The Impact of Vitamin K & Other Dietary Supplements on Anticoagulation

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Dietetics & Food Services
Objectives of the Presentation

- **Empower the** patient in educating the role of warfarin and diet
- Gain the **evidence based knowledge** about warfarin therapy, factors that affects it and **apply it** to the patient’s daily eating activities
- To make the patients **happy** and adhere that warfarin a life saver and to enjoy the benefits
Let us tickle our brains

1. Fact or Fallacy
   Healthy men need 120 micrograms of Vitamin K while women need 90 micrograms daily
   Answer: FACT
Let us tickle our brains

2. Fact or Fallacy

Eating about the same amount of Vitamin K rich food each day along with compliance to medication helps to maintain the International Normalized Ratio (INR) levels

Answer: FACT
Let us tickle our brains

3. Fact or Fallacy

Kale, mustards green, spinach, turnips greens are good sources of vitamin K along with other green vegetables and you should tell patients on warfarin to reduce them.

Answer: FALLACY
4. **Fact or Fallacy**

Alcohol intakes can affect blood clotting ability in people who take warfarin, as both alcohol and warfarin are metabolized in the liver. Tell patients to avoid alcohol while on warfarin.

**Answer:** FALLACY
5. Fact or Fallacy

Lipid lowering drugs, gout treatment drugs, Vitamin E >400 IU per day, Vitamin C >500mg per day & Coenzyme Q10 can interact with Warfarin

Answer: FACT
Let us tickle our brains

6. Fact or Fallacy
Dong Quai, garlic, fenugreek, red clover, tonka beans and tamarind do interact with warfarin and clear counseling should be advocated
Answer: FACT
YOUR SCORE

- 6/6 – 5/6
  - You are well read with evidence based. You may go back now
- 3/6 – 4/6
  - Stay on as you need to update yourself
- 2/6 – 1/6
  - It is good that you came to this workshop
Don’t worry about your heart!
It will last you as long as you live!

W C Fields
What Does Vitamin K Do?

Vitamin K
● helps the blood clot.
● plays a role in bone health &
● the growth of cells throughout the body
Benefits of Vitamin K rich foods

Vitamin K rich foods

- Are heart healthy, high in lutein, that improves vision
- Are high in fiber, that is gastrointestinal tract beneficial.
- Prevent malnutrition in compromised patients

Reference Library, Warfarin Diet, Health Point Technologies. Accessed Tuesday, Apr 22, 2010
How Do You Get Vitamin K?

- The healthy bacteria in your colon make a small amount of vitamin K
- Most vitamin K comes from food
How Much Vitamin K Do You Need?

- Healthy men need 120 micrograms (mcg) of vitamin K each day
- Healthy women need 90 mcg each day
How Much Vitamin K Is Too Much?

- A Tolerable Upper Intake Level (UL) has not been set for vitamin K.
- This means there is no known, specific limit on the amount of vitamin K that healthy people can safely have.
If You Take Blood-Thinning Medicine

- Vitamin K can affect the thinness of the blood
- Therefore, if you are taking warfarin you need to monitor how much vitamin K you get from food
When on Take Blood-THinning Medicine

- **Do not stop** eating all foods with vitamin K.
- **Do eat** about the same amount of vitamin K each day.
- This way the doctor can **adjust the dose** of warfarin to keep the blood at the right thinness.

Consistency is key for vitamin K!
Evidence Based & Reasonable Patient Education
Be **Careful** about reading health books & journals. You may die of a **misprint or misinterpretation**

*Mark Twain*
People have dissimilar likes & dislikes & are culturally varied.
Consistency

- It is essential to be consistent in their daily intake of vitamin K while enjoying a healthy diet.
- This does not mean they do not eat them at all
- How about patients or children who do not like vegetables at all?

Reference Library, Warfarin Diet, Health Point Technologies. Accessed Tuesday, Apr 22, 2010
Tips for people taking warfarin

- Familiarize with foods that are highest in vitamin K

Consistency is key for Vitamin K!

