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Interactions between Cancer Treatment and Herbal and Nutritional Supplements and Medicines: Information for Doctors

Faculty of Clinical Oncology, Royal College of Radiologists supported by the Clinical Oncology Patients' Liaison Group

1. INTRODUCTION

- 1.1 This leaflet provides information for doctors to help them to inform patients about how to tackle the issues surrounding potential interactions between herbal medicines, nutritional supplements and cancer treatment. Many patients turn to 'natural' supplements or medicines in the hope that they will boost their ability to fight cancer and to reduce the side-effects of treatment. Patients and many health professionals may be unaware that some herbal supplements and medicines can interact with the results of their treatment.
- 1.2 Although hundreds of different herbal and nutritional supplements and medicines are available over the counter and on the Internet, they may not have been investigated for interactions with cancer treatments. Even if extensively tested, no medicine, herbal or orthodox, can be regarded as completely free from potential new interactions with cancers and/or cancer treatments.
- 1.3 Given the paucity of evidence about the effects of herbal and nutritional supplements and medicines, it is not possible for this leaflet to be comprehensive in its coverage. The following information is therefore drawn from various authoritative sources including publicly accessible websites. Website content can change frequently, and this leaflet reflects content at July 2006, when this leaflet was approved. Please check the websites referred to as the evidence and/or conclusions may change over time.

2. GENERAL ADVICE

- 2.1 You may be unsure of your own knowledge about herbal medicines or supplements and their effectiveness in preventing or slowing down the progress of cancer. This should not prevent you from discussing the issue of alternative medicines with patients. Interaction with treatment is an important issue for study and by opening up this growing field to discussion and formal recording of interactions, an increasingly reliable body of knowledge will develop.
- 2.2 It is recommended that you:
 - ask patients if they are taking herbal medicines or nutritional supplements or medicines before they start their treatment;
 - encourage patients to seek further information before taking a herbal medicine or nutritional supplement during their treatment;
 - advise them to tell the healthcare team if they start taking any herbal medicines or supplements during treatment.

- 2.3 For those patients who want to take supplements or medicines about which you may have little or no experience or knowledge, particularly in relation to possible interactions, encourage them to research the subject and to seek expert advice. The websites at the end of this leaflet have been used in its preparation and might be helpful to them.
- 2.4 Patients should be advised to assure themselves that products which are accompanied by claims which offer 'cures' for cancerous conditions are supported by credible evidence.
- 2.5 Warn patients that a delay in starting conventional treatment could make the chances of success significantly less or mean that a curable cancer could become incurable.
- 2.6 If you are unsure about potential interactions, advise patients that it would be in their best health interest to avoid taking untested herbal medicines or nutritional supplements during their treatment.
- 2.7 If your patients are taking herbal medicines or nutritional supplements, you should record any possible adverse interactions that you observe. You have an obligation to monitor and report any adverse interaction through the Yellow Card Scheme (www.mhra.gov.uk).

3. ADVICE ON THE MOST COMMON ISSUES

3.1 *Vitamins/Diet*

- 3.1.1 You should urge patients who want dietary advice to seek a professional opinion, preferably before starting treatment.
- 3.1.2 If patients are keen to supplement their diet, inform them that they can take a good-quality, one-a-day multivitamin and minerals pill, making sure not to exceed the stated dose. A one-a-day multi-vitamin and minerals pill that provides approximately 100% of the dietary reference values from a reputable source has been shown to be acceptable for patients who are unable to eat a diet with adequate micronutrients.¹
- 3.1.3 There is evidence to suggest that antioxidants like co-enzyme Q10, selenium and vitamins A, C and E might reduce the activity of chemotherapy drugs which generate free radicals, for example, alkylating agents and doxorubicin², and radiation therapy^{3,4}. Until more is known, advise patients to avoid antioxidant supplements, especially in high doses, during their conventional cancer therapy.

3.2 *Homeopathic Supplements*

- 3.2.1 You should inform patients that homeopathic supplements for use during cancer treatment should be prescribed by a practitioner qualified in homeopathy, rather than bought over the counter or on the Internet.

¹ Brown JK, Byers T, Doyle C et al. Nutrition and physical activity during and after cancer treatment: an American Cancer Society guide for informed choices. *CA Cancer J Clin* 2003 September;53(5):268-91.

² Labriola D, Livingston R. Possible interactions between dietary antioxidants and chemotherapy. *Oncology* 1999;13:1003-8.

