

The Symptom Experience of Alopecia

Sandra Pickard-Holley

Objectives: To examine the physiology and pathophysiology of loss of hair, the impact of alopecia on the patient, nursing and self-care interventions, and available resources.

Data sources: Published articles pertaining to alopecia and personal experiences of coping with alopecia.

Conclusions: Hair loss often is the most traumatic side effect for cancer patients. It causes depression, loss of self-confidence, and humiliation in men and women of all ages. Too few studies exist to make a definitive recommendation for scalp hypothermia and the use of scalp

tourniquets. The major controversy and issue to consider with these hair-preservation techniques is scalp metastases. Further studies are needed to identify the impact of alopecia on patient self-image and quality of life.

Implications for nursing practice: Nursing interventions should be directed toward helping the patient and family adapt to and cope with alopecia. Patient education, identification of available resources, and supportive listening are therapeutic interventions.

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To be born female is to have to wrestle painfully and intimately with the fact of physical beauty or its absence: the question that hangs over us from birth, as the wicked fairy's curse hovered over the infant Sleeping Beauty in her cradle, is: Are you beautiful? Are you desirable? And maybe we are—for a while—but a human body is a lesson in impermanence; it carries no warranties and is all but guaranteed to cause heartbreak.

Judith Hooper¹

WHO WE ARE is tied in varying degrees to how we look. Hair plays a major role in our unique individuality and appearance. Our appearance is very much an integral part of our self and has important significance to our quality of life. Erdos² states, "Hair loss may be the most significant and traumatic change in appearance that cancer patients experience." Younger children seem to take alopecia in stride without much need for hair replacement. Instead, these young children often will use hair accessories. However, adolescents frequently have a very difficult time dealing with and adjusting to alopecia. Patients in this age group are already going through tremendous physical and psychological changes and adjustments, and dealing with one more change (alopecia) may be overwhelming. Alopecia can cause feelings of depression, loss of self-confidence, and possibly even humiliation in both men and women of all ages.

In addition to the loss of scalp hair, facial hair, such as eyelashes and eyebrows, may also be lost. Facial hair helps to give the face its boundaries and is important to facial expression. Alopecia can influence how a patient feels about their sexuality in the context of their having an impaired body im-

age. This article examines the physiology and pathophysiology of hair growth and loss of hair, the impact of varying aspects of alopecia on the patient with cancer, nursing and self-care interventions, and the resources available to patients and health care professionals.

PHYSIOLOGY OF HAIR GROWTH

The average healthy scalp has approximately 100,000 hairs, with an average daily hair loss of approximately 75 hairs/d. Normal scalp hair growth is cyclic in nature and occurs in three phases. The growth phase is the anagen phase; one follicle can produce 3 to 7 years of hair growth. The catagen phase is the involution or transitional period of the hair root; it lasts for only a few days. The telogen phase is the period of dormancy. This phase lasts approximately 3 months and ends when the old hair is shed and a new hair begins its growth cycle. Most hair follicles are in the growth phase at any given time.³ This is the phase that is affected by cancer chemotherapeutic drugs.

PATHOPHYSIOLOGY OF HAIR LOSS

Alopecia that results from cancer chemotherapy occurs in two different ways. When high-dose che-

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motherapy or doses of drugs that have a high affinity for epilation are given, the hair root is most frequently affected. This causes complete atrophy of the hair root and its bulb, thus causing the hair to fall out spontaneously or when it is combed, brushed, or washed. The second way in which alopecia occurs is by a narrowing of the hair shaft adjacent to the scalp. This narrowing tends to weaken the hair, causing it to break off at the narrowed region, thus causing thinning in various degrees. This second form of alopecia is associated most frequently with standard-dose chemotherapy. Both forms of chemotherapy-induced alopecia occur within 2 to 3 weeks of chemotherapy treatment (Table 1). In both of these kinds of alopecia, hair regrowth occurs within 1 to 2 months after completion or cessation of chemotherapy. Some patients experience hair regrowth while still receiving chemotherapy.⁴

NURSING INTERVENTIONS

Nursing practice standards for alopecia were published in 1985 by Didonato.⁵ These standards included nursing diagnoses for knowledge deficit, disturbance in self-concept, potential for altered

skin integrity, and potential for eye injury related to loss of eyelashes and eyebrows. Each nursing diagnosis included interventions, evaluation time, and expected patient outcomes. The reader is referred to suggested interventions in the self-care guide for patients with alopecia on page 298 of this issue. Two approaches have been taken to the investigation of appropriate nursing management interventions for alopecia: (1) hair preservation studies and (2) appearance and self-image restoration studies.

Hair Preservation

In 1984, Cline⁶ reviewed 15 nursing and medical studies on the use of scalp tourniquets and scalp hypothermia from 1966 to 1983 and concluded that the studies had many variations regarding scalp tourniquet pressure, cooling methods used, time schedules, type and dose of chemotherapy the patients received, lack of consistent randomization, and lack of standardized alopecia measurement tools. Other variables that may not have been considered include liver metastases and the pretreatment condition of patient's hair. Therefore, these interventions must be done with caution because of the limitations of the available research.

Lindsey⁷ also examined the literature on nursing interventions for alopecia from 1978 to 1983. Lindsey concluded that it was difficult to interpret the results across the nine studies examined and that the findings were often contradictory. Based on this literature review, the use of scalp hypothermia and tourniquets was not supported.

In a well-controlled but small ($n = 12$) study done in 1987 on the use of scalp hypothermia in patients receiving cyclophosphamide, methotrexate, and 5-fluorouracil, Parker⁸ found that all patients who received scalp hypothermia treatments demonstrated excellent hair retention. He concluded that scalp hypothermia may be beneficial in patients receiving this particular chemotherapy protocol.

