

Therapeutic Strategies for Pruritus Ani: A Comprehensive Review of Etiology-Based Interventions

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Abstract: Pruritus ani, defined as intractable itching in the perianal region, is a common and distressing clinical condition that severely impacts patients' quality of life. Its etiology is complex and multifaceted, involving local skin barrier dysfunction, infections, systemic diseases, pharmacological factors, and lifestyle-related triggers. This paper systematically reviews the therapeutic strategies for pruritus ani, focusing on etiology-based interventions to provide evidence-based guidance for clinical practice. The study first clarifies the classification and key etiological factors of pruritus ani, then elaborates on core therapeutic measures including basic perianal care, topical pharmacological treatments, systemic medications, and physical/surgical interventions. It emphasizes that accurate etiological diagnosis is the prerequisite for effective treatment, and basic care should be implemented throughout the therapeutic process.

Keywords: Pruritus ani; Therapeutic interventions; Etiology-based treatment; Perianal care; Clinical management

1. Introduction

Pruritus ani is a prevalent clinical complaint characterized by intense, recurrent itching in the perianal skin and mucous membranes. It affects individuals of all age groups, with a higher incidence in middle-aged and elderly populations, and a slight male predominance. Although not life-threatening, the persistent itching often leads to sleep disturbance, anxiety, depression, and social withdrawal, imposing a significant burden on patients' physical and mental health. The complexity of pruritus ani lies in its diverse etiology, which can be broadly divided into primary (idiopathic) and secondary types. Primary pruritus ani refers to cases where no specific underlying cause is identified, often associated with local skin barrier dysfunction and neurogenic hypersensitivity. Secondary pruritus ani accounts for the majority of clinical cases, resulting from various factors such as infections (fungal, parasitic, bacterial), anorectal diseases (hemorrhoids, anal fissures, fistulas), systemic conditions (diabetes mellitus, thyroid disorders, allergic diseases), pharmacological agents (antibiotics, laxatives), and lifestyle factors (irritating hygiene products, spicy diet, excessive moisture). In clinical practice, misdiagnosis and inappropriate treatment are common due to insufficient understanding of the etiological spectrum. For example, blind use of topical glucocorticoids without identifying the underlying cause may lead to adverse effects such as skin atrophy and drug resistance, while neglecting lifestyle modifications can result in recurrent symptoms. Therefore, there is an urgent need for a systematic summary of etiology-based therapeutic strategies to guide clinicians in formulating scientific and individualized treatment plans.

2. Core Therapeutic Strategies for Pruritus Ani

2.1 Basic Care and Lifestyle Interventions

Basic perianal care and lifestyle modifications are the foundation of pruritus ani treatment, applicable to both primary and secondary cases, and should be persisted throughout the therapeutic process.

Proper perianal hygiene is crucial. Patients should avoid excessive cleaning or scrubbing the perianal region. After defecation, mild, non-irritating cleansers or warm water should be used for gentle cleaning, followed by patting dry with soft toilet paper or a towel instead of rubbing. Alkaline soaps, scented wipes, and harsh detergents should be avoided to prevent further damage to the skin barrier.

Maintaining perianal dryness and ventilation is essential. Patients should wear loose, breathable underwear made of cotton or other natural fibers to reduce friction and moisture retention. Prolonged sitting should be avoided; regular standing or walking can promote local air circulation. For patients with excessive perianal moisture, absorbent pads can be used appropriately, but they should be replaced regularly to prevent bacterial growth.

Dietary adjustments play an important role in symptom control. Patients should reduce or avoid intake of spicy, irritating foods (such as chili, pepper, garlic), alcohol, coffee, and high-sugar foods. These substances can stimulate the intestinal tract and perianal mucosa, or alter the composition of feces, thereby exacerbating itching. Increasing dietary fiber intake can soften stool, reduce friction during defecation, and prevent constipation or diarrhea, which are important triggers of pruritus ani.

Breaking the itch-scratch cycle is critical. Persistent scratching can damage the skin barrier and lead to secondary infections. Patients should try to avoid scratching; if itching is intolerable, cold compresses with a clean towel can be used to relieve the sensation.

temporarily. For patients with sleep disturbance due to itching, appropriate sedatives or antihistamines can be used under medical guidance to improve sleep quality^[1].

2.2 Topical Pharmacological Treatments

Topical medications are the first-line treatment for pruritus ani, with the advantages of direct action on the lesion, rapid efficacy, and few systemic side effects. The choice of medication should be based on the etiological diagnosis.

Topical glucocorticoids are effective for inflammatory pruritus, such as primary pruritus ani or pruritus caused by contact dermatitis. They exert anti-inflammatory, anti-itch, and immunosuppressive effects by inhibiting the release of inflammatory mediators. Low-to-medium potency glucocorticoids (such as hydrocortisone, mometasone furoate) are preferred for long-term use to minimize adverse effects such as skin atrophy, telangiectasia, and pigmentation. High-potency glucocorticoids should be used only for severe cases and for a short duration (no more than 1 week).

