

Headlines

Winter 09

A newsletter for brain tumour patients and their families

MEDICAL UPDATE

How does radiotherapy kill brain tumour cells?

RADIATION OCCURS NATURALLY in our environment, and we are exposed to small doses of radiation every day. Throughout the 20th century, scientific advances in our understanding of radiation have led to the development of its use as an important tool for diagnosing cancer with x-rays and CT scans and treating cancer with radiation therapy machines called linear accelerators. For benign and malignant brain tumours, radiation therapy is delivered by high energy x-rays. This radiation damages the genetic material of the tumours, causing cell death and tumour shrinkage.

Radiation can be used to cause direct or indirect damage to tumour cells. Direct damage occurs when the radiation energy harms the tumour cell DNA, making it impossible for the tumour to continue to divide and reproduce. Additional indirect effects occur when the radiation causes the formation of highly reactive "free radicals," molecules which readily combine with other atoms and molecules in chemical reactions that further damage the tumour cells.

Normal cells are mixed in with tumour cells, but are protected to some extent from radiation damage because they are not dividing rapidly. Aggressive tumour cells undergo continual cell division, and dividing cells are more vulnerable to radiation effects than normal cells. In

addition, the schedule of short, daily ("fractionated") treatments that your radiation oncologist prescribes will allow your normal cells to recover from damage between treatments ("fractions"). Fortunately, tumour cells do not repair themselves as well as normal cells, so they collect more damage as the radiation treatment continues.

Gliomas, the most common adult brain tumour, are "diffusely infiltrating" tumours. This means that tumour cells are scattered about the brain, even though they may be in numbers too small to see on an MRI. As a result, high-precision delivery techniques such as stereotactic radiosurgery, or the Gamma Knife®, are not appropriate for the treatment of gliomas, which require radiation to the visible tumour, as well as a margin around it where other tumour cells are likely to be lurking. These high-precision delivery methods are better suited to treating small brain tumours that do not infiltrate throughout the brain, such as brain tumours that have spread from other cancers in the body and certain benign tumours.

A treatment mask will be created for you to be used by the radiation therapists to position and immobilize your head so that radiation can be delivered accurately to the tumour, with minimal damage to other brain tissue. Your radiation oncologist works with a team that includes radiation therapists and medical

physicists to design a personalized treatment plan that will deliver a precise amount of radiation to the tumour and a safety margin around it. They will also work to ensure that critical areas of the brain are not included in the treatment area.

In the last decade, a clinical trial demonstrated that radiation combined with a pill-form of chemotherapy, temozolomide, was more effective in treating high grade gliomas, and this has become the standard treatment. The chemotherapy appears to make the tumour more sensitive to the lethal effects of radiation, and may also play a role in reducing the tumour cells' ability to become resistant to chemotherapy, a major problem in cancer therapy.

Ideally, radiation therapy will continue to kill brain tumour cells for many months after the treatment is complete. Treatment options for recurrent brain tumours will include chemotherapy, surgery or a combination of the two. If your tumour becomes active again more than a year after your radiotherapy is completed, radiotherapy can be used again, but only after chemotherapy and surgical treatments are exhausted and only if you are strong enough to withstand a second course of radiation treatment. A second course of radiotherapy has substantially higher risks of side effects than a first course of radiotherapy.

Feeling your best when undergoing radiation therapy for a brain tumour

MOST PEOPLE TOLERATE radiation therapy for brain tumours very well. You will see a team of radiation therapists daily and a radiation oncologist weekly throughout your treatment, and they will provide you with ongoing guidance. Here are some of the common side effects of treatment, with advice on how to deal with each one:

Headache and cerebral edema (swelling)

As tumour cells are killed, there is swelling in the brain. This can lead to headache and nausea, especially in the beginning of treatment. Your doctor may prescribe a steroid medication (dexamethasone) to reduce the swelling. This medication is very effective in treating brain swelling, usually within 24 to 48 hours. It causes a number of side effects and should never be stopped abruptly, so speak to your therapist, nurse or doctor about discontinuing this medication. You may also benefit from medications used to treat nausea, such as ondansetron

(Zofran®), prochlorperazine (Stemetil®) or dimenhydramine (Gravol®).

Hair loss (alopecia) and skin changes

The hair follicles of the scalp are composed of rapidly dividing cells, and are therefore vulnerable to the effects of radiation. Hair loss will occur where the radiation beams are directed and may be temporary or permanent, depending on the dose delivered. The hair may grow back with a different colour or texture. If you are interested in wearing a wig, it's best to shop for one before the hair begins to fall out, usually in the 2nd or 3rd week of treatment, so that you can easily match colour and style. The skin of the scalp may become tender and red during treatment, as if it were sunburned. Use a mild shampoo with warm (never hot) water and avoid dyes, hair dryers and curling irons. Should you develop itching or flaking skin (dry desquamation), the therapists will advise you about the use of appropriate creams. Redness, oozing skin or pain

(moist desquamation) should be promptly reported and treated.

The small hairs within the ear canal may also be lost because of radiation, with the potential for buildup of wax in the ear and resulting in decreased hearing. A few drops of mineral oil in the ear canal will help soften the wax and allow it to be dislodged. Do not put anything else into the ear to remove the wax. Cover the head and ears to protect the tender skin from sun, wind and extreme temperatures.

Fatigue

Fatigue usually occurs by the 3rd week of treatment. Continue to remain as active as possible, but allow for rest periods. Activity and exercise may help to prevent or decrease fatigue and will help you to sleep well at night. Plan your day so that your most demanding activities occur when you are most rested and when your energy is likely to be best. Delegate responsibilities when necessary and if possible. Rarely, extreme sleepiness and fatigue may occur, accompanied by loss of appetite and nausea. This should be reported to your health care team.

