

# Study shows optimal dose management of warfarin improves anticoagulation control

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Researchers from Boston University School of Medicine (BUSM) have determined the optimal dose-management strategy to derive maximal benefit from warfarin therapy and improve patient outcomes. Results of the study appear online in the December 2008 issue of the *Journal of Thrombosis and Haemostasis*.

Warfarin is highly effective to prevent strokes, treat venous thromboembolism and for other conditions. Numerous studies have focused on the underutilization of warfarin for patients with atrial fibrillation, the most common indication for warfarin. However, relatively little is known about how best to manage warfarin once it is initiated.

"This lack of evidence regarding optimal management strategies probably contributes to our limited success in maintaining patients within the therapeutic range," said lead author Adam Rose, Md, MSc, assistant professor of medicine at BUSM and core investigator in the Center for Health Quality, Outcomes and Economic Research at Bedford VA Medical Center. "Previous studies have clearly shown that time spent outside the therapeutic range contributes to more adverse events for patients, such as stroke and gastrointestinal hemorrhage. Therefore, increasing the time in the therapeutic range is of utmost importance."

Researchers studied 3,961 patients receiving warfarin from 94 community-based clinics and validated a model for the probability of a

warfarin dose change under various conditions.

This model was then used to predict the number of dose changes each patient would have, based on characteristics of their clinic visits and anticoagulation control. The predicted number of dose changes was then compared to the actual number of times the dose was changed. Patients who deviated the least from the predicted number of dose changes achieved the best anticoagulation control and patients with greater deviations had worse anticoagulation control. On average, clinicians in the study changed the dose when the international normalized ratio was 1.8 or lower/3.2 or higher.

"The study suggests that anticoagulation control could be improved considerably by changing the warfarin dose only when the ratio is 1.7 or lower/3.3 or higher," said Rose. "In addition to offering warfarin to as many optimal candidates as possible, we also need to optimize warfarin dose management to fully realize the benefits of anticoagulation."

Source: Boston University

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