Influence of usual dietary vitamin K intake on anticoagulation outcomes.

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Introduction. Warfarin is an oral anticoagulant widely prescribed for the prophylaxis of thromboembolic conditions and acts by inhibiting the activation of vitamin K (VK)-dependent coagulation factors. The resulting prolonged clotting time is usually expressed as the International Normalized Ratio (INR). The effectiveness and safety of warfarin therapy depends on INR stability, which is hardly achieved due to a narrow therapeutic window and a large inter-individual variation in dose requirements. Although dietary VK is known to interact with warfarin, its specific contribution to INR stability, warfarin dose, and INR test requirements remains controversial. Moreover, whether its effect on these anticoagulation outcomes is modulated by the polymorphisms of CYP2C9 and VKORC1 remains to be determined.

Methods. Usual dietary VK intake was retrospectively assessed in 245 new warfarin users using a VK specific food frequency questionnaire. The percentage of time in the therapeutic range (TTR) and the number of INR tests undergone by patients were measured during the 3-12 months period after initiation of warfarin. Their associations with VK intake were tested with logistic regression models. The warfarin stabilization dose was self-reported at 3 months of treatment and tested with a multiple linear regression model.

Results. Compared with patients in the lowest third, patients in the highest third of VK intake presented a lower risk of having a TTR <60% (OR[95% CI]; 0.42[0.19-0.94]) and a number of INR tests >10 (OR[95% CI]; 0.48[0.23-0.99]). Higher VK intake was not significantly associated with a higher warfarin stabilization dose (p=0.07). We did not find any statistical interaction between VK intake and genetic factors on anticoagulation outcomes (p≥0.05).

Discussion. Overall, this study suggests that high VK intake has beneficial effects on INR stability and the need for INR monitoring, without inducing a significant increase in warfarin dose. Our results also suggest that the effect of VK intake on these anticoagulation outcomes is not modulated by CYP2C9 and VKORC1 polymorphisms.

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