Help for Breast Cancer Side Effects -- Full-Length Doctor's Interview

In this full-length doctor's interview, Debra Lyon, R.N., Ph.D., explains a treatment device for the psychological side effects of breast cancer treatments.

Ivanhoe Broadcast News Transcript with
Debra Lyon, R.N., Ph.D., Nurse Researcher,
The Study of Complimentary and Alternative Therapy,
University of Virginia School of Nursing, Charlottesville, Virginia,
TOPIC: Help for Breast Cancer Side Effects

What is the incidence of breast cancer? Who is at risk for it?

Dr. Lyon: The incidence of breast cancer is, of course, very high in women. The statistics vary, but most commonly it's cited as one in eight or one in nine women will have breast cancer in their lifetime. Breast cancer is more common in older women, but some of the more aggressive tumors are found in younger women.

What are the standard treatments for breast cancer?

Dr. Lyon: Standard treatment is removal of the tumor. This can be done with a lumpectomy. If it's a larger tumor, a mastectomy is required to remove the tumor. At that time, there will be a biopsy of the lymph nodes to see if any cancer spread. After the cancer is excised and taken to pathology to determine the stage and estrogen status of the tumor, then the oncologist and patient decide what the next step of treatment will be. With tumors larger than one centimeter, women will be recommended to get chemotherapy. The chemotherapies vary a little bit, but the standard chemotherapies have an anthracycline base. This regiment has a lot of toxicity associated with it.

Is there a rough estimate of how many women need chemotherapy for breast cancer?

Dr. Lyon: Because most breast cancers are larger than one centimeter, which is not a large tumor at all, it will be excised, and chemotherapy will be recommended.

Most women are going to be asked to consider chemotherapy. Again, it's a decision that has to be made by the oncologist and the patient. But the American Cancer Society guidelines suggest that mortality may be reduced in any woman with a tumor of one centimeter who is treated with a chemotherapy.

What is chemotherapy like for women?

Dr. Lyon: I think many people have a view of the worst symptom associated with chemotherapy being acute nausea and vomiting. That has decreased with some of the newer drugs on the market. Now, one of the most common side effects that women have when they're getting chemotherapy is hair loss. There's still no good way to prevent hair loss.

Lifestyle symptoms that really affect quality of life include sleep disturbances. These sleep disturbances can be made worse because some women become menopausal after the chemotherapy starts. So they not only have side effects associated with chemotherapy, but their very sudden onset of menopause contributes to even worse sleep problems.

There's a pretty high incidence of psychiatric symptoms such as depression and anxiety. The symptoms may not reach the level of a clinical diagnostic entity, but they are still moderately symptomatic.

The other symptom that is most common is fatigue. Fatigue is a symptom that women have described as being almost worse than anything else that they experience during the breast cancer treatment. It's the fatigue that limits their ability to do things the way they used to. Whether it's working outside the home in a job or working inside the home to take care of the family, it's one of the most adversely affecting lifestyle symptoms that a majority of women will experience. For some women, after the chemotherapy ends, fatigue is a symptom that can be ongoing and unresolved. There's really not a lot of information about what causes the fatigue. It's an area that the National Cancer Society has indicated needs further research because fatigue is so common and debilitating.

Is the fatigue related to the immune system being suppressed?

Dr. Lyon: Yes. One of the theories that has been proposed is that it's associated with immune factors and immune disruptions affected not only in the cancer itself, but also by the treatments for cancer.

Do most women experience all of these side effects of chemotherapy?

Dr. Lyon: There has been some research to describe patterns of symptoms, but not enough to be able to describe which symptoms come first, which symptoms come together, when symptoms peak, and when they remit. There's not much literature that gives an answer to that question. It's thought that fatigue and depressive symptoms go together many times in the same person. Sometimes that makes it difficult to treat because the symptoms of fatigue and depression have a lot of overlay. Some of the antidepressants will treat the depressive symptoms, but so far studies have not shown that they help with the fatigue. So, even though the symptoms look similar, the same treatments aren't necessarily working for both symptoms.

What are some of the treatments for the depression caused by cancer and chemotherapy?

Dr. Lyon: Treatments for chemotherapy-induced depression are basically the same treatments that any depressed person without a health problem would receive. Some of the SSRI antidepressants have been used with success. They also use cognitive behavioral therapy.

What is used to treat some of the other symptoms, such as the fatigue?