³ Portakal O, Ozkaya O, Erden Inal M, et al. Coenzyme Q10 concentrations and antioxidant status in tissues of breast cancer patients. *Clin Biochem* 2000;33:279-84.

⁴ Lund EL, Quistorff B, Spang-Thomsen M, Kristjansen PE. Effect of radiation therapy on small-cell lung cancer is reduced by ubiquinone intake. *Folia Microbiol (Praha)* 1998;43:505-6

3.2.2 Homeopathic medicines prescribed by a practitioner are diluted to the point where they are unlikely to contain any active molecules⁵ and therefore (pharmacokinetic) interactions with conventional medicines would be considered unlikely.

3.3 *Alternative Treatments*

3.3.1 Patients should take steps to inform themselves very carefully about the reported side-effects associated with the following before considering taking these substances:

- Germanium (voluntarily withdrawn by industry in the UK due to its toxicity and evidence that it can have severe side-effects) (4.2)
- Laetrile (a prescription-only medicine which is a source of cyanide and produces similar symptoms in patients) (4.3)
- Shark Cartilage (current evidence suggests this is not effective for cancer) (4.4).

3.4 *Herbal Medicines*

3.4.1 Patients should take care over the use of the following:

- Co-enzyme Q10: There is evidence to suggest that this interacts with the chemotherapy drug doxorubicin and that it may also make other chemotherapy drugs and radiotherapy less effective (4.3).
- Echinacea: There is evidence to suggest that this interacts with the treatment given to patients who have diseases of the immune system such as Hodgkin's disease, leukaemia, myeloma or lymphoma, or who are having treatment to suppress their immune system (4.2).
- St John's Wort: There is evidence to suggest this may reduce the effectiveness of chemotherapy and other treatments, and may increase side-effects associated with radiotherapy (4.5).
- Mistletoe: No proven to be a safe and effective cancer treatment (4.5).

3.5 *Supplements and Interactions with Particular Treatments and Cancers*

3.5.1 *Patients taking anti-coagulants*

Some cancer patients may be taking oral anticoagulants such as warfarin. There is evidence to suggest that some herbs, supplements and vitamins can interfere with the action of anticoagulants. Well documented examples include:

- Co-enzyme Q10 (4.3)
- Ginkgo Biloba (4.3)
- Cranberry Juice (4.5)
- St John's Wort (4.5)

If patients wish to take a supplement, it is important to ensure that their anticoagulant status is monitored more closely and that they take a regular, stable amount of the supplement on a day-to-day basis so that the effects on their anticoagulant drug dosage can be recorded and stabilised. Patients and doctors should be encouraged to discuss any supplements taken with staff at their anticoagulant clinic. These patients should be advised to avoid starting any new supplements during treatment.

3.5.2 *Hormone-sensitive cancer*

There is evidence to suggest that patients whose cancer is hormone sensitive could suffer adverse interactions with the following:

⁵ Kane S.B. Homeopathic pharmacy. 1997 Churchill Livingstone

Breast, endometrial

- Black Cohosh (4.5)
- Red Clover (4.5)
- Wild Yam (4.2)

Prostate

- Saw palmetto (4.2)

4. HOW TO FIND OUT MORE

Further information on herbal and nutritional supplements and their interactions with cancer can be found on the websites of:

- 4.1 (US) Memorial Sloan-Kettering Hospital:
www.mskcc.org/about/herbs
- 4.2 American Cancer Society:
www.cancer.org/docroot/ETO/ETO_5.asp?sitearea=ETO
- 4.3 (US) National Cancer Institute:
www.cancer.gov/cancertopics/pdq/cam/cam-cancer-treatment/Patient/page2
- 4.4 Cancerbacup:
www.cancerbacup.org.uk/Treatments/Complementarytherapies/Typesoftherapies/Unconventionalmedicines
- 4.5 (US) National Center for Complementary and Alternative Medicine:
<http://www.nccam.nih.gov/health/supplements.htm>

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This leaflet is intended as advice for clinicians who are advising and treating cancer patients. It represents a summary of key points about significant potential interactions that may affect patient care brought to our attention from current evidence. The advice is not comprehensive, exhaustive or definitive. Given the wide range in types of cancer and of the medicinal and other herbal and nutritional supplements/substances and the lack of published evidence about the effects or interactions, the leaflet cannot attempt to offer advice on all possible interactions and or effects on planned professionally prescribed cancer treatments. The sources used in the preparation of the leaflet are listed.

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