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Review Paper

Understanding Scabies: A Comprehensive Overview of Management and Treatment

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ABSTRACT

Scabies is a highly contagious skin infestation caused by the Sarcoptes scabiei mite, leading to intense itching and rashes as the body's immune system reacts to the mites and their byproducts. This condition can affect anyone, though it is more common in environments with overcrowding, poor hygiene, and limited healthcare. Scabies spreads primarily through prolonged skin-to-skin contact, but it can also be transmitted via contaminated personal items, especially in more severe cases like crusted (Norwegian) scabies. The symptoms typically include itching, burrows, and red bumps, with more severe forms presenting as crusty lesions in immunocompromised individuals. Diagnosis is often based on clinical symptoms, but tests such as skin scraping and dermoscopy can confirm the presence of the mites. Treatment involves topical agents like permethrin cream or oral ivermectin, and environmental sanitation is key to preventing reinfestation. For effective management, it's crucial to treat close contacts and disinfect personal items. Early diagnosis, timely treatment, and proper hygiene practices are essential to break the transmission cycle and ensure recovery.

INTRODUCTION

Scabies is a widespread and extremely contagious skin infestation that is brought on by Sarcoptes scabiei var. hominis, a human itch mite. This minute parasite burrows into the epidermis' topmost layer, where it lays its eggs and thrives. It causes an immunological reaction that results in a rash and severe itching. The body reacts allergicly to the mites, their eggs, and their excrement, which causes itching that is frequently worst at night. People of all ages, races, and socioeconomic backgrounds are susceptible to scabies, although it is more common in places with congested housing, inadequate sanitation, and little access to medical care. Direct, persistent skin-to-skin contact with an infected individual is how it is spread. Although less frequent, it can occasionally also be

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transmitted by contaminated clothing, furniture, or bedding. In settings including schools, jails, nursing homes, and refugee camps, outbreaks are common. Small red papules, burrows (thin, wavy lines on the skin), and severe itching are all part of the clinical presentation. The wrists, elbows, fingers, waist, and genital area are frequently infested. Scabies can manifest more severely as crusted (Norwegian) scabies in babies and immunocompromised people, which is characterized by thick skin crusts that are home to a high number of mites. Although skin scrapings and dermoscopy can help confirm the diagnosis, clinical symptoms are frequently used to make the diagnosis. Topical drugs like permethrin cream or oral meds like ivermectin can be used to treat scabies. To contain outbreaks and stop reinfestation, prompt diagnosis and treatment are essential, as are close contact management and personal item disinfection.

Mechanism of scabies

Sarcoptes scabiei var. hominis, a mite, infests the skin as part of the scabies process. After coming into touch with human skin, the female mite burrows into the stratum corneum, which is the epidermis' outermost layer, creating slender, wavy tunnels. The female deposits eggs inside these burrows, and the eggs hatch into larvae in three to four days. In roughly 10–14 days, the larvae develop into adult mites, completing the cycle. The body's immune reaction to mite antigens, such as their saliva, eggs, and feces (scybala), is what causes the main symptoms of scabies, such as the extreme itching, rather than the mites themselves. Four to six weeks following the initial infestation, this hypersensitive reaction usually manifests. Due to earlier sensitization, symptoms may manifest in previously infected persons within 1-4 days. At night, the itching is at its worst, and a rash with tiny red papules, vesicles, and burrows is also present. These immune-mediated responses may result in scratching, which may develop to impetigo and other secondary bacterial infections. A more severe type of scabies called crusted (Norwegian) scabies can develop in immunocompromised people. Thousands to millions of mites may be present on the skin in this form, causing thick scaling and hyperkeratotic crusts that are often widespread without much itching because of a weakened immune system. In general, the pathogenic mechanism of scabies consists of both host immunological responses to mite-derived components and direct mite activity (reproduction and burrowing). In order to stop the mite's life cycle and reduce symptoms, prompt identification and treatment are essential.

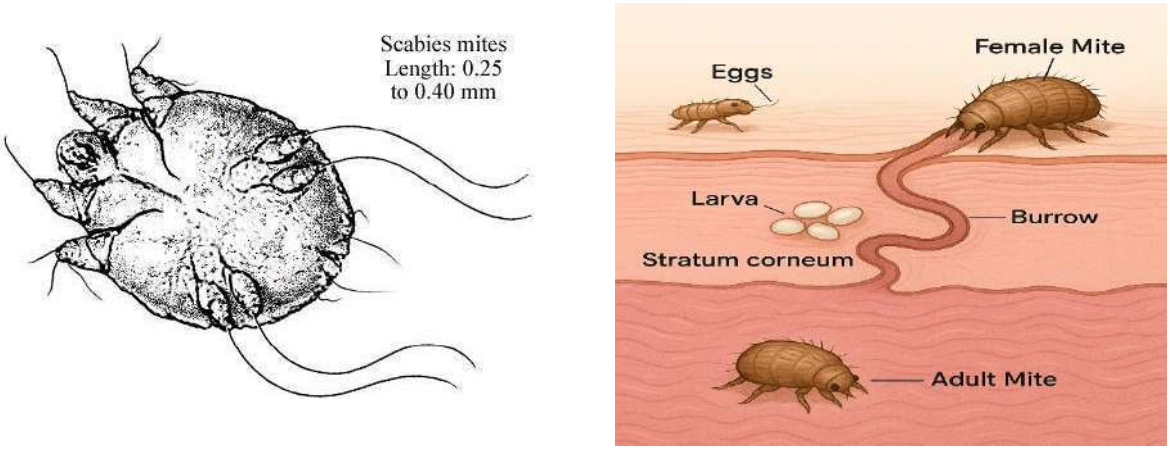

Figure 1 scabies mites and mechanism

Signs and Symptoms of Scabies :

