Women newly diagnosed with breast cancer often are misled by false information regarding treatments and side effects. Web sites can be filled with graphic stories and false information about chemotherapy. Research has examined how patients handle the side effects of chemotherapy physically and emotionally during treatment. No standardized prechemotherapy intervention has been developed to assist patients with breast cancer preparing for chemotherapy. A 30-minute educational intervention provided by nurses before the start of chemotherapy may assist women in increasing their knowledge of chemotherapy treatment, enhancing their ability to manage side effects and improving their coping strategies.

At a Glance

- Breast cancer is the second leading cause of death among women; however, early detection and advances in treatment have helped to lower the death rate.
- The availability of different treatment options can be confusing, and the Internet can provide false, nonscientific information.
- Educating women regarding the different aspects of their chemotherapy may help to improve their ability to cope with breast cancer.

In 2005, approximately 211,240 women were diagnosed with invasive breast cancer, with another 58,490 predicted to be diagnosed with breast cancer in situ (American Cancer Society, 2005a). Since the 1980s, breast cancer incidence has continued to rise at an alarming rate. Breast cancer is the second leading cause of death among women; however, death rates have been decreasing, which has been attributed to early detection and advances in treatment (American Cancer Society, 2005a). Treatment options include surgery with or without reconstruction, preoperative and/or postoperative chemotherapy, radiation, and hormone therapies.

Research has demonstrated that patients use different coping behaviors depending on the threat of the illness (Dunkel-Schetter, Feinstein, Taylor, & Falke, 1992; Lev, 1992). Most women newly diagnosed with breast cancer are unprepared for their illness and have little or no idea how to cope with their diagnosis. They may look to the Internet, where nonscientific information on cancer treatment may be found. Treatment options and drug therapies can be confusing. Often, patients who undergo chemotherapy do not receive information from a nurse regarding their treatment until the day they begin treatment. Educating patients regarding the type of chemotherapy they will receive, how often they will receive it, and the side effects to expect physically and emotionally can provide patients with a basic understanding of their health care before the start of chemotherapy and may improve their ability to cope with the illness.

Providing Cancer Education

An educational resource kit was designed and provided to women newly diagnosed breast cancer (Samarel et al., 1999). Developed around the Roy Adaptation Model of Nursing (Roy & Andrews, 1991), the kit focused on physiological well-being, self-concept, role function, and interdependence in patients. The model could be used independently by women two to three months after diagnosis or by nurses as a guide when providing support over the telephone or during a breast cancer support group. The tool was not recommended for women who had just been diagnosed because it was believed to be an overwhelming amount of information.

Breast care nurse counselors in the United Kingdom provided support to patients before and after initial consultation with a surgeon (Ambler et al., 1999). Patients in the intervention were found to have an increased understanding of treatments and
significantly lower levels of anxiety compared to women treated conventionally.

Patient Information and Emotional Needs

Identification of patients’ information and emotional needs during the course of treatment has been the focus of much research. Disease, investigative tests, treatments, physical effects, and psychosocial effects were areas in which the highest emotional and information needs were identified by patients with breast cancer during the first cycle of chemotherapy (Galloway et al., 1997). Patients newly diagnosed with cancer expressed needs for information about their disease as well as personal, family, and social concerns (Derdjian, 1987). Men viewed test results as more important, whereas women wanted information regarding their prognoses. Younger patients required more information than those ages 56–70 to cope with the illness (Derdjian). Of patients with cancer examined before, during, and after diagnosis, less than half reported reading educational materials about cancer during any of those times. However, all patients stated that they would have read information had it been provided to them (Garrison, Abner, Oakley, & Hagan, 1983).

Coping With Cancer

Different patterns of coping are used by patients with cancer, including seeking or using social support, focusing on the positive, distancing, cognitive escape-avoidance, and behavioral escape-avoidance (Dunkel-Schetter et al., 1992). Distancing was noted as being used most often by patients with cancer when compared to other coping strategies. Behavioral escape-avoidance coping was found to increase as time went on after diagnosis. Patients who exhibited this behavior often lived alone and showed behavior such as being withdrawn (Dunkel-Schetter et al.).

Patients receiving chemotherapy and/or radiation therapy experience different levels of anxiety. The ability to adapt to cancer treatments has been related to improved patient compliance. Past experiences, perceptions of stressful events, and individual coping methods have been used to deal with the reality of a diagnosis of cancer and to cope with treatment (Lev, 1992).

A need exists for additional nursing research studies to examine a variety of interventions for newly diagnosed patients. An educational intervention conducted before the start of chemotherapy can help patients develop a knowledge base about their course of treatment in addition to possibly developing enhanced coping strategies.

Prechemotherapy Intervention

Women newly diagnosed with breast cancer were identified in an outpatient clinic setting after meeting with their oncologists to discuss treatment plans. Each woman who elected to have chemotherapy was approached at the time or by phone and asked to return for an educational meeting regarding her specific treatment. A 30-minute educational intervention was scheduled at a convenient time and date before the start date of chemotherapy for each patient (see Figure 1). Patients were encouraged to bring family members to the intervention. Women who participated in the intervention received either doxorubicin and cyclophosphamide (AC) every two weeks for four cycles followed by four cycles of paclitaxel or cyclophosphamide, methotrexate, and 5-fluorouracil (CMF) for eight cycles. Women who received cyclophosphamide by IV were treated every two weeks. Those who received cyclophosphamide orally were treated for two weeks in a row and did not receive the drug for the following two weeks.

