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## **BRIEF19**

*A daily review of covid-19 research and policy*

### **RESEARCH BRIEFING**

#### **AstraZeneca covid-19 vaccine may, or may not, be associated with blood clot formation.**

While the Oxford/AstraZeneca vaccine has been in use in many countries around the world, recent fears surrounding a potentially related blood disorder have led to concern regarding the shot, which has resulted in a number of countries to temporarily suspend its use. Last week, the “Ontario Covid-19 Science Advisory Table” released [information](#) documenting our current understanding of the disorder, dubbed (perhaps prematurely) as “vaccine-induced prothrombotic immune thrombocytopenia,” or VIPIT. (Note: prothrombotic means “encouraging of thick or clotted blood thrombocytopenia is the medical term for a low number of platelets, the type of blood cell involved in clotting. Importantly, these results have not yet been peer-reviewed.

The purported documented cases of VIPIT came from individuals who received the vaccine across various countries in Europe. As reported, the condition affected primarily women under 55 years old, but no clear predisposing risk factors were identified, including prior history of bleeding disorders. Furthermore, even if the condition truly is vaccine “induced” (rather than coincident, which at these numbers is hard to prove), the researchers estimate that the incidence of VIPIT would fall somewhere between 1 in 125,000 to 1 in 1 million vaccinated persons.

Let’s unpack the two primary clinically relevant components of VIPIT. The first aspect is a disease known as cerebral sinus venous thrombosis (CSVT), which refers to blood clots forming in the veins surrounding the brain. Unlike strokes, which affect the arteries of the brain, [CSVT](#) is caused by blood clots in the veins. CVST is a rare disorder that primarily affects women under the age of 50. It is more often found in those who are already at high risk for blood clots due to underlying conditions, medications, or pregnancy. Its initial symptoms typically include a severe headache, sometimes with neurologic deficits, like weakness. It is [rare](#), found in at most two people per 100,000 per year. And interestingly, of the 20 million people who have received the Oxford/AstraZeneca vaccine, only 18 cases have been identified. As mentioned above, this is actually a smaller percentage than the “background rate” expected in the general population. This calls into question whether the vaccine is causing these events or whether it is merely an innocent bystander.

Thrombocytopenia, on the other hand, is significantly more common, and has numerous causes. The particular type found amongst those who received the vaccine is similar in nature to a disease called [heparin-induced thrombocytopenia](#) (HIT), which is an uncommon and paradoxical disorder that occurs after patients receive the blood thinning medication, heparin. Similar to the physiology in HIT, those who develop VIPIT are described as having developed antibodies that attack and destroy the body’s own platelets, ultimately resulting in blood clotting (again, a paradox, as blood thinning and clotting are generally thought to be on opposite sides of the blood thickness spectrum). Once again, however, the rate of VIPIT does not seem to be any greater than the rate of a number of other forms of thrombocytopenia that would be expected among the same number of people who did not receive the Oxford/AstraZeneca vaccine.

Ultimately, although VIPIT sounds frightening, there is simply not enough evidence to suggest a true causal relationship with the Oxford/AstraZeneca vaccine, nor even data to show that it is happening more frequently than would be expected amongst the general population. Before we truly think about shelving this particular vaccine, which has some significant storage and cost advantages, much more data should be required.

—Joshua Niforatos, MD, MTS

## **POLICY BRIEFING**

### **You've been vaccinated. Do you need a vaccine passport?**

The global coronavirus vaccination campaign is in full swing, with the United States having [reached](#) 100 million vaccines ahead of schedule. The Biden administration has since doubled its target, with the goal of reaching herd immunity and a return to “normal.” But until that invisible line is crossed, the question remains, what does being vaccinated mean?

There's no solid answer on that yet. But around the world, different solutions are being piloted. In the European Union, there is an effort to [create](#) a digital passport that would allow travel with fewer restrictions, similar to those launched in [China](#) and [Saudi Arabia](#). In the United States, New York has [launched](#) an app-based pilot program to validate identity and vaccination status to access businesses and venues. The federal government is investigating the [feasibility](#) of a national registry for similar purposes as part of President Biden's coronavirus strategy. However, the use of any such passport needs to be considered carefully; in the United Kingdom there are [concerns](#) that negative incentivization could lead to further social division and exacerbation of societal divide. There is also the concern that passports could be forged.

While the ultimate utility of the vaccine verification remains nebulous, the US Centers for Disease Control and Prevention strongly [recommends](#) that individuals keep their vaccine verification cards and take steps, like making multiple copies, and keeping a digital record to prevent the loss of their proof of vaccination. To support this effort, both Staples and Home Depot are [offering](#) to laminate the now iconic cards for free, adding to the wave of businesses incentivizing vaccinations. *Various.*

—*Brief19 Policy Team*

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