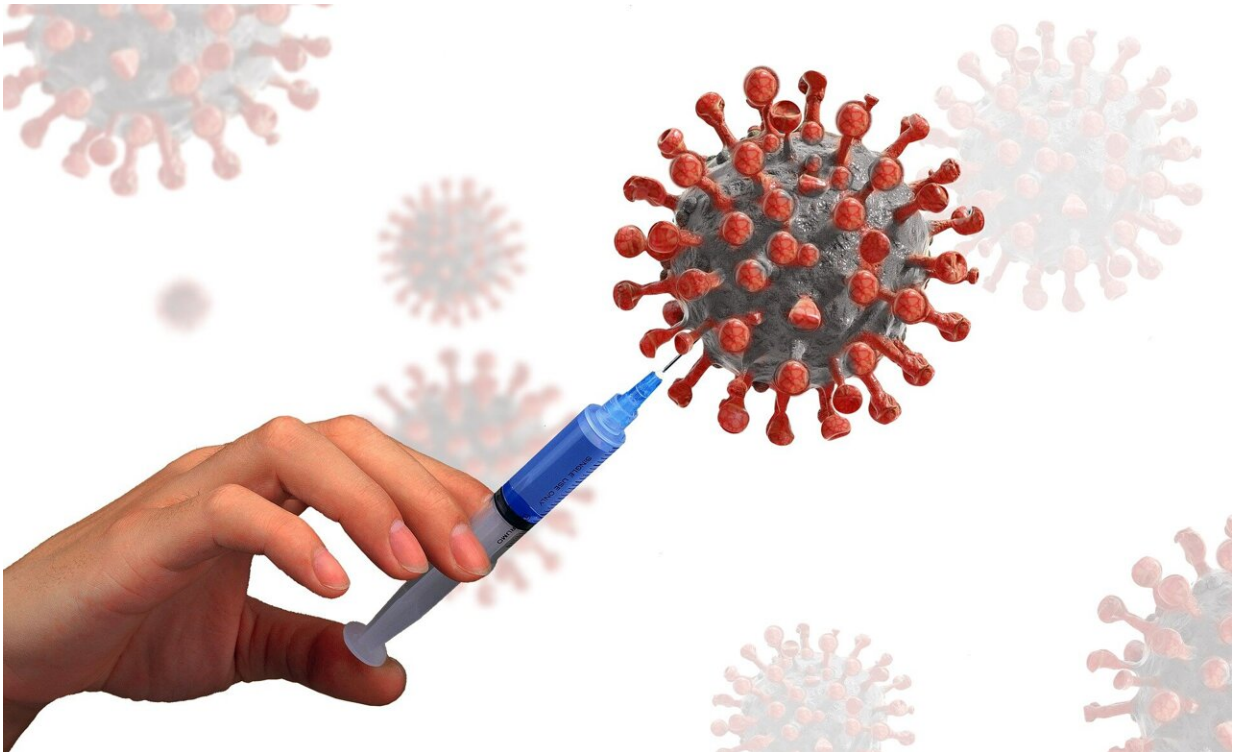


Big data study refutes anti-vax blood clot claims about COVID-19 vaccines

April 14 2023, by Ellen Goldbaum



Credit: Pixabay/CC0 Public Domain

A study led by University at Buffalo researchers has confirmed that contrary to claims by anti-vaccine proponents, COVID-19 vaccines pose only trivial risk of venous thromboembolism (VTE), or blood clots. In addition, the study found that becoming infected with COVID-19 poses a significant risk of blood clots.

The paper was published online Feb. 1 in the *Journal of Clinical and Translational Science*.

"This population-based study found only a trivial risk for VTE following COVID-19 vaccination," said Peter L. Elkin, MD, first author on the paper and UB Distinguished Professor and chair of the Department of Biomedical Informatics in the Jacobs School of Medicine and Biomedical Sciences at UB.

"Given the large risk of VTE from COVID-19 infection, the risk-benefit ratio strongly favored vaccination," said Elkin, also a physician with UBMD Internal Medicine.

The study was launched in order to investigate whether or not receiving a COVID-19 vaccine put one at higher risk for developing VTE, a claim that had circulated widely on social media and in mainstream media.

'We wanted to know the truth'

"There was concern by some that COVID-19 vaccination might cause undue harm and VTE was one of the mechanisms implicated by anti-vaxxers," Elkin said. "We wanted to know the truth."

The study period ran from Jan. 1, 2020 (just prior to the detection in the U.S. of COVID-19) until March 6, 2022, and was based on data from veterans aged 45 years and older from the Department of Veterans Affairs National Surveillance Tool. The data included 855,686 people who had received at least one dose of a SARS-CoV-2 vaccine and an unvaccinated control group of 321,676 people.

To clearly identify whether the vaccines might impact risk for VTE, the researchers accounted for many factors that are predictors for VTE, including age, race, sex, body mass index and others.

The study found that vaccinated individuals had a VTE rate of 1.3755 per 1,000 people, which is 0.1% over the baseline VTE rate of 1.3741 per 1,000 in unvaccinated people.

1.4 more cases per million patients

"The excess risk was about 1.4 cases per million patients vaccinated," said Elkin. "Given the fact that the rate of VTE with COVID-19 is several orders of magnitude greater than the trivial risk from vaccination, our study reinforces the safety and importance of staying current with COVID 19 vaccinations."

He said it has been reported in other studies that the very slight increased risk for VTE in a few vaccinated patients may be attributed to a phenomenon called Vaccine Induced Immune Thrombotic Thrombocytopenia (VITT). VITT is an [immune response](#) that results in fewer platelets that are also malformed and stickier, which can lead to VTE.

Elkin noted that the study is an example of how translational science can be applied to the most important scientific questions that face society today, in this case by demonstrating the safety of COVID-19 vaccines.

"This study shows the power of big data where we can use electronic health record data in a rigorous way to answer questions that could never be properly answered with a [randomized controlled trial](#) due to the small effect size and the need to recruit millions of patients to the trial," he said.

"It's an example of how [biomedical informatics](#) is answering important clinical questions that can help people to recognize the benefit of COVID-19 vaccination and improve adherence to this approved clinical guideline," said Elkin.

More information: Peter L. Elkin et al, COVID-19 vaccination and venous thromboembolism risk in older veterans, *Journal of Clinical and Translational Science* (2023). [DOI: 10.1017/cts.2022.527](https://doi.org/10.1017/cts.2022.527)

Provided by University at Buffalo

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