

Doctor, should I take anticoagulants to prevent blood clots while I am receiving chemotherapy?

In cancer patients receiving chemotherapy who also have additional risk factors for VTE, taking low-dose Eliquis® two times per day reduces the risk of having a PE or DVT but increases the risk of bleeding.

What's the evidence?

Understanding the problem

Patients with cancer are at high risk of developing a DVT or PE, especially when they are receiving chemotherapy. It is important to prevent blood clots because they can lead to serious complications, including death. Physicians use the Khorana score to estimate a cancer patient's risk of experiencing a blood clot when starting chemotherapy. The Khorana score looks at certain characteristics of the patient's blood test results (platelet count, hemoglobin, white blood cell count), body mass index (BMI) and the type of cancer to help the physician decide whether the patient has a low, intermediate or high risk for developing a blood clot. We know that about 1 in 10 cancer patients with an intermediate to high Khorana score will develop a blood clot during the first 6 months of chemotherapy treatment.

Eliquis® (apixaban) is an anticoagulant, which is taken by mouth two times per day. Low doses of anticoagulant can be used to reduce the risk of forming blood clots. The most important complication of taking an anticoagulant is bleeding. Just as there are risk factors for developing VTE, there are risk factors for developing bleeding while taking anticoagulants. For example, people who have a previous history of bleeding, certain types of cancer or kidney disease will have a higher risk of bleeding when taking anticoagulants than people who do not have these risk factors.

In this study, the researchers asked the question: "Can we reduce the risk of DVT or PE in cancer patients who are receiving chemotherapy and have additional risk factors for VTE by giving them low-dose Eliquis®?"

The study

Who? The study included 574 patients (mean age 60 years; 42% men) with a new diagnosis of cancer or progression of cancer, who needed to start chemotherapy and were at intermediate to high risk of developing a blood clot (using the Khorana score). Most patients in the study had a diagnosis of gynecological cancer, lymphoma (a type of blood cancer) or cancer of the pancreas.

What? The study compared Eliquis® to a placebo (a pill made to be identical to Eliquis® but without any active drug).

Low-dose Eliquis®	vs	Placebo
Apixban (Eliquis®) 2.5 mg by mouth, two times per day for 6 months.		Placebo: A pill containing an inactive substance that has no effect on the outcome but looks to be the same as apixaban. Sometimes, it is referred to as a “sugar pill.”

What the researchers found

In cancer patients who were receiving chemotherapy and had other risk factors for VTE, Eliquis® reduced the risk developing DVT or PE.

The risk of bleeding was higher in patients taking Eliquis®.

Note: not all cancer patients can safely take Eliquis® and cost of the drug may be a barrier for some patients

Summary of findings

Low-dose Eliquis® vs Placebo in patients who have cancer plus an intermediate to high risk of developing VTE and are starting chemotherapy.

Outcomes at 6 months	Rate of events with Eliquis®	Rate of events with Placebo	Results
Venous Thromboembolism	4 out of 100 people	10 out of 100 people	About 6 fewer people out of 100 had a VTE while taking Eliquis®
Major Bleeding	4 out of 100 people	2 out of 100 people	About 2 more people out of 100 had a major bleeding event while taking Eliquis®

Outcomes at 6 months	Rate of events with Eliquis®	Rate of events with Placebo	Results
Death from any cause	12 out of 100 people	10 out of 100 people	No effect*

*Although the rates for the 2 groups look slightly different, the differences were not statistically significant—this means that the difference could simply be due to chance rather than due to the different treatments.

This Evidence Summary is based on the following article:

Carrier M, Abou-Nassar K, Mallick R, et al. **Apixaban to Prevent Venous Thromboembolism in Patients with Cancer.** *N Engl J Med.* 2018 Dec 4. doi: 10.1056/NEJMoa1814468. PubMed (<https://www.ncbi.nlm.nih.gov/pubmed/30511879?dopt=Abstract>)

Published: Thursday, February 14, 2019

Glossary

anticoagulant	medications that prevent blood clots from forming or travelling (aka blood thinner)
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apixaban	Eliquis®; anticoagulant pill that does not require blood tests to monitor the effect
DVT	formation of a blood clot within a vein deep within the leg
Eliquis®	apixaban; anticoagulant pill that does not require blood tests to monitor the effect
major bleeding	serious bleeding (e.g. requiring a visit to the doctor or hospital, an invasive test to find the source of bleeding or a blood transfusion)
PE	blood clot(s) that cause obstruction of blood vessels within the lungs (pulmonary artery), after travelling from veins, most commonly within the leg or arm or pelvis
placebo	a harmless, inactive, and simulated treatment

risk factors	characteristics that increase the chance that a person will develop a disease or condition or experience a bad outcome
venous thromboembolism	the collective term referring to blood clots within the veins, most commonly deep vein thrombosis and pulmonary embolism
VTE	venous thromboembolisms; collective term referring to blood clots within the veins