Dr. Lyon: The fatigue is probably the problem area that has the most room for scientific discoveries. At this point in time, there is no treatment for fatigue that seems to help people. Psycho-stimulants, such as Ritalin, have been used with a small amount of success. Procrit, which is an anti-anemia agent, has also been used. But again, it doesn't seem to help people's fatigue unless it's relieving anemia. Many times the fatigue that's related to breast cancer and its treatment is not necessarily related to the same physiological parameters of anemia.

Are there treatments for the sleep disturbances?

Dr. Lyon: There are good medications on the market that help with insomnia and sleep disturbances. However, most medications that are prescribed for sleep disturbances are meant to be used over fairly short periods of time. Sleep disturbances that are associated with breast cancer and its treatment tend to be more ongoing. Taking a hypnotic agent for several days is not going to change the underlying pattern of the sleeplessness.

If a woman has most of these side effects and symptoms, how many drugs or therapies might she be taking to control them?

Dr. Lyon: I think one of the important factors to remember when women are receiving chemotherapy and other treatments for breast cancer is that these therapies are passing through the liver. So any other medication that you add on top of the chemotherapy is going to have some of the same pathways of metabolization in the liver. Therefore, most prescribers do not want to give multiple medications for symptoms that may not be life threatening.

Tell me what your therapy is for these psychological symptoms that you're studying.

Dr. Lyon: The therapy that we're using is called cranial electrical stimulation. When I first started talking to people about this, they said it was like a shock therapy or electro-convulsive treatment, and it's not. It's an entirely different therapy. It's a micro-current technology. The theory of this modality is that it works much as a homeostatic regulatory type of therapy. We're not changing the client or the energy field in the body, except to re-normalize it. And one of the theories about how people get into patterns of sleep problems, depression and anxiety is that there has been some type of disruption in energy fields.

The device that I'm using may also work through a serotonin pathway in the brain. It's very hard to study mechanisms of underlying disturbances such as depression. We have measures like the PET scan, but the actual brainwave scans are only giving peripheral measures of what's going on in the brain. So it's not like we can do a lab test and say this person has this level of depression, and then we know they're getting better because the lab value normalizes. With symptoms of sleep disturbances, fatigue, depression and anxiety, there's a self-report. People say: "I'm sleeping better. I'm feeling better. My quality of life is better."

How is your study of cranial-electro stimulation administered?

Dr. Lyon: Our study has been designed to use this modality even before women get their first chemotherapy infusion. After the participant signs up for the study, meets the criteria, and has the initial blood work drawn, she will wear the device for one week before and one week after each infusion cycle. We have a 10-week long study, and most of our participants are getting chemotherapy every three or four weeks depending on the type of regiment. The device will be worn for one hour a day. We ask that it's a consistent time of the day, during some time of quiet time. It can be while watching TV, reading, doing quiet activities. This allows women to keep taking care of their usual responsibilities and to not have to stop and do something different just because she is a participant in the study.

How easy it for patients to use the CES device?

Dr. Lyon: The device is not at all invasive. It uses ear-clip electrodes. It's preset at the study measure, so we have to make sure that the batteries are fresh and that the participant remembers to use it once a day. Other than that, she doesn't have to do anything to

adjust the device, change the wavelength, or do anything to change the frequency or intensity of the stimulus.

Can you feel the electrical stimulation?

Dr. Lyon: Some of us can feel it and some of us can't. That has actually been helpful because we have a randomized controlled trial using a natural device and a sham device. So if people could feel it, we would have a lot of difficulty with people who were receiving the sham device and couldn't feel the sensation.

Have you tried the electrical stimulation?

Dr. Lyon: I've tried it on. I think I can feel the electrical stimulation at a very low level. Other people in our office have tried it, and we can turn it up to the highest frequency and intensity without them feeling it. Others of us think we feel it, even when it's set at a very low level.

When I tried it on I felt relaxed, which is not my usual way of being. I certainly didn't have any ill effects.

What are the side effects of the electrical stimulation?

Dr. Lyon: The side effect that is potentially troublesome is dizziness. There's a slight risk of headache and a slight risk of the device having a paradoxical effect. For most people it induces relaxation. For people with a paradoxical effect, they may feel more excited or feel more awake. This is a small sample of people.

There has never been a documented long-term side effect. One of the reasons that we have our participants do weekly reports is to see if there is a change over time. It's very hard to use this modality once or even twice to see if it has an effect, because it is something that has to be used over time. The theory is that there's a gradual build-up of effect that may last even after the modality is no longer used.

What is this electrical stimulation device already being used for?

