

COOLING SCALP WITH CHEMOTHERAPY INDUCED ALOPECIA AMONG CANCER PATIENTS: INTEGRATIVE REVIEW

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Introduction

Alopecia is considered to be one of the most traumatic factors in cancer patient Care. It can negatively impact individual perceptions of their appearance, body image, sexuality, and self-esteem, as well as deprive patients of their privacy, because this treatment-related outcome is readily associated with having cancer by the lay public (McGarvey, Baum, Pinkerton, Rogers, 2001). The overall incidence of chemotherapy-induced alopecia is estimated to be 65%, The prevalence and severity of this type of hair loss are variable and related to the selected chemotherapeutic agent and treatment protocol (Trueb, 2009). Hair loss happens because the chemotherapy affects all cells in the body, not just the cancer cells.

The lining of the mouth, stomach, and the hair follicles are especially sensitive because those cells multiply rapidly just like the cancer cells (Batchelor, 2001). The consequence in hair shedding usually begins at 1 to 3 weeks and is complete at 1 to 2 months after initiation of chemotherapy (Harrison & Sinclair, 2003).

Every individual has a mental picture of his or her own body, which is known as their body image. Body image appears to be determined by interpersonal, environmental and cultural factors. At birth, individuals have no body image, but as they gradually gain awareness of their body throughout life, the individual's body image is constantly developing, depending on their sexual function, occupation, relationship with family or friends, physical appearance, or the loss of or change in any of these components (Cartwright, Edean, Porter, 2008; Dougherty, 2007; Hurk Mols, Vingerhoets, Breed, 2010; Hansen, 2007). The initiation of chemotherapy for a diagnosis of cancer sometimes causes severe

Abstract

Background: The effect of alopecia on men and women has been documented in the literature, and cooling of scalp to prevent alopecia has been documented also, therefore the aim of this study was to determine how greater is the effect of chemotherapy-related alopecia by gender and the effect of cooling the scalp to prevent alopecia.

Method: In this integrative review 9 articles have been used, three qualitative and six quantitative based on two major database PubMed and Science Direct from 2008 to 2013 and the population target is both males and females ages more than 18 years and who have alopecia induced chemotherapy or have risk of developing alopecia.

Result: In most studies women appear to be more effected by alopecia induced by chemotherapy than males therefore the cooling scalp has been used to prevent alopecia, especially among women and the result of this method is a positive effect.

Conclusion: In this integrative review I recommend to focus on this method and trigger the researchers to do more specific studies on cooling the scalp among men and on the type of cancer to bring more effective results of use of this method because it very cheap and easy to apply and the result of most of the previous research showed it had a positive effect.

Key words: alopecia, gender, chemotherapy, hair loss, and cooling scalp

alopecia, which can cause feelings of stigmatization by changing the individual's identity from that of a healthy person to that of a cancer patient; this affects both the patient and others (Hurk, Mols, Vingerhoets, Breed, 2010.)

Recognition of chemotherapy-induced alopecia and associated psychosocial problems has been noted in the literature for three decades. Alopecia has been cited as the most feared side effect by up to 58% of women preparing for chemotherapy, and some patients may avoid treatment for this reason (Lemieux, Maunsell, Provencher, 2008). Women with cancer who experience alopecia report lower self-esteem, poorer body image, and reduced quality of life (McGarvey, Baum, Pinkerton, Rogers, 2001).

Another study reported that men with alopecia had a worse self-image than women with alopecia. (Hilton, Hunt, Emslie, Salinas, Ziebland, 2008).

CIA is however not inevitable. Scalp cooling is a supportive care intervention that overall prevents severe CIA in about half of the patients, who otherwise would have lost their hair (Hurk, Peerbooms, van de Poll-Franse, Nortier, Coebergh, Breed, 2012)

Both gender have fears from alopecia, and cooling scalp is the best method for preventing this condition therefore, the purpose of this paper is to explore results of cooling scalp to prevent alopecia and on which gender this has the most effect with alopecia induced chemotherapy

Methodology

Design:

An integrative review method was used to encompass different forms of research studies, to understand the phenomenon of interest.

A literature search was undertaken through the two major electronic databases PubMed, and Science Direct from 2008 to 2013. The following key words were used to search the electronic databases: alopecia, gender, chemotherapy, hair loss, and cooling scalp. The key words were used in multiple combinations to conduct an extensive search of these databases.

Computerized listings from Pubmed and Science Direct contained 24 and 30 research articles, respectively. All were obtained and reviewed for possible inclusion in this research review based on the specific inclusion criteria established. Article inclusion criteria for the integrative research review were the following:

1. It is a research-based study.
2. It included a patient population with alopecia related to chemotherapy.
3. Prevention of alopecia based on cooling scalp only
4. It is written in the English language.