"I realized how important it was to talk with other people who were travelling the same path"



BC Cancer Agency
CARE & RESEARCH
An Agency of the Provincial Health Services Authority

You are invited to join one of our new Online Information & Support Groups

- Participate from the comfort of your own home
- Free for cancer patients & family members throughout BC & the Yukon
- These private online chat groups are counsellor-led & easy to use



Our Program Coordinator Sophie, will find a group that is right for you.

Call 1.800.523.2885 Ext. 4955 or
google canada.thewellnesscommunity

Bleeding and infections

If you are taking chemotherapy with radiation, remember to have your blood drawn weekly and report any signs of reductions in your blood counts. If the white blood count drops, you may be at risk for infections, so report a fever greater than 38° C or 101° F or go to your local emergency room. Note the appearance of bruises or red spots (petechiae) indicating a bleeding tendency caused by decreased platelets, the blood cells which help your blood to clot.

The Brain Tumour Foundation of Canada offers support for caregivers in a number of different ways

- Through their toll-free phone line 1.800.265.5106 where individuals can call for information or support in your area.
- Through support groups across Canada.
- Through their website, www.braintumour.ca, that has a special Message Board section that is specific to caregivers and their needs. Individuals can simply go to the main page, click on "Message and Chat" and follow the instructions to register for the Message Board. Once inside, there is a specific category for caregivers where they can post messages and engage in online discussions with other caregivers.



For more information
1.800.265.5106
www.braintumour.ca

NEW! As of January, 2009, the BC Cancer Agency, Vancouver Centre will offer separate support groups for caregivers

When:

First Wednesday of every other month,
9 to 10:30 am NOTE NEW TIME!

January 7

– separate caregiver and patient groups

February 4

– combined group with guest speaker,
Angie Bowman, Nutritionist

March 4

– separate groups

April 1

– combined group

May 6

– separate groups

Where:

John Jambor Room, ground floor, BCCA,
Vancouver Centre

Note that separate caregiver support groups will occur at the same time, in a different room, as patient support groups. Caregivers are also invited to attend the regular patient support groups held in February, April, June, October and December. There will be no separate caregiver groups during these months.

There are no support groups held in July and August. Groups will begin again in September.

Bereavement Walking Program

The Vancouver Hospice Society invites you to join a Bereavement Walking Program for those who have suffered the loss of a loved one. The program offers a time to walk and talk at a relaxed pace with others who are grieving; to share ideas and support, and to benefit from fresh air and exercise. Joining in on the walk are trained hospice volunteers. Here is what some of the participants have to say about the program:

- People who are grieving need to talk to others who understand their problems and adjustments. This is a healing and wonderful program. Thank you.
- It is important to me to spend time for support with people other than my family.
- Seeing people improve from week to week was very inspiring to those of us who are struggling.
- I realized, again, the strength that lies in a supportive community of sharing travellers.

Walks begin either Wednesday, January 28th or Saturday, January 31st, 2009

Meet at the Planetarium, in front of the crab sculpture
1100 Chestnut Street (Parking is free)

Gathering Time: 9:45 am ~ Dress warmly

Walk begins at 10 am sharp

To pre-register and for information about which day you will meet, contact either:

Sharon Harowitz, 604 731 8643 sharowitz@shaw.ca or

Sue Wong, 604 731 7805 adwong@telus.net

www.vancouverhospice.org/walkingprogram

Q My husband is receiving treatment for a brain tumour. We would like to send his records to our naturopath in Vancouver. How do we go about doing this? Also, we are interested in picking up copies of his records and his MRI scans to bring to California for a second opinion there. How do we do this? A friend told me he keeps all of his MRIs on file at home – is this possible?

A Many patients keep their own personal file of all their medical records here at BCCA. If your husband wishes to receive a copy of his records for himself or to send to another health care practitioner, he need only come by the Release of Information department and fill out an authorization form. This form is good for a year, and allows patients to specify who can receive their information, and what information can be

sent out. Once the request is processed, we can send the records to his naturopath or other doctor, and he may choose to pick up his personal copy or have it mailed to him.

A family member may pick up records on the following condition. The family member's name must be written in the section of the authorization form that reads "This information is to be released to," and they must also be prepared to confirm their identity with a driver's license or any other type of government ID which includes a photo.

There's no charge for these services. At the Vancouver Centre, we are located on the 4th floor, and the phone number

is 604 877 6000 extension 2334. For all other centres, call the BCCA centre main switchboard number and ask for the Release of Information Office. The office is open Monday to Friday, 8 am to 4 pm.

As for MRI's, we only have the report and not the actual image. If your husband wishes to obtain a CD, he must contact the diagnostic imaging department. The imaging technicians will prepare a CD as soon as possible. Speak directly with the technicians at your BC Cancer Agency centre to determine how quickly the CD will be available. There is

no charge for this service.

by Jennifer Ferrer, Release of Information Office, Vancouver Centre

Question + answer



Editions of *Headlines* are also available as a pdf download at:

www.bccancer.bc.ca/HPI/CancerManagementGuidelines/NeuroOncology/PatientResources.htm

If you would like to submit an article, ask a question, or serve on our patient and family advisory board, please contact Rosemary Cashman at rcashman@bccancer.bc.ca or 604 877 6072 (phone) 604 877 6215 (fax).

All content by Rosemary Cashman unless otherwise specified.