Dr. Lyon: This device has been used in one form or another for many years. It has FDA approval. The approved indications are for insomnia, depression and anxiety. In the United States it requires a prescription. In Europe these devices can be bought over the counter. There have been studies that have shown that this modality may be effective in reducing pain in women with fibromyalgia, who experience symptoms that are in some ways very similar to the symptoms of women receiving chemotherapy. These include fatigue, depression, anxiety and sleep disruption. It hasn't been used, as far as we know, in any published trials in people with cancer, but it has been used with these symptoms in various populations.

Why did you decide to try this therapy for breast cancer patients?

Dr. Lyon: My background is as a psychiatric nurse. I became interested in the cranial micro-current stimulation as a psychiatric nurse looking for alternative treatments for depressive symptoms. Depressive symptoms are terribly common in people of all age groups, in particular people of child-bearing ages have about a one-in-three chance of having some type of depressive disorder. My research interest is in trying to reduce some of these very common symptoms in women with chronic health conditions, such as breast cancer.

How many patients are in the study?

Dr. Lyon: We currently have five patients. The study has been ongoing for six months now. We have approval from our institutional review board, our cancer protocol center committee, and our general clinical research center. We started by limiting enrollment to University of Virginia Medical Center, but we're now ready to try to recruit study participants from other sites throughout Virginia. We've designed this study so that we can do all of the data collection at women's homes or their doctor's office.

What effects or comments have you heard from these five women?

Dr. Lyon: We have been told that they enjoy being in the study. They enjoy receiving a little extra attention as they're going through this experience. We don't know who has an actual device and who has a sham device. So, even though people are telling us that they think the device is working, we don't know yet if that could be a placebo effect or if that is the effect of the micro-current stimulation.

Why do you think a treatment like this is needed?

Dr. Lyon: While many of the therapies today are curative, such as chemotherapy or radiation, there are a lot of associated life-limiting and potentially debilitating symptoms. In the past, they have been considered less important than the effects of the drugs. These drugs can improve the chances for a long life, but they do have very toxic side effects. We now want to focus on symptom management in addition to the focus on eradication of the cancer.

What is the hope for the future of this electrical stimulation?

Dr. Lyon: This study is considered to be a pilot study, so we hope to answer some of the preliminary questions about whether this treatment works. But further testing is going to be necessary in larger samples of women with breast cancer. We're also considering extending the study into populations of people with different types of cancer and different forms of cancer treatment, such as radiation therapy.

Do you hope for the electrical stimulation to replace other medications and treatments?

Dr. Lyon: All of the modalities that we test here are not alternative treatments, they're complimentary. If we can compliment traditional treatments in a way that doesn't add any burden to a patient, then certainly we think the modalities that we're testing have the potential for perhaps reducing the pharmacological management of these common distressing symptoms.

My hopes go back to the passion that made me become a nurse in the first place. I want to take care of people and help people to feel better. Through symptom management research, I think that nurses have a natural niche in which to channel the passion we have for helping people feel better. They're doing that in a way that's scientifically rigorous and testing therapies that are on the market in a way that helps people to decide whether or not the therapy is effective and worth spending their health dollar on.

What is your favorite thing about being a nurse?

Dr. Lyon: My favorite thing about being a nurse, and this marks my 20th year as a nurse, is the variety of potentialities that are present in nursing. During the earlier part of my career, I was much more involved in direct patient care. From that, I became interested in looking at what we do as nurses. A lot of what we do is try to improve the quality of life of patients that we take care of. But many things that nurses do are hard to quantify, hard to understand how the things we're doing are helping make people feel better. I proceeded with a Ph.D. to add scientific rigor to my patient- oriented background as a nurse to examine some potential modalities that nurses can use to help people feel better. I do this on a different stage than I did earlier in my career. I also teach nursing students. That helps to fuel my passion for transmitting what I've learned as a nurse to the next generation of nurses.

What's the best thing to hear from a patient?

Dr. Lyon: Sometimes the best thing to hear from a patient is not something that is actually vocalized. It may be a way a patient looks when you walk into the room. They may look more relaxed. It may be that they're in less pain after you have taken care of them than they were before you got there. The rewards that we get are not things that people necessarily tell us in words, but more of a human interaction that sometimes can go beyond what people say and do.

If you would like more information, please contact:

Debra Lyon, R.N., Ph.D.
UVA School of Nursing
Center for the Study of Complementary and Alternative Therapies
Blake Center
University of Virginia Health System
Charlottesville, VA 22908
del2a@virginia.edu