

Correlation between Warfarin Dosage and Daily Vitamin K Intake.

— The Difference among VKORC1 Genotypes —

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< BACKGROUND and PURPOSE >

The restriction of oral vitamin K (VK) intake is essential for patients with warfarin anticoagulation. However until now, the ideal daily intake of VK for each patients were not established.

On the other hand, an excessive restriction of VK may cause pathological osteoporosis or abnormal calcification of vessel wall.

In this study we evaluated the correlation between warfarin dosage and daily VK intake from the perspective of the VK epoxide reductase complex subunit 1 (VKORC1) genotype.

< SUBJECTS and METHODS >

We enrolled 84 patients (29 females, average age 75.6) under warfarin anticoagulation for more than one year.

We measured the serum VK1 and VK2 concentration using the high-performance liquid chromatography and VKORC1 genotype with informed consent.

The original questionnaire about average weekly food menu was contrived to estimate the daily VK intake.

Baseline characteristics of each patients were also extracted and analyzed.

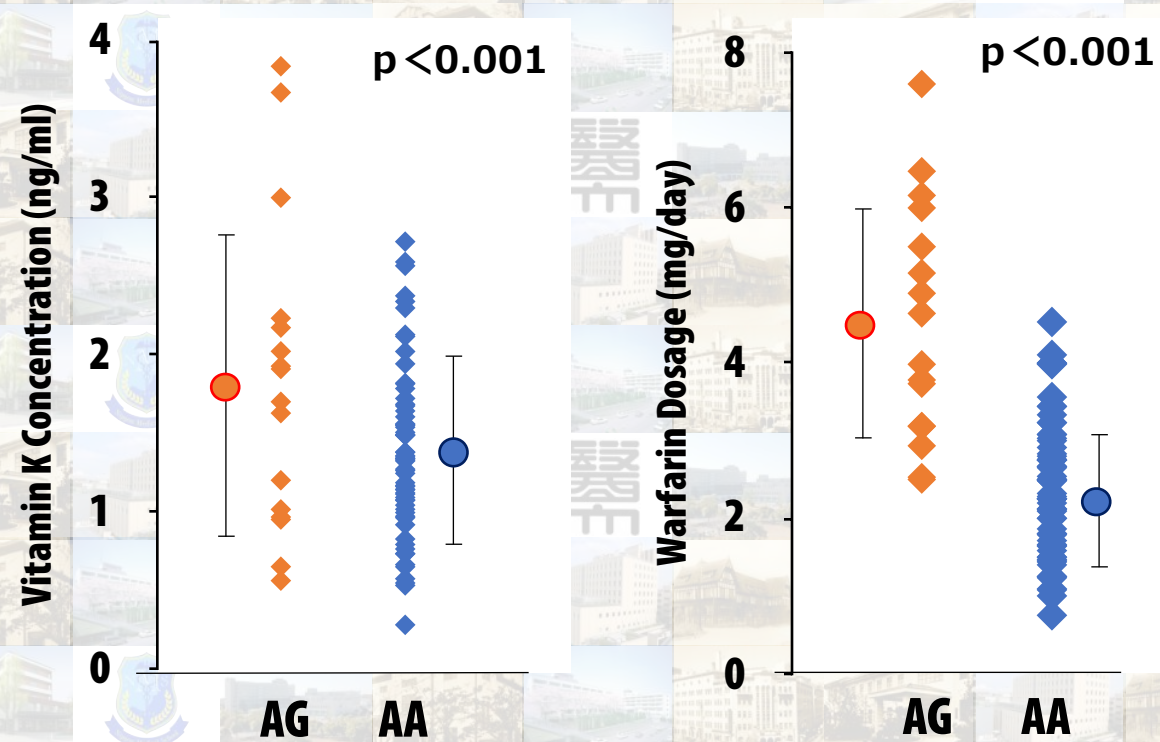
< RESULTS >

The VKORC1 genotype AA and AG were found in 81% and 19% respectively. None of our patients had GG. The patients with AG had significantly higher VK1 concentration and average warfarin dosage compared to those with AA ($p < 0.001$).

