

Weighing up blood-thinners: Is warfarin always the best choice?

October 17 2013

Patients who are responding below par to the anticoagulant drug warfarin have several options. They can undergo even more blood tests to monitor their response to the different dosages of this medication which is prescribed to prevent strokes, or they could start using one of the newer, yet more expensive, anticoagulants on the market. In the long run, says Joyce You of the Chinese University of Hong Kong in China, the latter option could actually be more cost-effective and improve a patient's quality of life. Her study¹ appears in the *Journal of General Internal Medicine*, published by Springer. It is the first of its kind to comprehensively consider all important factors to measure the relative value-for-money of various oral anticoagulants currently on offer to patients and doctors.

The effectiveness of [warfarin](#) is influenced by the intake of Vitamin K and the impact of other medication. Incorrect dosages can, for instance, lead to excessive bleeding. Therefore health professionals consistently need to do blood tests to monitor its effectiveness.

According to previous studies, new oral anticoagulants such as dabigatran, rivaroxaban and apixaban are as effective as warfarin in preventing strokes, and similarly all can cause bleeding in patients if not used correctly. Warfarin, which has been on the market for decades, is still the No. 1 anticoagulant used in the US and the UK, while the newer drugs are considered to be more expensive. Because they have a shorter half-life than warfarin, they lose their pharmacological effectiveness much sooner, and also need to be taken more regularly than warfarin.

To provide a definitive word on which is the most cost-effective in the long run within the broader medical care system, You compared the life-long economic and treatment outcomes of warfarin against the new generation medications. She ran a randomized statistical outcome analysis of a hypothetical group of 65-year-old people suffering from atrial fibrillation (a heart rhythm disorder), and also included additional information from previous clinical trials.

Dr. You specifically measured if the price tag of a specific treatment was worthwhile and if it influenced a patient's general quality of life, in the sense that the person could undergo fewer cumbersome blood tests or monitoring sessions to ensure that the treatment adequately prevented strokes. Generally, warfarin treatment is regarded as successful if a patient is within the needed therapeutic range for 75 percent or more of the time. A percentage less than 60 percent is sub-optimal, and generally needs more monitoring and intervention from practitioners.

Dr. You found that, generally, the use of warfarin was most cost-effective when patients were within the successful therapeutic range for more than 70 percent of the time. She found, however, that in patients where this range dropped below 60 percent, the more expensive new drugs were more cost-effective in the long run. Clinicians have the option of intensifying the management of warfarin therapy (including more frequent blood tests and management by specialists) until a 70 percent therapeutic range is reached, but this has added financial implications.

"The acceptance of the new oral anticoagulants as a more cost-effective option than warfarin therapy is highly dependent on the level of anticoagulation control achieved by warfarin therapy, cost for anticoagulation service to manage [patients](#) on warfarin, and drug cost of the new oral anticoagulants," You concluded.

More information: You, H.S.J. (2013). Novel Oral Anticoagulants versus Warfarin Therapy at Various Levels of Anticoagulation Control in Atrial Fibrillation – A Cost-Effectiveness Analysis, *Journal of General Internal Medicine*. [DOI: 10.1007/s11606-013-2639-2](https://doi.org/10.1007/s11606-013-2639-2)

Provided by Springer

Citation: Weighing up blood-thinners: Is warfarin always the best choice? (2013, October 17) retrieved 5 May 2024 from <https://medicalxpress.com/news/2013-10-blood-thinners-warfarin-choice.html>

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