



CHAPTER CAPSULE

Celebrating 30 Years

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Providing optimal care through promotion of professional standard, networking and development

LONG TERM COMPLICATIONS OF CANCER THERAPIES

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Some years ago I cared for a young man in his twenties who had a sarcoma in his leg when he was five years old. Over the years he had chemotherapy, surgery, and radiation in an effort to control this disease. The sarcoma persisted in a few lymph nodes, but oddly enough, it did not cause any life threatening conditions. He did however suffer from numerous side effects from the therapies that affected his quality of life. He had hearing impairment from cisplatin, chronic cystitis from cytoxan, lymphadenopathy from radiation to nodal beds, and heart failure from the anthracyclines. He would have been a good candidate for a cardiac transplant, but because he had active tumor, he was not eligible. Despite all of his chronic health problems from the treatment of his cancer, he managed to graduate from a physical therapy program before succumbing to heart failure. Despite all of the challenges from his illness and the side effects of his treatments, he had the sweetest personality and everyone loved him. This article will examine the long term side effects of cancer treatment, particularly in young people.

Chemotherapy is given to children and adolescents for various tumors, most notably leukemia, lymphoma, testicular cancer, brain and spinal tumors, sarcomas, Wilm's tumor, neuroblastoma and retinoblastoma. All modalities of treatment are used, but it is the chemotherapy and radiation therapy that leave the most long term problems for a variety of organ systems.

Skin: radiation to the skin may leave the skin more sensitive to sun burn and also predisposed to skin cancer. Patients should have yearly examinations, pay particular attention to using sun block on previously radiated areas and see a dermatologist for any change or suspicious area.

Cardiac: Cardiac problems can arise after radiation to the heart, as with treatment of lymphoma. Side effects can be intensified if cardiotoxic chemotherapy agents are also delivered. Cardiotoxic agents include the anthracyclines, (doxorubicin, daunorubicin, dactinomycin), mitoxantrone, cyclophosphamide, 5FU, taxol and herceptin. Acute and chronic cardiomyopathy occurs in 1-2% of persons receiving anthracycline at total doses of 300mg/M2. The percentage increases to 6-20% after doses of 500mg/M2.

Studies show that there are four times more people with non-symptomatic heart failure than those with overt dysfunction. Treatment with ACE inhibitors or beta blockers can prevent or delay the occurrence of symptomatic failure. Echocardiogram screening is recommended five years after doxorubicin treatment of 300mg/M2 or more and should continue every three to five years afterwards.

Radiation to the heart has slightly different risks, including stenosis of vessels, fibrosis of conduction pathways causing arrhythmias, valvular stenosis and atherosclerosis related to collagen deposition. Symptoms of coronary artery disease can occur 10 to 15 years after treatment. Standard guidelines for risk reduction apply, including avoidance of smoking, obesity and diabetes, management of lipids and hypertension. Baseline echocardiograms and stress tests

10 years after treatment should be done and repeated as necessary. Penicillin prophylaxis for dental or surgical procedures may apply in case of valvular disease.

Neurologic changes occur from chemotherapy, mostly in the form of paresthesias, can result in persistent numbness, hearing difficulties and balance disturbances. There is generally less awareness of the changes that can result from radiation to the young brain, especially when given with chemotherapy. Young people can have a decreased ability to learn post treatment,

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>> INCREASED DENTAL EXAMINATIONS,
SALIVA SUBSTITUTES AND AVOIDANCE
OF SUGAR MAY BE IN ORDER. <<

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FROM THE EDITOR SANDRA REMER, RN, BS, OCN®

My nurse manager came into my office the other day and handed me a book. She told me that she had given it to my nurse colleagues at our last morning staff meeting. I had attended via a phone conference because I was at our West Bloomfield office. The book was entitled, *Strength Finders 2.0*. My manager told me that she would like each of us to read the book to page 30 and then take the “little test on-line”. This will tell us where our strengths lie. I smiled and said thank you, thinking another gimmick. I sort of glanced through the book, but because I don’t have much time at work to read, I put the book in my bag and took it home.