American Dietetic Association 2010 – Vitamin K. Patient Education Handout
# Vitamin K rich Foods

<table>
<thead>
<tr>
<th>Foods (Cooked)</th>
<th>Serving</th>
<th>Vitamin K mcg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beet greens</td>
<td>½ cup</td>
<td>348</td>
</tr>
<tr>
<td>Collards greens</td>
<td>½ cup</td>
<td>418</td>
</tr>
<tr>
<td>Kale</td>
<td>½ cup</td>
<td>531</td>
</tr>
<tr>
<td>Mustard greens</td>
<td>½ cup</td>
<td>210</td>
</tr>
<tr>
<td>Spinach</td>
<td>½ cup</td>
<td>444</td>
</tr>
<tr>
<td>Swiss chard</td>
<td>½ cup</td>
<td>286</td>
</tr>
<tr>
<td>Turnip green</td>
<td>½ cup</td>
<td>265</td>
</tr>
<tr>
<td>Broccoli</td>
<td>½ cup</td>
<td>110</td>
</tr>
</tbody>
</table>
Vitamin K rich Foods

Beet green

Collard green

Swiss Chard

Turnip green

American Dietetic Association 2010 – Vitamin K. Patient Education Handout
Vitamin K rich foods

Kailan (kale)

Baby Kailan
Vitamin K rich foods

Keerai - Spinach

Spinach

Baby Spinach
Vitamin K rich foods

Sawi keriting

Mustard green
Sawi Hijau

Sawi keriting

Mustard green
Vitamin K rich foods in Disguise

- Palak Panner
- Baked Spinach
- Green Salad
How Much of Vitamin Rich food per day?

- Eat no more than 1 serving of foods high in Vitamin K a day

Reference Library, Warfarin Diet, Health Point Technologies. Accessed Tuesday, Apr 22, 2010
1 serving of food high in Vitamin K =

Spinach (Bayam)
½ cup (80g)

White mustard (sawi putih)
½ cup (80g)
1 serving of food high in Vitamin K =

Salad
1 cup

Broccoli
1 cup (80g)
Tips for people taking warfarin

- Write down everything they eat for 3 or 4 days.
- Then compare the record to the list of vitamin K foods to see how much vitamin K is usually eat each day

Consistency is key for Vitamin K!

American Dietetic Association 2010 – Vitamin K. Patient Education Handout
Food Record

Encourage the patient to keep a food record and inform the Healthcare Provider if they

- plan to change their diet (e.g. weight reduction diet, becomes a vegetarian)
- or they start to travel

Reference Library, Warfarin Diet, Health Point Technologies. Accessed Tuesday, Apr 22, 2010
Food Record (cont)

- notice changes in their diet (due to seasonal availability of certain foods)
- they have an illness that affects their regular eating patterns (diabetes, chemo etc)

Reference Library, Warfarin Diet, Health Point Technologies. Accessed Tuesday, Apr 22, 2010
Tips for people taking warfarin

- Eat about the same amount of vitamin K each day.
- Avoid eating a lot of vitamin K one day, and then none the next.

Consistency is key for Vitamin K!

American Dietetic Association 2010 – Vitamin K. Patient Education Handout
Tips for people taking warfarin

- Each morning, think about the vitamin K foods you will eat that day. Then stick to that plan.

Consistency is key for Vitamin K!

*American Dietetic Association 2010 – Vitamin K. Patient Education Handout*
Tips for people taking warfarin

- Some people find it helpful to avoid the foods containing more than 200 mcg vitamin K (foods that are very high in vitamin K).
- This helps them get about same amount of vitamin K each day

Consistency is key for Vitamin K!

*American Dietetic Association 2010 – Vitamin K. Patient Education Handout*
Tips for people taking Warfarin

- Aim for the recommended amount of vitamin K each day
  - 120 mcg per day for men &
  - 90 mcg per day for women

Consistency is key for Vitamin K!

*American Dietetic Association 2010 – Vitamin K. Patient Education Handout*
Tips for people taking Warfarin

Do not start or stop any new medications, vitamins, herbs or supplements without telling the Doctor/dietitian/pharmacist
Tips for people taking Warfarin

Avoid heavy or “binge” alcohol consumption

Moderate, consistent alcohol intake does not influence warfarin therapy
Alcohol Intake

More than 3 serving of alcohol per day can effect the function of warfarin

- Check on current alcohol consumption
- Ask why he needs to drink alcohol
- Discuss if the patient would want to stop
- If he can’t, recommend the amount allowed per day

Important Drug & Food information, Warren Grant Magnuson Clinical Centre, National Institute of Health. Drug Nutrient Interaction, Task Force
Alcohol Intake

2 standard drinks per day (men)
1 standard drink per day (women)
# Tips for people taking Warfarin

