

Scabies

Scabies is a highly contagious dermatological condition caused by *Sarcoptes scabiei*, a microscopic eight-legged mite. Scabies results in intense itching and a characteristic rash, often leading to secondary skin infections. The condition affects millions of people worldwide annually, regardless of age, race, or personal hygiene. Scabies is distinct from lice infestations, which are caused by different organisms. This condition, though not life-threatening, can significantly affect quality of life due to its pruritic nature and the potential for secondary bacterial infections. This paper outlines the pathophysiology, clinical manifestations, diagnostic methods, and treatment options for scabies.

Pathophysiology

The causative agent of scabies is the mite *Sarcoptes scabiei*, a microscopic ectoparasite that burrows into the upper layers of the skin. The female mite burrows into the epidermis to lay eggs, which hatch into larvae. These larvae travel to the skin surface, where they mature into adult mites. The immune response to the mite's presence, including its eggs and feces, causes intense pruritus and inflammation. It takes about four to six weeks for a person newly infected with scabies to exhibit symptoms, although re-infections lead to more immediate symptoms due to the body's sensitization.

The mites are attracted to warmth and skin odor, which explains their predilection for body folds such as the interdigital spaces, underarms, genitalia, and around the waistline. While scabies typically does not affect the face and scalp, it can involve these areas in infants or immunocompromised individuals. The condition is almost always transmitted through prolonged skin-to-skin contact with an infected person, though, in rare cases, transmission through contaminated clothing or bedding may occur.

Clinical Manifestations

The hallmark symptom of scabies is severe itching, particularly at night, due to an allergic reaction to the mites' presence and their secretions. The itching is often accompanied by the appearance of a rash, which in its early stages may present as small red bumps or pimples. As the condition progresses, the skin may become crusty or scaly, especially in more advanced cases. A characteristic feature of scabies is its tendency to affect skin folds and areas of friction, including:

- Between the fingers and toes
- Wrists

- Armpits
- Genitalia
- Buttocks and waistline
- Under rings or bracelets
- Around the nipples in women and on the penis in men

In immunocompromised individuals or infants, scabies can involve the face, scalp, and neck. Secondary bacterial infections, such as impetigo, can occur from scratching, which exacerbates the symptoms and may lead to further complications.

Diagnosis

Diagnosis of scabies is primarily clinical, based on the patient's history of exposure, characteristic symptoms, and physical examination. The classic presentation of intense pruritus, particularly at night, and the identification of typical lesions in common areas are strong diagnostic clues. To confirm the diagnosis, skin scrapings may be taken from the affected area to examine under a microscope for the presence of mites, eggs, or feces. Dermoscopy and skin biopsy may be employed in difficult cases.

Treatment Options

The primary goal of scabies treatment is to eradicate the mites, relieve itching, and prevent reinfestation. Treatment modalities can be classified into topical and systemic therapies.

➤ **Topical Treatments:**

- **Permethrin 5% cream (Elimite)** is the first-line treatment for scabies. It is applied over the entire body, from the neck to the soles of the feet, and left on for 8 to 14 hours before being washed off. A single application has a cure rate of approximately 95%, although a second application a week later may be necessary for persistent infestations.
- **Crotamiton 10% cream** is another topical treatment, although it is less commonly used than permethrin.
- **Sulfur ointment (5-10%)** is a historical treatment for scabies, particularly for young children or pregnant women, though its efficacy is considered inferior to newer agents.

➤ **Systemic Treatments:**

- **Ivermectin (oral)** is an alternative treatment that has gained attention due to its effectiveness and convenience, especially for widespread or crusted scabies. It is particularly useful in outbreak settings or in individuals who are immunocompromised. A typical dose is 200 µg/kg, repeated after one to two weeks.

- **Lindane** is an older systemic treatment that was once widely used but is now less favored due to its neurotoxic potential, especially in infants and young children. It is used in refractory cases when other treatments fail.
- **Adjunctive Treatments:**
 - **Antihistamines** (e.g., diphenhydramine) can be used to manage itching. Topical steroids may also help alleviate inflammation and discomfort.
 - **Bacterial infections** resulting from scratching can be treated with topical or oral antibiotics (e.g., dicloxacillin, cephalexin).

Prevention and Control Measures

Scabies is highly contagious, and effective prevention strategies are crucial to control outbreaks. Individuals who have been in close contact with an infected person should be treated even if they do not exhibit symptoms. Personal items such as towels, bedding, and clothing used within 72 hours of exposure should be washed in hot water to prevent reinfestation, although scabies mites do not survive for long outside the human host.

In institutional settings such as nursing homes, schools, and hospitals, prompt identification and treatment of scabies cases, along with thorough cleaning of shared spaces, are essential to prevent outbreaks. Fumigation or pesticide use is generally unnecessary and ineffective, as the mites only survive in a human host.

Latest Advancements and Future Directions

Research into scabies treatments is ongoing, with new therapies being investigated. Recent studies have focused on the use of oral ivermectin as a more convenient treatment for scabies, particularly in large outbreaks. Additionally, there is growing interest in developing vaccines against *Sarcoptes scabiei* to provide a long-term preventive solution.

Conclusion

Scabies is a common yet distressing condition caused by the mite *Sarcoptes scabiei*. Although it is not life-threatening, the intense itching and potential for secondary bacterial infections can significantly impact a patient's quality of life. The development of highly effective topical treatments like permethrin and oral treatments such as ivermectin has significantly improved management outcomes. Early diagnosis, thorough treatment, and preventive measures are essential to control scabies outbreaks and prevent reinfestation.

References

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