I was going on vacation in a couple of weeks and thought I’d take the book with me and read it then. Well, I actually did and I was intrigued by some of the initial information “Do you have the opportunity to do what you do best every day?” was the introductory sentence. “Chances are, you don’t. All too often, our natural talents go untapped. We spend most of our time focusing on our weaknesses and trying to become what we are not” is what I read. I found that very strange, since I think I know what I am good at and I believe most nurses know what they do well, especially oncology nurses.

This book’s introduction describes what the book is basically about and how to apply the information you have learned. It lists 34 THEMES of TALENT, such as achiever, adaptability, analytical, communication, competition, developer, empathy, individualization, learner, responsibility, and strategic to name a few. Each theme is described and examples given to help you understand how you fit into this category.

After reading the required chapters I took the test, following the instructions and answering quickly with my first reaction not concentrating on each question and then deciding what answer to pick. What I learned was, what I thought I might be was not completely accurate. I thought I would be an achiever; first, probably including empathy and harmony as themes in my strengths. Seems, I have different “strengths”.

What I have gained knowledge about is that my top 5 themes are developer, empathy, harmony, relator and responsibility (in alphabetical order). How interesting I thought and my manager said “I can see this in you.” So I am processing these themes and trying to learn how each of these traits makes me stand out from all of my other colleagues and how I can work with each of them using the knowledge about their themes/traits. If you’d like to find your strength, although I am not advocating this book as must read material, check it out. *Strength Finders*, written by Tom Rath. The book reads quickly and it can give you a whole new perspective on who you are. It could help you accent the positive and eliminate the negative in your life. We are all given so many different learning tools throughout our lives, I think I like the idea of improving strength!

What I have also observed over the years is that oncology nurses continue to hold many similar traits (theses if you will) and that is what makes us so unique. It is this special bond of traits that bring us together to provide such excellence in care. So, my question for you today is “Do you have the chance to do what you do best every day?” I do and I never realized it.

HIGHLIGHTING A MEMBER: DEBORAH HASENAU



I had the pleasure of speaking to Deborah (Debbie) Hasenau, RN, BSN, MS, OCN the other day and I’d like to share what I found out about her. Debbie has, for the last four years been a Research Nurse in the Urology Department at William Beaumont Hospital, Royal Oak. Debbie loves her job, which allows her to

combine her background in research with her nursing clinical skills. Debbie is a second career nurse, with a Bachelors and Masters degree in Health Administration prior to going back to school at Wayne State University for her BSN. She worked as a research coordinator focusing on studies involving persons with traumatic brain injury (TBI) at the Detroit Medical Center, and an inpatient nurse at Karmanos Cancer Center prior to joining Beaumont Hospital.

Debbie has worked on multiple commercial clinical research studies including a pharmaceutical study to treat bladder cancer. Additionally, she is currently working on a pain study with cancer patients with Wayne State University, in which she spends five weeks working with, and educating patients and caregivers.



Debbie says she especially enjoys working directly with patients to overcome the challenges of their diseases and treatment plans. Her research has allowed her to follow patients for up to two years, getting to really know them. She loves the feeling that she has, in some small way, touched the lives of her patients.

In addition to the many contributions she makes at her work, Debbie has been an active member of the MDONS Newsletter Committee. She is also a member of the Oncology Nursing Society (ONS). She loves the opportunities these memberships present for networking, friendships, low-cost or fee education, and staying current.

The favorite night of the week for Debbie and her husband is Tuesday, when they watch their 1 year-old grand-daughter. Also, when she can find the time, Debbie likes to travel, read, and spend time with her friends and family.

When asked what advice Debbie would give to new and/or experienced nurses, she responded, “Nurses have so many opportunities and choices these days...understand your interests and talents and try to fit your career to these.” Well said, indeed!

SUSAN HANSELL, RN, MBA, BSN

LONG TERM COMPLICATIONS OF CANCER THERAPIES

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which can be worse if hydrocephalus develops. Intrathecal chemotherapy or whole body radiation for stem cell transplants causes only mild or no deficits.

Treatment of neurologic changes includes learning assessment after treatment, psycho-educational assistance or occupational therapy in the case of severe impairment. Maintaining brain health by the avoidance of alcohol and smoking is important.

