

AstraZeneca's Covishield and Thrombocytopenia Syndrome (TTS)

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- What is Covishield?
- What is Thrombosis with Thrombocytopenia Syndrome (TTS)?
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Why in News?

AstraZeneca, the company that makes the Covishield vaccine for Covid-19 pandemic, has admitted the inoculation has potential side effects.

The company's admission, presented in a legal document before the High Court of Justice in London, conveys that the Covid vaccine can in extremely rare cases induce Thrombosis with Thrombocytopenia Syndrome (TTS).

What is Covishield?

- **About**

- In 2020, amid the Covid-19 outbreak, the United Kingdom (UK) pharmaceutical firm collaborated with the University of Oxford to develop the **AZD1222 vaccine**.
- In India, the vaccine produced by AstraZeneca was marketed under the brand name Covishield, manufactured by the Serum Institute of India (SII) in Pune.

- **Covishield in India**

- The Indian govt had issued a fact sheet in January 2021, in which it specifically said that Covishield should be given with caution to individuals with thrombocytopenia, that is, a condition of low platelet counts.
- India started administering the vaccines on January 16, 2021.
- Considering the total number of doses that had been administered since then, the number of potential thromboembolic events worked out to 0.61 cases per million doses.
- The Union Health Ministry said that Covishield continues to have a definite positive benefit-risk profile with tremendous potential to prevent infections and reduce deaths due to Covid-19.

- **AstraZeneca vaccine in other countries**

- In March 2021, many European countries such as France, Germany, Italy, Netherlands, etc. temporarily paused the use of the AstraZeneca vaccine after a few cases of blood clotting were reported.

- **Observations made by WHO**

- Later in April 2021, the World Health Organisation (**WHO**) said TTS was being reported in some cases after vaccinations with Covishield.
- However, the WHO had added, based on latest available data, the risk of TTS with Covishield vaccines appears to be very low.

What is Thrombosis with Thrombocytopenia Syndrome (TTS)?

- **About**

- TTS is a rare condition characterized by the formation of blood clots (thrombosis) in blood vessels and a low number of blood platelets (thrombocytopenia).
- It has been observed as an extremely rare adverse effect associated with certain COVID-19 vaccines, notably those that use adenovirus vectors, like the Covishield.
 - Adenovirus vectors are non-enveloped, double-stranded **DNA viruses** that are commonly used for gene therapy, vaccination, and cancer gene therapy.
 - They are considered the most efficient gene delivery vehicles due to their safety profile and expression.

- **Mechanism**

- The exact mechanism by which TTS occurs following vaccination with Covishield is not fully understood.
- However, it is hypothesised that the vaccine may trigger an immune response that leads to platelet activation and the formation of blood clots.
 - This is similar to autoimmune heparin-induced thrombocytopenia.

- Heparin is a well-known and commonly used anticoagulant which has antithrombotic properties.

- **Symptoms of TTS**

- A range of symptoms are associated with TTS, including breathlessness, pain in the chest or limbs, pinhead-size red spots or bruising of the skin in an area beyond the injection site, headaches, numbness in body parts, etc.
- TTS could mean a restriction in the flow of blood due to clotting.
- Complications depend on where the thrombosis is located. The most serious problems include stroke, heart attack, and serious breathing problems.

- **Who are at risk?**

- Certain factors might predispose individuals to this condition, such as age, gender (more common in younger women), and possibly genetic factors.

What exactly has AstraZeneca said?

- AstraZeneca spoke about TTS in court documents following a suit brought against the company in the United Kingdom.
 - The pharmaceutical giant is being sued over health claims related to the vaccine that it developed in collaboration with the University of Oxford amid the Covid-19 pandemic in 2020.
 - In court documents, AstraZeneca denied that TTS is caused by the vaccine at a generic level.
 - However, it admitted to the possibility of TTS as a result of its vaccination in “very rare cases.”
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Q.1. What is Thrombosis?

Thrombosis is a serious condition that occurs when a blood clot, or thrombus, forms in a blood vessel or the heart, blocking blood flow. The clot can break loose and travel to other parts of the body, where it can cause life-threatening conditions if it gets stuck in a critical area.

Q.2. What is AstraZeneca?

AstraZeneca is a global biopharmaceutical company that focuses on science-led innovation to improve the impact of medicine on patients. The company’s vision is to transform healthcare by unlocking the power of science for people, society, and the planet.

Source: [Covishield could cause blood clots in very rare cases, manufacturer AstraZeneca has said. What does this mean? | Indian Express](#) | [Business Standard](#)

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