IPCRG practice driven answers on COVID-19 and respiratory questions

How long will the COVID-19 vaccines provide protection from severe disease?

What the research says

The best protection against COVID-19 illness is vaccination with one of the currently approved vaccines including the currently recommended single dose after previous documented COVID-19 illness. Protection against symptomatic COVID-19 illness from current SARS-CoV-2 vaccines appears to begin to wane after about 4–6 months (JCVI 2021; PHE 2021). This is consistent with previous reports of waning of efficacy of mRNA vaccines against influenza virus (Connors et al 2021).

Importantly, however, protection against severe COVID-19 illness appears to remain high to at least 6 month after vaccination, emphasising the value and benefits to individuals of SARS-CoV-2 vaccination. In Israel ~80.5% of the population have received a vaccination as of September 14 2021, daily infections are at their peak with 10,773 new infections reflecting reduced vaccine efficacy against the predominant Delta variant. Despite this, severe COVID-19 and deaths due to COVID-19 remain low among vaccinated individuals (See: https://www.thehindu.com/data/data-israels-recent-covid-19-spike-explained/article36402195.ece).

A study conducted in the UK among almost 7 million adults vaccinated against COVID-19 found that an incidence of COVID-19-related death of ~0.002% (Hippisley-Cox et al 2021). Risk factors for COVID-19-related death or hospitalisation included Down's syndrome, kidney transplantation, sickle cell disease, care home residency, chemotherapy, HIV/AIDS, liver cirrhosis, neurological conditions, recent bone marrow transplantation or a solid organ transplantation, dementia and Parkinson's disease (Hippisley-Cox et al 2021).

Data collected in the UK by the University of Oxford and the Office for National Statistics indicates a marked waning of efficacy 4 months after the second dose of the Pfizer/BioNTech vaccine and a small but steady decrease for the Oxford/AstraZeneca vaccine for protection against symptomatic illness. However, the efficacy against symptomatic infection with the Delta variant for both the Pfizer/BioNTech and Oxford/AstraZeneca vaccine remained above 50%. Longer term data will be needed to determine to what extent and within what timeframe waning vaccine efficacy might translate into a resurgence of severe COVID-19 disease

What this means for your clinical practice

- SARS-CoV-2 vaccine booster programs should be considered according to National guidelines and will differ for those who are at low risk for severe disease vs those at high risk including those over 70 years of age, adults (>16 years) who undergoing certain cancer treatments or are immunocompromised, those with a severe lung disease or serious heart condition
- Booster programs should ideally aim to deliver booster vaccination at or near 6 months after initial vaccination

For additional guidance on the benefits of doses of the SARS-CoV-2 vaccine beyond the initial vaccination course refer to *What are the benefits of doses of the SARS-CoV-2 vaccines beyond the initial vaccination course?*

Useful links and supporting references

Connors M, et al. SARS-CoV-2 vaccines : Much accomplished, much to learn. Ann Intern Med 2021:M21-0111. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7839932/. Accessed September 2021.

Hippisley-Cox J, et al. Risk prediction of COVID-19 related death and hospital admission in adults after COVID-19 vaccination: national prospective cohort study. BMJ 2021;374:n2244. Available at: https://www.bmj.com/content/374/bmj.n2244. Accessed October 2021.

JCVI interim advice: potential COVID-19 booster vaccine programme winter 2021 to 2022. Available at: https://www.gov.uk/government/publications/jcvi-interim-advice-on-a-potential-coronavirus-covid-19-booster-vaccine-programme-for-winter-2021-to-2022/jcvi-interim-advice-potential-covid-19-booster-vaccine-programme-winter-2021-to-2022#fn:6. Accessed September 2021.

Naabers P, et al. Dynamics of antibody response to BNT162b2 vaccine after six months: a longitudinal prospective study, Lancet 2021. Available at: https://www.thelancet.com/journals/lanepe/article/PIIS2666-7762(21)00185-X/fulltext. Accessed September 2021.

Public Health England. COVID-19 vaccine surveillance report. Week 37. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1018416/Vaccine_surveillance_report_-_week_37_v2.pdf. Accessed September 2021.

Authors

Dr Alan Kaplan (Chair Family Physician Airways Group of Canada) for and on behalf of the IPCRG practice driven answers review group.

Last reviewed: 6 October 2021