

Practical Guidelines for Relief of Itch

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Itch is the major symptom in skin diseases with a variety of etiologies. Recent progress has been achieved in understanding the pathophysiology of itch in skin diseases. There are many topical therapies available for managing pruritus. Emerging therapies include dominant ceramide moisturizers, topical immunomodulators, low pH moisturizers, topical aspirin, and combinations of moisturizers with antipruritic compounds. Using these in conjunction with practical measures for itch reduction can benefit patients in the outpatient clinical setting.

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Objectives

This educational activity is designed for nurses and other health care providers who care for and educate patients regarding relief of itch. For those wishing to obtain CE credit, an evaluation follows. After studying the information presented in this article, the nurse will be able to:

1. Discuss the types of itch and the itch-scratch cycle.
2. List topical treatments for the relief of itch.
3. Describe other recommendations for relief of itch.

The leading symptom in patients with inflammatory skin diseases is pruritus (itch). Pruritus is uncomfortable to live with and can affect one's life considerably. The quality of life in patients with psoriasis, atopic dermatitis, and chronic idiopathic urticaria has been studied with regard to itch (Yosipovitch, Goon, Wee, Chan, & Goh, 2000; Yosipovitch, Goon et al., 2002; Yosipovitch, Ansari, Goon, Chan, & Goh, 2002). Many patients attribute poor sleep, depression, agitation, difficulty concentrating, and reduced sexual desire and function to itch. Treatment can be challenging, and often several modalities are attempted before total or even partial relief is achieved. In addition to using the oral and topical antipruritic medications available, there are some simple measures that patients can take to reduce the intensity of itch.

Dermatologic nurses will likely encounter many patients with pruritus who are desperate for relief. A brief overview of itch and topical approaches to its management is

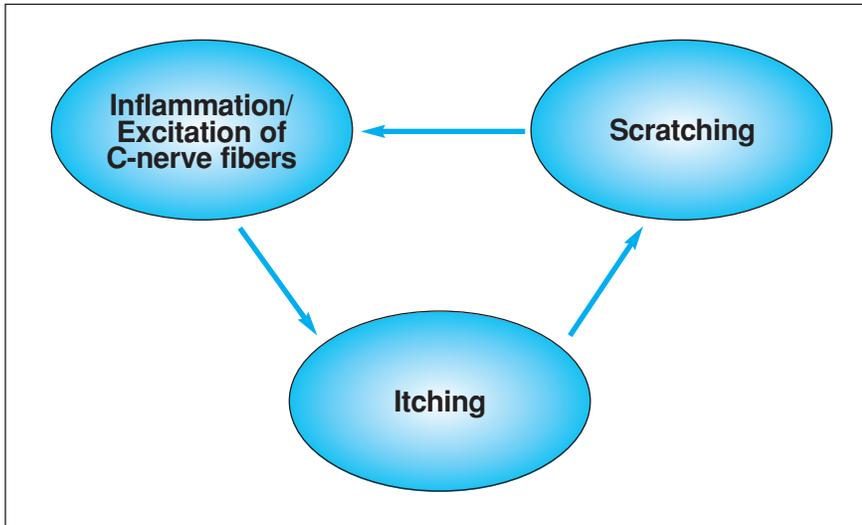
provided, as well as behavior modifications that patients may find helpful.

Types of Itch and the Itch-Scratch Cycle

Various types of itch have been described, including those related to skin disease, systemic disease, nerve fiber damage, and psychiatric or psychologic conditions. At any given time, patients may have pruritus caused by more than one of these sources. Certain types of itch may respond better than others to particular treatments. For example, pruritus related to dry skin will likely respond best to topical treatment with emollients. Itch related to a psychiatric condition, such as the delusion of parasitosis, will require oral therapy with an antipsychotic medication. Inflammatory skin diseases, such as atopic dermatitis, may respond best to a combination of oral and topical treatments.