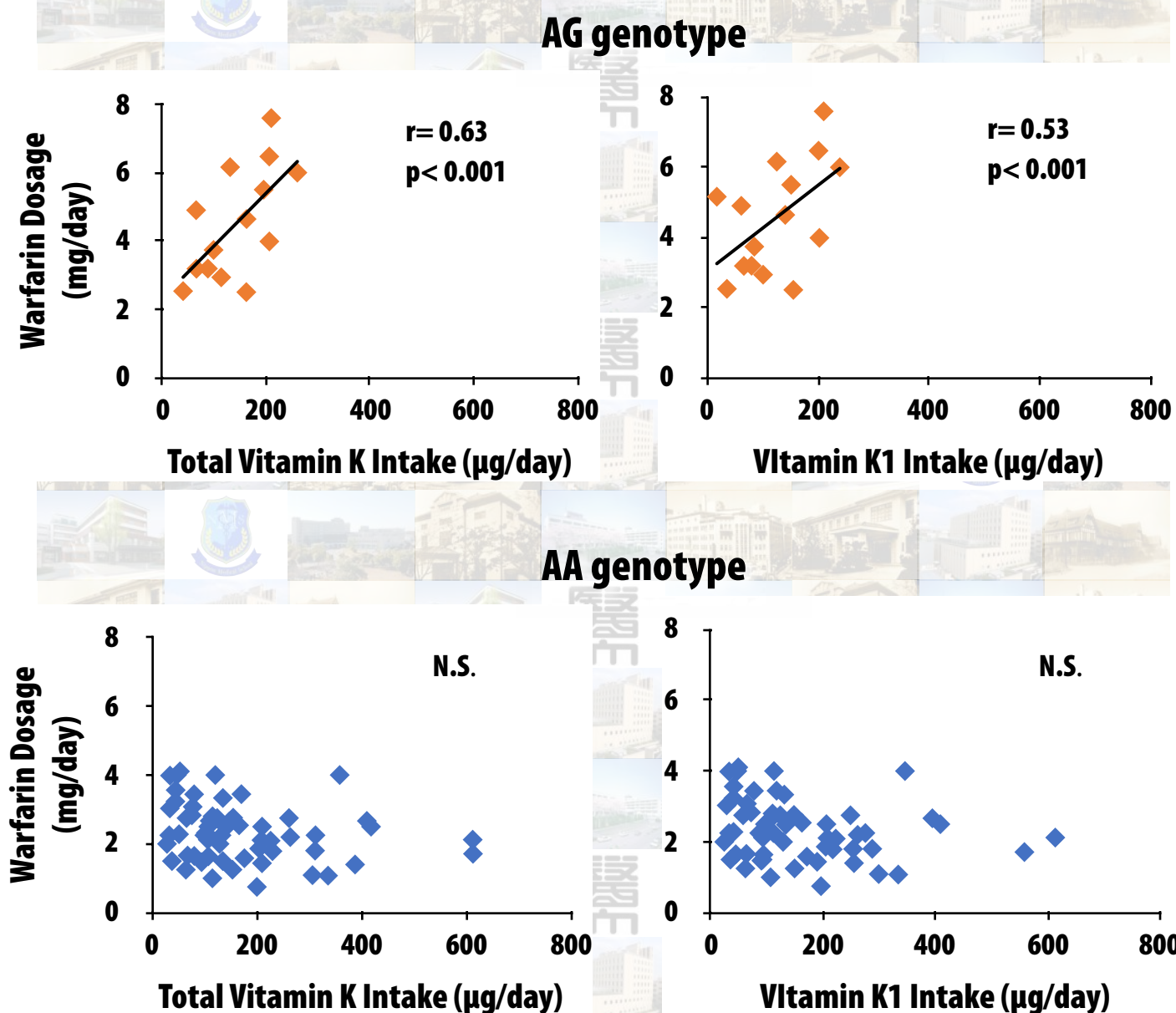
Whereas there existed a significant correlation between VK1 concentration and total VK intake in patients with AG ($r = 0.61$, $p < 0.001$), there was no correlation in patients with AA.

Also, we found a significant correlation between VK intake and average warfarin dosage in patients with AG ($r = 0.63$, $p < 0.001$), however no correlation was found in patients with AA.

VK concentration and warfarin dosage according to VKORC1 genotype



Correlation between VK intake and warfarin dosage according to VKORC1 genotype



< CONCLUSION >

The influence of daily oral VK intake for warfarin treatment was recognized only among patients with VKORC1 AG genotype. For patients with AA, a strict restriction of VK may not be needed.