Based on the inclusion criteria, a total of nine articles published from 2008 to 2013 were selected and formed the basis for this review. Most articles were published in nursing journals. Studies included in this review focused on the effect of alopecia on both genders, related to chemotherapy and the cooling scalp method has been used to reduce or prevent alopecia induced chemotherapy. Countries within which the studies for this review were conducted include the United States, Turkey, Taiwan, Hong Kong and Korea.

Methodological Characteristics:

Of the nine studies composing this integrative research review six were quantitative studies and three qualitative. Although only nine studies were included in this research review, a wide variety of instruments was used to measure psychological effect of alopecia

on both genders and the effect of cooling scalp to prevent alopecia. The most common question used in these studies was is there any gender more affected with alopecia induced by chemotherapy and is cooling of scalp effective in preventing alopecia.

Few of the studies were specifically based on a theoretical model and tested variables articulated by the theorist. Studies based on a theoretical model most often used cognitive behavioral theory.

Sample Characteristics:

The sample sizes in the 9 studies in this review ranged from 19 to 405 adult cancer patients aged more than 18 years. Most (around 53%) of the population were women.

Cancer sites in women were mainly breast, ovary, uterus, lymphoma, and lung.

Cancer sites in men were lymphoma, lung, melanoma, and colorectal.

Results

Chemotherapy-induced alopecia (CIA) is a common side effect of cancer treatment and one of the most distressing side effects for many patients (Hurk, Mols, Vingerhoets, Breed, 2010). The overall incidence of chemotherapy-induced alopecia is estimated to be 65%. The prevalence and severity of this type of hair loss are variable and related to the selected chemotherapeutic agent and treatment protocol (Trueb, 2009). Every individual has a mental picture of his or her own body, which is known as their body image. At birth, individuals have no body image, but as they gradually gain awareness of their body throughout life, the individual's body image is constantly developing, depending on their sexual function, occupation, relationship with family or friends, physical appearance, or the loss of or change in any of these components (Cartwright, Endean, Porter, 2008). Alopecia is a

difficult side effect for both men and women, however there were no differences between male and female patients' body image in respect of degree of alopecia, but psychological well-being was lower in all women than in men, because the incidence of alopecia was higher in women (Gulbeyaz, Melike, Ozgul, Adnan, 2012). Hair loss was more traumatic for women because it heightened their awareness of the potential fatal course of their illness. Men, however, expected the loss and considered it a normal consequence (Susan & Chon, 2012). Women reported poorer quality of life compared with men.

Impaired QoL was associated with a strong illness identity, beliefs in the serious consequences of alopecia and strong emotional representations (Cartwright, Endean & Porter, 2008). Hair loss made many men and women acutely aware of their vulnerability and visibility as a 'cancer patient'. Both men and women described a sense of strangeness or shock when they lost their hair and experienced various negative reactions when people assumed their hairless appearance was a lifestyle choice. The most striking contrast in men's and women's accounts was that women spoke solely of the loss of hair from the head and face above the eye line, and men spoke about losing hair from wider body surfaces. Only women mentioned being encouraged by others to disguise or to prevent hair loss (Hilton, Hunt, Emslie, Salinas & Ziebland S, 2008)

From here many studies did to prevent alopecia induced by chemotherapy, because alopecia is a common side-effect of systemic cancer treatment. Even before patients commence chemotherapy, they foresee a high psychological impact at the moment hair loss actually occurs (Hurk, 2010); most preventive methods have been used including cooling of scalp.

Hair loss was significantly less pronounced in scalp-cooled than in non scalp-cooled patients in

the study of 160 scalp-cooled and 86 non scalp-cooled patients who were available for analysis. Only six men were included. The majority of patients had breast cancer (93%).

Overall, scalp cooling reduced the use of a wig or head cover by 40% (Hurk, van den Akker, Marle, Breed, van de Poll-Franse, 2013). In an observational Study, 81 % of scalp-cooled patients did not require head covering versus 27 % of non-scalp-cooled patients (den Hurk, Breed, Nortier, 2012). Higher well-being was found in successfully scalp-cooled patients, as indicated by a general better health-related quality of life and better body image, whereas unsuccessfully scalp-cooled patients reported lowest well-being (van dan, mols, Vingerhoets, Breed, 2010).

Conclusion

This integrative review was undertaken with the aim of increasing knowledge regarding who was more affected by alopecia induced by chemotherapy among both genders and use of scalp cooling to prevent alopecia. According to the results of articles hair loss was more traumatic for women (Susan & Chon, 2012). Many methods have been used to prevent alopecia during chemotherapy especially in women and most effective method was cooling of scalp therefore I recommend to focus on this method for the following reasons:

- 1- Cheap method
- 2- Easily to apply
- 3- The result of the research appears to show a positive percentage of use of this method.

In addition there is need for a specific study to evaluate the effectiveness of cooling scalp according to gender and type of cancer, and provide an educational program for health care providers on how does this method provide an optimal result.

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