Regardless of the underlying cause, itch evokes the behavior of scratching which increases inflamma-

Figure 1.
Itch-Scratch Cycle



Itch evokes the behavior of scratching which increases inflammation and causes excitation of nerve fibers, leading to more itching and scratching.

tion and stimulates nerve fibers, leading to more itching and scratching (Hagermark & Wahlgren, 1995). Perpetuation of the itch-scratch cycle (see Figure 1) alters the integrity of skin leading to barrier damage. Scratching also causes undesirable changes in skin such as lichenification and prurigo nodule formation. Successful treatment of itch requires interruption of this cycle.

Topical Treatments

A topical approach to relieving itch is particularly helpful for pruritus resulting from skin damage, inflammation, or dryness (Yosipovitch, 2003). Treatments commonly used include those that restore and preserve the barrier function of skin, such as emollients and low pH cleansers and moisturizers, as well as several additional topical applications. These include cooling agents, topical anesthetics, topical antihistamines, capsaicin, topical corticosteroids, and topical immunomodulators.

Emollients are the first-line ther-

apy for pruritus. While they are generally not considered antipruritics, they can help reduce itch, particularly in patients with xerosis (dry skin) (Ronayne, Bray, & Robertson, 1993). Xerosis is the most common cause of pruritus without an accompanying rash, and it can be associated with inflammatory skin diseases including atopic dermatitis, systemic diseases such as hypothyroidism, and with normal aging (Fleischer, Feldman, Katz, & Clayton, 2000; Millikan, 1996). Alterations in the barrier function of dry skin, such as stratum corneum abnormalities in keratinization, surface lipid content, and water content may contribute to the sensation of itch (Elias & Ghadially, 2002). Emollients help restore this altered barrier function. Water normally evaporates from the skin surface quickly, but emollients contain lipids and other substances which seal in moisture. They should be applied immediately after bathing to promote hydration of the skin by preventing transepidermal water

loss (Wahlgren, 1999). Not all emollients are equally effective in restoring barrier function. A recent study using a ceramide-dominant lipid-based emollient in patients with atopic dermatitis demonstrated that it significantly reduced the severity of disease when substituted for other moisturizers (Chamlin et al., 2002). Stratum corneum cohesion and hydration improved in these patients, which is evidence of barrier function restoration. While the study did not specifically evaluate pruritus, this type of emollient may be useful in treating itch related to xerosis and altered barrier function.

Low pH cleansers and moisturizers are useful in maintaining the acidic pH of the skin surface, which helps to preserve barrier function (Yosipovitch & Hu, 2003). The acidic skin surface is important in reducing skin irritation, which ultimately helps to reduce itch. High skin surface pH has been noted in xerosis, atopic dermatitis, and uremia (Yosipovitch & Maibach, 1996).

Cooling agents are over-the-counter preparations which usually contain menthol, camphor, or phenol (Yosipovitch, 2003). These substances stimulate nerve fibers which transmit the sensation of cold, thereby masking the itch sensation. Cooling agents are reasonably safe, although applying large amounts of alcohol-containing preparations can irritate the skin (Fleischer, 2000).

Topical anesthetics, including pramoxine and EMLA (eutectic mixture of local anesthetics) cream, have a documented antipruritic effect (Shuttleworth, Hill, Marks, & Connelly, 1988; Yosipovitch & Maibach, 1997). These are most useful for mild-to-moderate pruritus, and they may be combined with coolants to heighten effectiveness (Millikan, 1996).

Topical antihistamines, which block H₁-receptors, are effective as antipruritics, particularly when used for urticaria and insect bites.

Doxepin is perhaps the most effective topical antihistamine, although its use is limited by the occurrence of allergic contact dermatitis and sedation from percutaneous absorption (Drake, Fallon, & Sober, 1994; Shelley, Shelley, & Talanin, 1996).