In 1988, Giaccone et al⁹ studied the use of scalp hypothermia ($n = 39$) and found that 37% of patients had minimal or no hair loss compared with 100% alopecia in the control group. The investigators concluded that this treatment was moderately effective in preventing alopecia in patients receiving doxorubicin but that improvement in the technique of the treatment is needed to keep the temperature at an adequate and more stable level.

Table 1. Agents Associated With Alopecia

Antineoplastic agents associated with alopecia	
Actinomycin	
Bleomycin	
Cyclophosphamide	
Dactinomycin	
Danorubicin	
Doxorubicin	
Etoposide	
5-Fluorouracil	
Hydroxyurea	
Methotrexate	
Mitomycin	
Mitoxantrone	
Melphalan	
Paclitaxol	
Vinblastine	
Vincristine	
Agents potentially associated with alopecia	
Allopurinol	
Androgens	
Captopril	
Cimetidine	
Coumadin	
Gentamicin	
Heparin	
Ibuprofen	
Prednisone	
Propranolol	

Keller and Blausey¹⁰ discussed current hair preservation techniques and concluded that the encouragement of the use of hair preservation techniques during chemotherapy treatment must be considered carefully because of the possibility of scalp metastases developing later in the patient's disease process. They recommended that nursing interventions be directed toward helping the patient and family to adapt to alopecia by providing resources to replace the normal functions of the hair that is lost with alopecia: protection, contribution to self-image, and social influence in interactions with others.

Appearance and Self-Image Restoration

The influence of alopecia on body image was examined in 40 patients who were receiving chemotherapy.¹¹ Findings supported the hypothesis that there is a significant difference in the negative perceptions of body image among patients experiencing alopecia. The authors commented that nurses tend to become accustomed to the fact that patients are bald. Patients do not necessarily become accustomed to seeing themselves bald, even though only 40% of the patients who had alopecia wore head coverings.¹¹ These findings are contrary to a study done by Wagner and Bye¹² 5 years earlier. They found no statistically significant difference in body image and social activity between patients with hair loss and those who did not experience hair loss ($n = 77$) while receiving chemotherapy. The investigators concluded that the negative effect of hair loss may have been minimized by the process of adaptation.

Ehmann et al¹³ reported on an entrepreneurial nursing practice based on a survey of patients and nurses that assessed the needs of cancer patients who had alopecia. The survey findings indicated a need to educate patients and nurses about alopecia, to develop resources for headwear, and to determine the self-care concerns of patients with hair loss. Findings of the patient surveys also indicated that patients wanted nurses to take a proactive role in assisting them to manage alopecia. The authors found that many patients were unprepared when hair loss occurred. Proactive interventions that were recommended included snipping a lock of hair and providing a recent photograph to assist the hair-loss consultant to better meet the patient's needs for hair color and style when alopecia occurs. An instructional booklet entitled "Hair Loss

and Cancer Therapy"¹⁴ was developed and is being used by the American Cancer Society in some Look Good, Feel Better programs. Product fairs were suggested to help familiarize health care professionals with products and resources for their patients.¹³

A rehabilitation event in the form of a fashion show was developed to create a forum for women to learn how to maintain and restore their physical appearance during and after cancer treatment. This event brought together cosmetic specialists, prosthetics experts, hair and wig specialists, manufacturers of adaptive clothing, and others representing adaptations to various surgically induced changes (ostomies, blindness). Evaluations by participants in the event were favorable. Strategies such as this fashion event provided women with an opportunity to learn self-care techniques to restore body image and self-esteem.¹⁵

An in-depth, face-to-face interview study was conducted to examine the symbolic meaning of hair loss in the context of cultural beliefs and values.¹⁶ Findings of this study included a patient's loss of sense of control and power over his or her being, as well as changes in self-perception, self-esteem, and sense of self. Alopecia was symbolic of a loss of the self, which generated alienation from self and others. A patient's bare head denoted a lack of protection in the world, and because cancer is frequently interpreted as a failure, to be bald was to be regarded as a personal and societal health failure. The loss of hair also makes the diagnosis of cancer public by its visibility; the diagnosis might not be so obvious in other ways. It was concluded that the women in this study experi-

Table 2. Resources for Cancer Treatment-Related Alopecia

Resource	Availability
Advanced practice oncology nurses	Community inpatient or outpatient cancer centers
Look Good, Feel Better (program and video [no charge])	Local American Cancer Society chapters
Scarves: A Fashionable Alternative (well-done video by a cancer patient [\$33])	Phi Mu Foundation Video, 2237 N Shore Rd, Bellingham, WA 98226
Well Beauty: A New Beginning (a comprehensive handbook regarding image and appearance during cancer treatment [\$5])	BeautiControl Cosmetics, WHO Foundation, PO Box 816029, Dallas, TX 75381

enced much more than the loss of hair. Alopecia symbolized even more significant losses, such as a loss of their known self as experienced by the loss of inner integrity and identity.

CONCLUSION

The research literature on hair loss prevention continues to be inconclusive regarding the interventions of scalp hypothermia and scalp tourniquets. Too few studies exist with adequate duplication of methods and results to make a definitive recommendation for either of these therapies in everyday clinical practice. The major issue that must be considered with either of these methods is the possibility of scalp metastases. Limited information is available on alopecia in men.

Nurses can assist patients to cope with the ex-

perience of loss of hair and the potential trauma that alopecia may cause. Patient education, use of available resources, supportive listening, and therapeutic discourse are some strategies nurses may use. A variety of available resources are provided in Table 2. The impact of alopecia on self-image and quality of life in men and women is an area of cancer care that must be researched further by nurses to advance our understanding and treatment of this difficult iatrogenic side effect of cancer treatment.

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