Nutrition Recommendations While Taking Warfarin

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ABSTRACT

Warfarin is a highly effective oral anticoagulant, which is used in the primary and secondary prevention of venous thromboembolism and for the prevention of systemic embolism in patients with prosthetic heart valves and atrial fibrillation. The anticoagulant effect is shown by decreasing the amount of vitamin K required for the activation of clotting factors II, VII, IX and X. Anticoagulant response is highly variable and is influenced by numerous factors, including genetic polymorphisms in the enzymes that metabolize the drug, dietary intake of vitamin K and a wide variety of drug-drug, drug-herbal and drug-food interaction.

Keywords: Warfarin, nutrition, vitamin K

INTRODUCTION

Warfarin is an oral coumarin anticoagulant. In 1939, it was discovered that spoiled sweet clover possessed anticoagulant properties due to the presence of a compound identified as bishydroxycoumarin. For the first time in the wild, decapitated bleeds attributed to the consumption of sweet clover have been described in Wisconsin in 1920. As a result, dicoumarol was isolated in 1940. The most popular in this group of compounds has been proven to be warfarin (1). Kumars act as competitive inhibitors of vitamin K epoxide reductase. Vitamin K acts as a common factor in the synthesis of coagulation factors II, VII, IX and X. The casinos are responsible for regenerating reduced K vitamins. The main use of carbamazines is the treatment and prevention of thromboembolic disease. Warfarin, one of the oral anticoagulants, is a vitamin K antagonist, and treatment and prophylaxis of thromboembolic events is a widely used treatment. The international normalization rate (INR) is used to ensure the safe and effective use of warfarin. (2,3,4). Hemorrhage and, exceptionally, hemorrhagic skin necrosis are the major adverse reactions to the coumarins. Administration during pregnancy can cause an embryopathy. Allergic reactions are extremely rare. Bleeding is the major complication of coumarin anticoagulants. The annual incidence of major bleeding among 4060 patients in the AFFIRM trial, who were followed for an average of 3.5 years, was about 2% per year. The intensity and stability of treatment, in addition to the beneficial effect of the coumarins, determine the rate and severity of bleeding complications [5]. The intensity and stability of the treatment determines the proportion and severity of bleeding complications, in addition to the beneficial effects of the coumarins.

DISCUSSION

Clinical use is so important that it is very important to know how to interact with medicines and foods to prevent the unwanted side effects such as the effective use of warfarin and bleeding. As you know, there are many food interactions with the food. Some increase the impact of warfarin, leading to complications such as major and minor hemorrhage while reducing the efficacy of some food products causing unwanted thromboembolic complications. Dietary vitamin K is important in patients receiving chronic oral anticoagulants because of warfarin metabolism and mechanism of action (Tablo 1). Depending on the vitamin K ratio in the vitamins, fluctuations may occur in INR levels. More importantly, life threatening bleeding or thrombosis can be seen in these patients [6,7,8]. The use of 1-10 mg / day of phylloquinone (filakinone), known as vitamin K1, blocks the effect of warfarin. Although there...
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is insufficient information on the amount of vitamin K to be taken with dieting, it is recommended that patients taking warfarin receive a dose of 65-80 μg / day of filacinone.[6]

Table 1. Vitamin K content of some foods

<table>
<thead>
<tr>
<th>NUTRIENTS</th>
<th>High amounts of K vitamins (&gt;100 mcg)</th>
<th>Includes medium K vitamins (25–100 mcg)</th>
<th>Contains low amounts of K vitamins (5–25 mcg)</th>
<th>Those without K vitamins (&lt;5 mcg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Broccoli (cooked) - 110 mcg.</td>
<td>Cabbage (cooked)37 mcg.</td>
<td>Carrot (cooked)11 mcg.</td>
<td>Cheese, milk and dairy products</td>
</tr>
<tr>
<td></td>
<td>Cabbage (cooked)418 mcg.</td>
<td>Kiwi fruit - 1 piece,31 mcg</td>
<td>Mango - 1 pcs 9 mcg.</td>
<td>Eggs</td>
</tr>
<tr>
<td></td>
<td>Scallion 105 mcg.</td>
<td>Watercress (raw) 85 mcg.</td>
<td>Pear -1 adet 8 mcg.</td>
<td>Fish and shellfish.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cauliflower (raw)11 mcg.</td>
<td></td>
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<td></td>
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<td></td>
<td>Cabbage (raw)- 21 mcg.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Pumpkin seeds -13 mcg var.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tomato (raw) - 1 piece 10 mcg.</td>
<td></td>
</tr>
</tbody>
</table>

Dark green leafy plants are the main sources of vitamin K taken on the diet. The chlorophyll content and freshness of these plants are directly proportional to their vitamin K concentration.. Interestingly, freezing, boiling or microwaving these natural sources of vitamin K does not change the rates of filakinone. [6] Vitamin K in vegetable oils is degraded by 50-95% in 48 hours in sunlight or fluorescent light. Milk and dairy products and animal foods contain less filakinone. but meat and eggs treated with vitamin K-rich oils (meat decay, fry, etc.) can increase the proportion of K vitamins taken on the diet. The warfarin-food interaction can be confronted in different forms. These are the patients using warfarin:

- Warfarin resistance due to high vitamin K rich diet,
- Low anticoagulant effect due to high vitamin K vitamin
- Low-grade vitamin K can be listed as a high anticoagulant effect due to the diet.

A study by Franco et al. [9] showed that changes in the ratio of vitamin K taken in the diet to patients using oral anticoagulants were the primary cause of fluctuation in INR value. Pederson et al. [10] and Ovesen et al. [11] reported that the Brussels cabbage, which had a high rate of filakinone, had a negative effect on anticoagulant therapy. Healthy nutrition and long life expectancy, the herbal treatment direction is increasing day by day. Thus unwanted conditions can occur in patients using warfarin. Chinese wolfberry tea has been shown to potentiate the effect of warfarin, especially in the increasing use of CYP2C9 isoenzymes in the liver. (7). Narringin, found in grapefruit juice, has been shown to potentiate the effect of warfarin by affecting the CYP3A4 isoenzyme of the P450 enzyme responsible for drug metabolism. (12,13) In one study, Quilinggao((A product in the form of jelly used in traditional Chinese medicine for herbal treatment), a herbal product widely used in China, reported that it potentiates the effect of warfarin due to antithrombotic and antiplatelet effects (14). There is great responsibility for healthcare professionals who are responsible for the treatment and follow-up of patients receiving oral anticoagulants in such a sensitive manner. These patients should be sufficiently informed about drug-food interactions. In a study of 160 health workers, it has been shown that health workers are not fully and sufficiently informed in this regard. (15).

CONCLUSION

As a result, patients' nutritional regimens should be considered during warfarin therapy. The education of these patients must be ensured and knowledge of possible drug-food interactions should be provided. We think that it will be beneficial for dietitians to prepare sample food tables and health workers to give more importance to this issue.

REFERENCES

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