Capsaicin is useful in relieving itch associated with many conditions, particularly intractable pruritus at a localized site (Hagermark & Wahlgren, 1995). It is the potent component of cayenne or red peppers, and acts by desensitizing nerve endings responsible for itch and pain (Yosipovitch, 2003). It may cause localized burning and stinging which limits its use as an antipruritic. This irritation subsides with repeated use of capsaicin, but patients may have difficulty maintaining compliance. It is helpful if patients initially use capsaicin four times per day to overcome the irritation, then they may reduce the number of daily applications. The topical anesthetic, EMLA cream, may be used in conjunction with capsaicin to reduce the initial irritation (Yosipovitch, Maibach, & Rowbotham, 1999).

Topical corticosteroids may indirectly provide relief of itch associated with inflammatory skin diseases such as atopic dermatitis, but they should not be used to treat generalized itch. Potential side effects of long-term application of topical corticosteroids include skin atrophy, cutaneous eruptions, and dryness (Fleischer, 2000). They are not intended for long-term use.

Topical immunomodulators inhibit T-lymphocyte activation thereby reducing inflammation and indirectly decreasing itch. Tacrolimus topical preparation significantly reduces inflammation and pruritus in patients with atopic dermatitis with little resultant toxicity (Fleischer, 1999). The role of tacrolimus as an antipruritic for other pruritic states is not clear.

There are some topical applica-

tions that are effective for itch reduction but are not commercially available in the United States. One of these is *topical aspirin*, which is effective in treating experimentally induced itch (Yosipovitch, Ademola, Lui, Amin, & Maibach, 1997) as well as itch associated with severe lichen simplex chronicus, a form of localized pruritus (Yosipovitch et al., 2001). Of note, orally administered aspirin does not reduce itch (Daly & Shuster, 1986). Also not available in the United States is a topical antipruritic derived from the Amazonian herbal medicine *sangre de grado*, which can reduce itch associated with insect bites (Miller et al., 2001). Naturally derived substances may have a role in managing pruritus in the future. Finally, in Europe, there is extensive use of moisturizers that are combined with topical antipruritics such as polidocanol and menthol. This approach is not commonly used in the United States.

The use of *wet-wrap dressings* in patients with refractory atopic dermatitis can reduce itching and promote healing (Bridgman, 1995). Emollients or corticosteroid dilutions are applied to affected skin

and then covered with occlusive wet dressings (Wolkerstorfer, Visser, De Waard van der Spek, Mulder, & Oranje, 2000). Side effects are minimal and this provides one more option for managing this disorder.

Miscellaneous Tips for Reducing Itch

As mentioned previously, keeping skin moisturized adequately can help reduce itch. Patients can be counseled to restrict their time in the shower or bath, to use cool or lukewarm rather than hot water which can aggravate itch, and to use mild cleansers in intertriginous areas only. Using a humidifier at home, especially in winter, can be helpful as well (Charlesworth & Beltrani, 2002). Patients who itch may profit from staying cool by wearing light clothing and trying to maintain a cool ambient temperature (Twycross et al., 2003). They should also attempt to avoid abrupt changes in environmental humidity. Avoiding hot or spicy foods and alcoholic beverages, which induce histamine secretion, may help as well. Finally, keeping fingernails short may prevent skin damage if patients cannot resist the urge to scratch (see Table 1).

Table 1.
Practical Measures to Reduce Itch

- Restrict time in the shower or bathtub.
- Bathe in cool or lukewarm water rather than hot water, which can be drying.
- Use mild cleansers.
- Use low pH cleansers and moisturizers.
- Avoid cleansers containing alcohol.
- Apply moisturizer immediately after bathing to help retain moisture from the shower/bath.
- Use a humidifier, especially in winter.
- Wear light clothing.
- Maintain cool ambient temperature.
- Avoid rapid changes in environmental humidity.
- Avoid hot or spicy foods.
- Avoid alcoholic beverages.



Conclusion

Dermatology nurses may be the first line of health care workers to interact with patients who present with the complaint of itching. By recommending the lifestyle modifications and topical preparations described here, nurses will provide patients experiencing pruritus with practical measures for reducing the intensity of itch. ❑

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