Calcineurin inhibitors (such as tacrolimus ointment, pimecrolimus cream) are suitable for patients who are intolerant to glucocorticoids or have recurrent symptoms. They inhibit T-cell activation and the production of inflammatory cytokines, with no risk of skin atrophy. However, they may cause local burning, stinging, or redness in the early stage of use, which usually resolves gradually.

Antifungal agents are indicated for fungal-induced pruritus ani. Topical azole antifungals (such as clotrimazole, miconazole) or allylamine antifungals (such as terbinafine) can effectively inhibit fungal growth. The course of treatment should be sufficient (usually 2-4 weeks) to prevent recurrence, even if symptoms improve.

Local anesthetics (such as lidocaine ointment, pramoxine cream) can relieve itching by blocking nerve conduction. They are suitable for patients with severe itching that affects daily life or sleep. However, long-term use may lead to local skin numbness or drug resistance, so they should be used intermittently under medical supervision^[2].

2.3 Systemic Pharmacological Treatments

Systemic medications are mainly used for severe pruritus ani that is unresponsive to topical treatments or associated with systemic diseases.

Oral antihistamines are commonly used to relieve itching, especially for patients with allergic tendencies or nocturnal itching. First-generation antihistamines (such as chlorpheniramine, diphenhydramine) have sedative effects, which can improve sleep quality, but may cause drowsiness and dry mouth. Second-generation antihistamines (such as loratadine, cetirizine) have fewer sedative side effects and are more suitable for patients who need to maintain daytime alertness.

Oral glucocorticoids are reserved for severe cases of inflammatory pruritus ani, such as widespread contact dermatitis or severe primary pruritus ani. They have strong anti-inflammatory and anti-itch effects, but long-term use is associated with significant systemic side effects (such as gastrointestinal ulcers, osteoporosis, immunosuppression). Therefore, they should be used at the lowest effective dose for the shortest possible duration, under close medical monitoring.

Immunomodulators (such as cyclosporine, methotrexate) are used in rare cases of refractory pruritus ani that is unresponsive to other treatments. They regulate the immune system to reduce inflammatory responses, but have potential toxic effects on the kidneys, liver, and hematopoietic system. Regular monitoring of blood routine, liver function, and kidney function is required during treatment.

For pruritus ani caused by systemic diseases, the primary disease should be actively treated. For example, patients with diabetes should control blood glucose levels; those with thyroid disorders should receive appropriate hormonal therapy. Resolving the underlying systemic condition is the key to relieving pruritus ani^[3].

2.4 Physical and Surgical Treatments

Physical and surgical treatments are adjunctive therapeutic options for pruritus ani, mainly used for refractory cases that do not respond to conservative treatments.

Ultraviolet (UV) phototherapy is effective for chronic inflammatory pruritus ani. UVB or UVA irradiation can inhibit skin inflammation and reduce itching by regulating immune cell function and reducing the production of inflammatory mediators. The treatment should be performed under professional supervision to avoid excessive irradiation leading to skin damage or increased risk of skin cancer.

Infrared coagulation therapy is suitable for pruritus ani associated with mild to moderate hemorrhoids or perianal vascular hyperplasia. It uses infrared radiation to coagulate and shrink abnormal blood vessels, reducing perianal congestion, secretion, and inflammation, thereby relieving itching.

Surgical treatments are reserved for severe, refractory pruritus ani that has failed all conservative and physical treatments. Common surgical procedures include perianal skin resection and anal canal dilation. Perianal skin resection removes the affected skin with

impaired barrier function and neurogenic hypersensitivity, but may lead to complications such as wound infection, bleeding, or anal stenosis. Therefore, surgical intervention should be cautiously considered, and only performed after a thorough evaluation by experienced clinicians^[4].

3. Conclusion

Pruritus ani is a complex clinical condition with diverse etiologies, and its treatment requires a systematic, etiology-based approach. Accurate etiological diagnosis is the foundation of effective treatment, and basic perianal care and lifestyle modifications should be implemented throughout the therapeutic process. Topical medications are the first-line treatment, with the choice of agent tailored to the underlying cause. Systemic medications, physical treatments, and surgical interventions are reserved for severe or refractory cases. This review systematically summarizes the etiology-based therapeutic strategies and clinical management principles for pruritus ani, aiming to provide a practical reference for clinicians. By adhering to the logical framework of “etiology diagnosis → targeted intervention → long-term management,” clinicians can formulate individualized treatment plans, thereby improving the clinical outcomes of patients with pruritus ani.

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