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•Preventing CIA in Women with Breast Cancer Improves Psychological Well-being

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Abstract

In adult women with breast cancer, alopecia that often accompanies the use of chemotherapy can be devastating when added to the emotional distress of receiving treatment. According to the Up to Date database, cryotherapy is successful at reducing or preventing alopecia during breast cancer chemotherapy treatment. In addition, several recent studies have shown that chemotherapy-induced alopecia has a negative effect on the body image and psychological well-being of women with breast cancer. The review of literature from Cochrane and PubMed database, from the last ten years, explored studies of women ages 18-80 with breast cancer that evaluated the impact of chemotherapy-induced alopecia on patient's self-confidence, body image, and well-being including anxiety and depression. Shin, Jo, Kim, Kwon, & Myung (2014) reported that scalp cooling method significantly reduced the development of CIA in comparison to other methods and reduced relative risk by one-third. ($p < 0.001$). Choi et al., (2014) found CIA distress was negatively associated with body image, psychosocial well-being and depression among breast cancer patients. Significant differences were found between the severity of alopecia and distress ($p < 0.001$). This study found that CIA is a distressing side-effect of breast cancer treatment and that its prevention can minimize the psychological effects it has on a patient's well-being. Providers can improve the care of breast cancer patients that are receiving chemotherapy by offering scalp cryotherapy, as well as the information and resources necessary to reduce the psychological sequelae and improve their patients' quality of life.

Introduction

It is estimated that 3.1 million women with a history of invasive breast cancer are living in the US with an additional 232,670 newly diagnosed in 2014. Thirty-nine percent of these women received chemotherapy as part of their treatment plan. Chemotherapy used in breast cancer treatment causes anagen effluvium as it destroys the rapidly dividing cancer cells as well as the rapidly dividing hair matrix cells leading to abnormal anchoring or weakening. Hair loss from chemotherapy can begin within days to weeks following the start of treatment. By two months of treatment there is alopecia on the entire body, and hair loss continues for the entire duration of therapy. With the current standard of care for breast cancer using higher doses of chemotherapy the likelihood of certain, severe and sometimes permanent hair loss, means that more woman will be impacted by chemotherapy-induced alopecia.

Statement of the Problem

Chemotherapy-induced alopecia is a crippling side-effect that negatively impacts the psychological and physiological well-being of women with breast cancer. With today's health care focus being patient-centered, it is important that clinicians consider all aspects of care including a patient's physical, mental and emotional well-being.

Research Question

In women diagnosed with breast cancer that receive chemotherapy, does the use of cryotherapy in the prevention of alopecia provide the participants with increased positive physiological outcomes?

Literature Review

The search of literature provided the following main points:

- Chon, Champion, Geddes, & Rashid (2012) stated that across the literature hair loss due to chemotherapy is the most traumatic and burdensome aspect of treatment. (Figure 1).



Dramatic change in physical appearance before (A) and 1 month after (B) treatment

Figure 1. Example of Chemotherapy-Induced Alopecia. Adapted from "Chemotherapy-induced Alopecia", (Chon, et al., 2011), *American Academy of Dermatology*, e40. Copyright 2011 by the Academy of Dermatology.

- Shin, Jo, Kim, Kwon, & Myung (2014) reported scalp cooling method significantly reduced the development of CIA in comparison and reduced relative risk by one-third. ($p < 0.001$).

- Van den Hurk et al. (2009) examined efficacy scalp cooling has on well-being. Scalp cooling was successful 52% of the cases and the differences of well-being on scalp-cooled and non-scalp cooled patients was statistically significant ($p < 0.0001$). Alopecia was the most distressing factor for all groups before chemotherapy and at three weeks and six months.
- Choi et al., (2014) found CIA distress was negatively associated with body image, psychosocial well-being and depression among breast cancer patients. Significant differences were found between the severity of alopecia and distress ($p < 0.001$).
- Begovic-Juhunt et al., (2012) found a significant relationship between body image and depression ($p < 0.01$), overall quality of life ($p < 0.01$), emotional well-being ($p < 0.05$), and social well-being ($p < 0.01$).

Discussion

In summary, this review of studies found:

- Hair loss is consistently ranked among the most troublesome side effects of chemotherapy (Van den Hurk et al., 2012). Additional research found that many women felt losing their hair was more devastating than losing a breast, and that 8% of women in the study would refuse treatment due to the risk of alopecia (Yeager & Olsen, 2011).
- Multiple studies including (Shin, 2014) and (Van den Hurk, 2009) have shown that scalp cooling is effective and currently the best method for preventing or reducing chemotherapy-induced hair loss. With the recent FDA approval of cold cap therapy access to treatment should become more widely available.
- Hair reflects our individuality and is an indicator of a woman's femininity, attractiveness and sexuality. For women diagnosed with breast cancer and impending chemotherapy treatment, the thought of CIA is overwhelmingly distressing. Patients who had high alopecia distress reported lower emotional, physical, cognitive and social functioning compared to patients (Choi et al., 2014).
- In conclusion, CIA can be devastating to women with breast cancer and effect their overall psychosocial well-being. In order to provide personalized care to patients - the multifaceted aspects of mental, emotional, social and spiritual health need to be addressed and, if necessary, treated. Treatments such as scalp cooling to prevent CIA should be viewed as of equal importance to disease management or cures. Additional studies on how to improve outcomes based on psychosocial well-being and improved long-term quality of life would be helpful in the treatment CIA as well as other medical conditions would be beneficial.

Applicability to Clinical Practice

- This study should increase primary care providers awareness of the detrimental effects of CIA on their patients' lives.
- The recent approval of cold cap therapy by the FDA will give patients more access to this treatment, allow for payment by insurance carriers and will become a standard of treatment for women with breast cancer in the prevention CIA.
- CIA prevention with scalp cryotherapy will minimize a devastating side-effect for patients and allow them to maintain their self-esteem, self-confidence and overall well-being.
- A multidisciplinary approach to the management and care of breast cancer patients would make a physically, mentally, and emotionally devastating consequence of treatment into an opportunity for positive self-esteem.

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