NVX-CoV2373, a protein-based vaccine against SARS-CoV-2 infection

Sabina Vohra-Miller MSc, Ilan S. Schwartz MD PhD

Cite as: CMAJ 2022 September 12;194:E1214. doi: 10.1503/cmaj.220688

1 NVX-CoV2373 (marketed as Nuvaxovid) is a protein-based vaccine against SARS-CoV-2, approved in Canada for adults unable or unwilling to receive an mRNA vaccine

Protein-based vaccines have a long history of use that may make them more acceptable to patients who are hesitant to receive mRNA vaccination.1 NVX-CoV2373 consists of a recombinant spike protein subunit plus adjuvant. It may also be considered for people who are allergic to components of mRNA vaccines (e.g., polyethylene glycol).2

2 NVX-CoV2373 can be used in a primary series of vaccination

NVX-CoV2373 can be administered in a 2-dose primary series or as a heterologous primary series with another approved vaccine against SARS-CoV-2. Doses should be separated by 8 weeks to maximize immune response.2

3 NVX-CoV2373 may be offered as a booster

Although not approved by Health Canada for this indication, the National Advisory Committee on Immunizations recommends NVX-CoV2373 as a booster 6 months after any primary series.2

4 NVX-CoV2373 is efficacious

Clinical trials (conducted when Alpha and Beta variants predominated) that included more than 49,000 participants found that 2 doses of NVX-CoV2373 were about 90% effective at preventing infection with SARS-CoV-2 and more than 86% effective at preventing moderate or severe COVID-19.3,4 Although studies evaluating its efficacy against Omicron are ongoing, 1 study reported that 3 doses of NVX-CoV2373 induced neutralizing antibody titres against Omicron BA.1 and BA.4, similar to 3 doses of mRNA vaccine.5 Boosting with NVX-CoV2373 resulted in lower antibody titres than boosting with an mRNA vaccine.2

5 NVX-CoV2373 is safe

Adverse events in clinical trials of NVX-CoV2373 were similar to those for mRNA vaccines, including localized pain, fatigue, headache and muscle aches.3,4 These were more common after the second dose and resolved within 1–2 days. Severe adverse events were similar in frequency to placebo (about 1%). No severe immediate allergic reactions or vaccine-induced immune thrombotic thrombocytopenia have been reported. Myocarditis and pericarditis have occurred in rare instances, but it is currently uncertain whether NVX-CoV2373 was the cause.2

References


Competing interests: Sabina Vohra-Miller is the founder of Unambiguous Science (a not-for-profit science education platform) and cofounder of the South Asian Health Network (a not-for-profit education and advocacy group). No other competing interests were declared.

This article has been peer reviewed.

Affiliations: Division of Clinical Public Health (Vohra-Miller), Dalla Lana School of Public Health, University of Toronto, Toronto, Ont.; Division of Infectious Diseases (Schwartz), Department of Medicine, Duke University, Durham, NC.

Content licence: This is an Open Access article distributed in accordance with the terms of the Creative Commons Attribution (CC BY-NC-ND 4.0) licence, which permits use, distribution and reproduction in any medium, provided that the original publication is properly cited, the use is noncommercial (i.e., research or educational use), and no modifications or adaptations are made. See: https://creativecommons.org/licenses/by-nc-nd/4.0/

Correspondence to: Ilan Schwartz, ilan@ualberta.ca