<table>
<thead>
<tr>
<th>Interacting Complementary Medication</th>
<th>effect ▲</th>
<th>effect ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cranberry</td>
<td>//</td>
<td></td>
</tr>
<tr>
<td>Dong Quai <em>Angelica sinensis</em></td>
<td>//</td>
<td></td>
</tr>
<tr>
<td>Garlic <em>Allium sativum</em></td>
<td>//</td>
<td></td>
</tr>
<tr>
<td>Ginkgo</td>
<td>//</td>
<td></td>
</tr>
<tr>
<td>Ginseng <em>Panax ginseng</em></td>
<td>/</td>
<td></td>
</tr>
</tbody>
</table>

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## Tips for people taking Warfarin

<table>
<thead>
<tr>
<th>Interacting Complementary Medication</th>
<th>effect ▲</th>
<th>effect ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucosamine +/- Chondroitin</td>
<td></td>
<td>//</td>
</tr>
<tr>
<td>Papaya extract (containing Papain) <em>Carica papaya</em></td>
<td></td>
<td>//</td>
</tr>
<tr>
<td><strong>St John’s Wort <em>Hypericum perforatum</em></strong></td>
<td></td>
<td>///</td>
</tr>
<tr>
<td>Tan-shen (<em>Danshen</em>)</td>
<td></td>
<td>//</td>
</tr>
<tr>
<td>Vitamin E</td>
<td></td>
<td>//</td>
</tr>
</tbody>
</table>

Dietary Supplement intake

- Many dietary supplements contain vitamin K. e.g. Ensure, milk and dairy products
  - Read labels
  - 1 serving of Ensure (230ml) contains 11.3 mcg K
- That does not mean you tell patients not to use them.
- Inform them to get the INR level monitored when they start them on supplement

*Important Drug & Food information, Warren Grant Magnuson Clinical Centre, National Institute of Health. Drug Nutrient Interaction, Task Force*
Dietary Supplement Intake

- Inform patients that they need to inform us if they start or stop on any dietary & herbal supplements.
- Tell them to bring the bottles/packets of any supplement they are on or going to be on.

*Important Drug & Food information, Warren Grant Magnuson Clinical Centre, National Institute of Health. Drug Nutrient Interaction, Task Force*
Dietary Supplement intake

- B Vitamins: no effect on the INR level
- Vitamin C: up to 500 mg per day will have no effect on the INR.
- Vitamin E: up to 400 IU per day will have no effect on the INR.
Dietary Supplement intake

- Multivitamins: Most multivitamins contain small amounts of vitamin K.
- If they take them, be consistent to prevent Vitamin K fluctuating with the diet.
- The INR level needs close monitoring.
Herbal Supplement

Decreases the Effect of Warfarin

This will thicken your blood further
Herbal Supplement

*Decreases the Effect of Warfarin*

This will thicken your blood further

Wheatgrass

Co enzyme Q10
Herbal Supplement

Decreases the Effect of Warfarin

This will thicken your blood further

Green tea
Green tea cake
Green tea ice cream
Herbal Supplement

*Decreases the Effect of Warfarin*

This will thicken your blood further

Ginseng

Ginseng chicken soup

Ginseng Tonic drink
Herbal Supplement

*Decreases the Effect of Warfarin*

This will thin your blood further

Fish oil

Garlic pills (Lasuna)

Gingko Capsules
Herbal Supplement

*Decreases the Effect of Warfarin*

This will thin your blood further

Danshen

Dong Quai
(Female Ginseng)
RECAP

Three important things on warfarin education

1. Warfarin is an important drug. Follow the prescription exactly, keep the appt dates for blood test i.e. INR /PT
2. Warfarin interacts with Vitamin K in your body so there is a need to keep the intake consistent daily
3. Post the important numbers of the healthcare professionals for easy reference

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For patients

It is all about
patient
empowerment

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For the educators

Do no harm to our patients and avoid non evidence based science

Important Drug & Food information, Warren Grant Magnuson Clinical Centre, National Institute of Health. Drug Nutrient Interaction, Task Force
For the educators

Let us not confuse the patients

The More I Think
The More Confused I Get
For the educators

Respect professionals
Expertise: Doctor Vs Dietitian Vs Pharmacist

Important Drug & Food information, Warren Grant Magnuson Clinical Centre, National Institute of Health. Drug Nutrient Interaction, Task Force
Warfarin Resources

http://www.coumadin.com
http://www.tigc.org/patient.htm
http://www.healthservices.gov.bc.ca
http://www.wellsphere.com/general-medicine

Thank You