
04:30PM

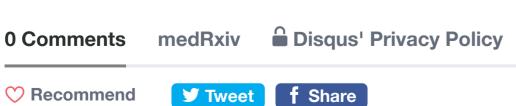
Robert Everts

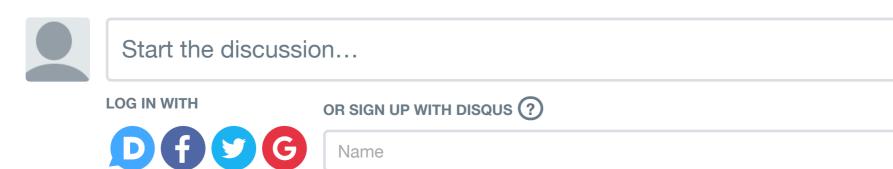
Comments are moderated for offensive or irrelevant content (can take ~24 hours). Duplicated submission is unnecessary.

medRxiv Comment Policy

Please read our Comment Policy before commenting.







Be the first to comment.

Subscribe Add Disqus to your site

▲ Do Not Sell My Data

We use cookies on this site to enhance your user experience. By clicking any link on this page you are giving your consent for us to set cookies.

DISQUS

■ Login ■

Sort by Newest ▼

Previous Next 🗪 Posted August 27, 2021. **E**mail Download PDF Share ✓ Author Declarations Citation Tools ■ Data/Code XML

COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Like 414

Subject Area

Tweet

Epidemiology

Subject Areas

All Articles

Addiction Medicine

Allergy and Immunology

Anesthesia

Cardiovascular Medicine

Dentistry and Oral Medicine

Dermatology

Emergency Medicine

Endocrinology (including Diabetes Mellitus and Metabolic

Epidemiology

Gastroenterology

Genetic and Genomic Medicine

Geriatric Medicine

Health Policy

HIV/AIDS

Infectious Diseases (except HIV/AIDS)

Medical Ethics

Nursing

Nutrition

Oncology

Orthopedics

Otolaryngology

Pain Medicine

Pediatrics

Psychiatry and Clinical Psychology Public and Global Health

Rehabilitation Medicine and Physical Therapy

Respiratory Medicine Rheumatology

Sports Medicine

Surgery Toxicology

Urology

Chan Supported by Zuckerberg Initiative 9

Disease)

Forensic Medicine

Health Economics Health Informatics

Health Systems and Quality Improvement Hematology

Intensive Care and Critical Care Medicine Medical Education

Nephrology Neurology

Obstetrics and Gynecology Occupational and Environmental Health

Ophthalmology

Palliative Medicine Pathology

Pharmacology and Therapeutics Primary Care Research

Radiology and Imaging

Sexual and Reproductive Health

Transplantation