Doctor, should I take anticoagulants to prevent blood clots after being discharged from a medical ward?

Taking low-dose Xarelto® for 45 days after discharge from hospital for a medical condition did not reduce the risk of developing VTE **compared with not taking an** anticoagulant **after discharge. These results do not apply to people who have recently had surgery or people who have active cancer.**

What's the evidence?

Understanding the problem

The risk of developing VTE after being admitted to a medical ward is low, about 2 out of 100 people. The increased risk of VTE is explained by several factors. Resting in bed slows blood flow in the veins, which increases the chance of forming a DVT. Also, inflammation due to the medical condition responsible for admission to hospital can injure the veins and trigger clotting. The more risk factors a patient has in addition to being sick in hospital (e.g., previous history of VTE, active cancer, older than 60 years of age), the higher the risk of VTE.

When the clotting process is triggered, a DVT may form days or even several weeks after discharge from hospital. Symptoms include pain or swelling of the leg or if the DVT travels to the lungs, chest pain, shortness of breath, or palpitations. Anticoagulants can be used to prevent formation of clots. However, the process of blood clotting is also needed to stop bleeding. For example, when you are cut or injured, clotting helps to stop bleeding. Bleeding can also occur without an obvious cause, like a nose bleed, and can be tougher to manage when taking anticoagulants. Therefore, anticoagulants are best used when a hospital patient has both a high risk for VTE and a low risk for bleeding.

The question asked by researchers in this study was “do people who are in hospital with a medical condition and have additional risk factors for developing VTE, but a low risk for bleeding, benefit from taking a low dose of an anticoagulant for 45 days after discharge?”

The study

Who? The study included 12,019 patients age 40 years or older (mean age 70 years; 52% men), who were hospitalized for at least 3 days with a medical condition and considered to be at high risk for VTE according to a risk score and a D-dimer blood test. The risk score gives points for age, type of medical condition and past medical history. The blood test looks for elevated D-dimers, a protein that is released when a blood clot breaks up.

What? The study compared patients who received low-dose Xarelto® with patients who received a placebo, which is a substance made to resemble drugs but does not contain an active drug.

Low-dose Xarelto®	vs	No anticoagulants
One pill of rivaroxaban (Xarelto®), 10 mg once a day, for 45 days after hospital discharge OR One pill of rivaroxaban, 7.5 mg once a day, in patients with kidney disease		One pill of a placebo once a day for 45 days after hospital discharge

What the researchers found

Patients who took low-dose Xarelto® after hospital discharge did not have a lower risk of DVT**,** PE**, or death than patients who did not take** anticoagulants **after hospital discharge.**

The risk of bleeding was low in both groups.

Summary of findings

Low-dose Xarelto® vs no anticoagulants after discharge in people hospitalized for a medical condition

Outcomes at 45 days	Rate of events with Xarelto®	Rate of events with No anticoagulants	Results
DVT, PE, or death	8 out of 1000 people	11 out of 1000 people	No effect*
Major Bleeding	3 out of 1000 people	2 out of 1000 people	No effect*

*Although the rates for the 2 groups look 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:

Spyropoulos AC, Ageno W, Albers GW, et al. ***Rivaroxaban for Thromboprophylaxis after Hospitalization for Medical Illness.*** *N Engl J Med. 2018 Aug 26. doi: 10.1056/NEJMoa1805090. PubMed (https://www.ncbi.nlm.nih.gov/pubmed/30145946?dopt=Abstract)*

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Glossary

anticoagulant	medications that prevent blood clots from forming or travelling (aka blood thinner)
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DVT	formation of a blood clot within a vein deep within the leg
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)
palpitations	sensation that your heart is beating rapidly or skipping beats
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
rivaroxaban	Xarelto® (aka DOAC)
VTE	venous thromboembolims; collective term referring to blood clots within the veins