Hearing changes from cisplatin can be permanent and may require hearing aides. Radiation can lead to decreased production of cerumen in which case lubricant eardrops may be necessary. Chronic otitis can occur that may need treatment with decongestants, antibiotics or tube insertion.

Visual changes can occur in many forms. 5FU can cause decreased tear production. Steroids cause decreased visual acuity and opaque lenses. Radiation damage to lens, cornea, conjunctiva, sclera and retina is possible. Treatment can include steroid drops, sunglasses for UV light protection and corrective lenses.

Dental problems can occur after chemo or radiotherapy, with malformed teeth. Salivary gland injury or prolonged narcotic use can lead to decreased saliva production which predisposes to tooth decay. Increased dental examinations, saliva substitutes and avoidance of sugar may be in order.

Pulmonary toxicity from bleomycin is well known, but it can also occur from mitomycin, carmustine, methotrexate and gemcitabine. Care after bleomycin (total doses 200-400 U/M²) must include instruction to remind anesthesiologists of its history. Pulmonary function testing every 3 to 5 years may be warranted. Of course avoidance of smoking is important along with avoiding asthmatic irritants and keeping up with vaccinations. Radiation is not generally given to the entire lung, but damage occurs to the part that is radiated and is worse with concurrent chemotherapy. Bronchiolitis obliterans can occur and lead to chronic pneumonia.

Hepatic toxicity can occur from methotrexate, 6-MP, 6-thioguanine, and actinomycin-D which can result in hepatic fibrosis and cirrhosis. Veno-occlusive disease from transplant can cause insufficiency or hepatic hypertension. Radiation to the entire liver is not usually given because of its extreme sensitivity.

Digestive problems can occur post radiation in the form of fibrosis, enteritis or stricture, and is treated with dilatation, decompression, high or low fiber diet and lysis of adhesions.

YIKES!! Still with me?!?!

Surgical or functional asplenia can also occur which requires prophylactic antibiotics for dental work, early attention to infections and immunization to meningococcus, H flu B, and strep pneumonia.

Bladder toxicity from radiation can lead to fibrosis with decreased capacity. Physical therapy can help with incontinence if it occurs. Yearly urinalysis for bladder cancer can be done. Again avoidance of smoking is important to decrease potential for bladder cancer.

Kidney damage may occur from chemotherapy, antibiotics or radiation to kidney. Periodic lab check for renal function should be done as well as avoidance of further damage from CT dye or other drugs. Dietary changes may be necessary for early renal disease or dialysis for late stage.

>> RADIATION DAMAGE TO LENS, CORNEA,
CONJUNCTIVA, SCLERA AND RETINA IS POSSIBLE. <<

Thyroid radiation during any treatment to the neck can result in lifelong hypothyroidism and the

need for replacement therapy. There is also an increased risk of thyroid nodules and cancer.

Growth hormone deficiency can occur from brain irradiation causing pituitary insufficiency resulting in inadequate growth. Pituitary insufficiency can also result in inadequate steroid output requiring hydrocortisone replacement or delayed puberty. Young persons should be assessed for growth and maturation and necessary replacement advised.

Fertility can of course be affected, but that is a separate article! Testosterone deficiency, early menopause and difficulty becoming pregnant or maintaining a pregnancy are common problems.

The risk of developing a second cancer is 3 to 20 times higher than the general population due to underlying genetic issues and treatment damage. For instance, breast cancer is more likely to arise after radiation to breast tissue for lymphomas and thus survivors should be screened for breast cancer.

Maybe it is good no one confronts these issues before subjecting their children to treatment, since it is the proverbial rock and hard place.... But educating our patients about the need to continue a healthy life style and do regular screening can help mitigate these problems.

Congratulations to Michelle Wallace!

Michelle was chosen for the 2012 ONS Excellence in Radiation Therapy Nursing Award. "Michelle's dedication and determination are strongly reflected in the application." The award was presented during the opening ceremonies of the annual ONS Congress May 3-6 2012 at the Ernest N Morial Convention Center in New Orleans, LA. She received a \$250 monetary award, a plaque, plus up to \$1,000 travel and one day per diem to attend the Opening Ceremony at Congress. She was also recognized through a photo display at the convention center, through press releases and on the ONS Web site.

The Chapter Capsule

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