Chemotherapy Agents and Side Effects

On the day of the intervention, each patient was met by an oncology-certified nurse and taken to a quiet area where the intervention could take place without distractions.

The educational program began with a nurse instructing the woman regarding which type of chemotherapy she would receive. Educational chemotherapy information sheets for each drug (Oncology Patient Education Manual, 2000), along with a Chemotherapy and You booklet (National Institutes of Health & National Cancer Institute, 2003), were given to each patient. Drug administration, length of infusion, and side effects of each drug were reviewed. Patients and family members were encouraged to ask questions and were discouraged from using the Internet as a source of information regarding chemotherapy. The Web sites of the American Cancer Society (www.cancer.org) and the National Cancer Institute (www.cancer.gov) were recommended if patients were interested in obtaining information via the Internet.

The specific side effects of each chemotherapy agent were reviewed, including low blood counts, fever, infection, nausea and vomiting, diarrhea, constipation, mouth sores, hair thinning and loss, cystitis, and discolored urine (only patients receiving doxorubicin).

Altered Blood Counts and Infection

All patients received an informative pamphlet describing the components of a complete blood count, including a description of the differential and its implications for infection (Ortho Biotech Products, L.P., 2002). Patients were instructed that their blood counts would be monitored weekly. Nurses stressed that routine blood work is a normal process that occurs with chemotherapy. Good hand washing was encouraged to prevent infection.

Nausea and Vomiting

Written antiemetic protocol instructions were given to patients and reviewed. Patients were informed that they would

![Figure 1. Prechemotherapy Educational Intervention](image-url)
receive an antiemetic by IV before chemotherapy administration to prevent nausea. Oral antiemetics were to be used at home as needed. Prochlorperazine and lorazepam were prescribed for treatment of nausea. Participants were encouraged to call the office and speak with a chemotherapy nurse if they were unable to control their nausea or vomiting with the medication regimens.

Alopecia

Hair loss was a prominent concern among a majority of women. Those who were scheduled to receive AC were informed that they would lose the hair on their heads and possibly on other areas of their bodies. Women who were scheduled to undergo CMF were told to expect varying degrees of hair thinning. Participants were given a catalog of wigs (American Cancer Society, 2005b) and informed about local wig providers in the community.

If nurses can arrange to meet with patients before the start of treatment, education about what to expect may lead to improved coping strategies.

Maintaining Bowel Function

Information about constipation, diarrhea, and prevention strategies was stressed. Patients were encouraged not to wait if they developed bowel issues, such as constipation or diarrhea, and to contact the chemotherapy nurse for assistance.

Oral Hygiene

Good oral hygiene was discussed with each patient. Use of a soft toothbrush and avoidance of alcohol-based mouth rinse were advised. Written instructions regarding the preparation of a salt and baking soda mouth gargle were provided and reviewed with all patients. Patients were instructed to notify a nurse at the first sign of developing mouth lesions. Dental cleaning was discouraged while receiving chemotherapy because of potential damage to the oral mucosa as a result of the invasive ness of the procedure.

Diet and Nutrition

Patients were encouraged to eat a well-balanced diet. Soft foods and small, frequent meals were advised on days they were experiencing gastrointestinal upset. All participants were given a cookbook specifically for patients with cancer (Clegg & Miletello, 2001).

Other Medications

Each patient was told to take her normal daily medications while on chemotherapy unless otherwise instructed by her physician. Patients were told that multivitamins were safe to take during treatment but all other vitamins and alternative remedies needed to be reviewed with a physician while receiving chemotherapy.

Contacting the Oncology Office

A pamphlet from the oncology office was provided to all patients that included a general explanation of what to expect during chemotherapy. Important phone numbers to call during regular business hours were provided, along with instructions for reaching providers during off-hours.

Web Site Links

A computer was available in the waiting area for patient use. Reliable patient resource Web sites were provided as links on the home page. The computer was connected to the office Web site, which offered a link to the Cancer.com patient resource center. The Cancer.com Web site provided educational information that was easy for patients to read regarding different types of cancer, treatment options, living with cancer, and managing side effects.

Nursing Implications

If nurses can arrange to meet with patients before the start of treatment, education about what to expect may lead to improved coping strategies. The type of educational strategy described in this article can be adapted to meet the education needs of almost any newly diagnosed patient with cancer who is about to begin chemotherapy. The educational intervention also may be a useful guide to new oncology nurses who are developing their patient education skills.

Conclusion

Nurses are patient educators who provide valuable information to patients with cancer undergoing treatment. Knowing what to anticipate during the course of chemotherapy and how to handle side effects is essential for all patients with cancer. Providing education to patients before the start of therapy prepares them for treatment and, in the long term, may improve coping strategies when dealing with the illness. This systematic approach may assist patients in avoiding unnecessary side effects and lead to improved patient outcomes. Ongoing research is needed to examine the need for and benefits of an educational intervention before the start of chemotherapy to help patients develop an understanding of their therapy.

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