The actual presence of the mites and the body's immune reaction to them both contribute to the variety of distinctive signs and symptoms that characterize scabies. Severe itching is the most prevalent and early symptom, and it usually gets worse at night. The body's allergic response to the mites, their eggs, and their waste products is what causes this itching. Burrows, which are thin, wavy, grayish-white, or skin-colored lines on the skin's surface, are one of the telltale symptoms of scabies. The vaginal area, armpits, waist, buttocks, wrists, elbows, and crevices between fingers are among the warm, damp parts of the body where these burrows are usually discovered. The scalp, face, neck, and palms of newborns and young children may also be impacted. Additional symptoms include tiny red zits or blisters that can resemble pimples or insect bites and may show up in clusters. These lesions may become crusted, excoriated, or secondary infected as a result of frequent scratching, which can result in problems such as impetigo.

Figure 2 small red bumps or blisters

Crusted (Norwegian) scabies is a more severe variant that can arise in older people or those with impaired immune systems. Despite having thick, scaly crusts that are alive with hundreds of mites, it may, ironically, cause little to no irritation because of a compromised immune system. Although sensitization may cause symptoms to manifest in previously infected persons within days, symptoms usually manifest 4–6 weeks following the initial infestation. Early detection and intervention are essential to stop problems and future spread.

Transmission of Scabies:

Mostly, scabies is spread by direct skin-to-skin contact with an infected individual over an extended period of time. This means that the infection is typically not transferred by casual contact, such a quick hug or handshake. In contrast, transmission usually happens through close contact, such as between members of the same household, sexual partners, or those residing in crowded settings like prisons, nursing homes, dorms, and refugee camps. Additionally, shared personal objects including clothing, towels, and bedding can spread scabies, particularly in cases of crusted (Norwegian) scabies, when the mite burden is rather high. Because skin crusts

containing live mites shed in these situations, indirect transmission becomes more likely. It's crucial to remember that mites can live for 24 to 36 hours outside of the human body, and in cases of crusted scabies, they may live for even longer. In order to control outbreaks, it is crucial to practice good hygiene and disinfect infected goods. Since scabies symptoms may not show up for weeks after the first infection, an infected individual may unintentionally transmit the mites during this time. Therefore, even if they do not exhibit symptoms, close contacts of an infected individual should also receive treatment concurrently to stop reinfestation and further dissemination. In conclusion, scabies is transmitted by direct contact and, less frequently, by contaminated objects. In order to disrupt the cycle of transmission, prompt identification, treatment, and hygiene measures are essential.

Diagnosis of Scabies

Scabies is mostly diagnosed clinically based on the physical examination results and typical symptoms. Important symptoms include severe itching, particularly at night, and a common rash with vesicles, papules, or burrows that are frequently found in particular places including the buttocks, waist, genital area, wrists, elbows, and fingers. The scalp, face, palms, and soles may also be affected in newborns and young children. A thorough medical history is crucial, especially if the patient has recently had direct contact with someone who is exhibiting symptoms or has lived in a busy area. A crucial diagnostic hint may come from family members or close acquaintances who exhibit same symptoms. Several diagnostic methods can assist confirm the presence of scabies mites, eggs, or fecal pellets (scybala), even though clinical indications are frequently sufficient.

1. **Skin Scraping:** The most popular technique is scraping the skin in the afflicted areas and looking at the particles under a microscope. The diagnosis is confirmed if mites, eggs, or excrement are found to be present.
2. **Dermoscopy:** The distinctive "delta wing jet" indication, a triangular structure that symbolizes the mite at the end of a burrow, can be seen using a handheld dermoscope. This non-invasive method works well for finding mites and burrows.
3. **Adhesive Tape Test:** To find mites or eggs, clear adhesive tape is applied to the skin and then viewed under a microscope.
4. **Ink Test:** Ink is put to the skin and then removed using an earlier technique, leaving a black path in the burrows.
5. Due to the quantity of mites, diagnosing crusted scabies may be simpler; but, without thorough examination, the illness may be mistaken for psoriasis or eczema. Finally, to stop scabies from spreading and to start treatment for the patient and their close contacts as soon as possible, an early and precise diagnosis is essential.

Management and Treatment of Scabies

Eliminating the mites, reducing symptoms, treating close contacts, and avoiding reinfestation are the main goals of scabies management and treatment. In order to prevent transmission and lower the risk of consequences such secondary infections, prompt and adequate treatment is crucial.

1. Topical Treatments:

- **Permethrin 5% cream** is the most often recommended and successful topical medication. Before being washed off, it is applied from the neck down, including between the fingers and toes and under the nails. It is then kept on for 8 to 14 hours. Treatment for the face and scalp may also be

necessary for immunocompromised people, the elderly, and babies.

Figure 3 Permethrin 5% cream

- Alternative topical agents include **benzyl benzoate**, **sulfur ointment (5–10%)**, **crotamiton**, and **malathion**, especially in cases where permethrin is contraindicated or not available.

2. Oral Medications:

- **Ivermectin** is an effective oral antiparasitic used especially in **crusted (Norwegian) scabies**, in institutional outbreaks, or when topical therapy fails. The typical dosage is 200 µg/kg, taken as a single dose and repeated after 7–14 days.
- Ivermectin is not routinely recommended for pregnant women or children weighing less than 15 kg, unless the benefits outweigh the risks.

Scabies (caused by Sarcoptes scabiei)		• The most often recommended and successful topical treatment is 5% permethrin lotion. It is applied from the neck down, covering the spaces between the fingers and toes and beneath the nails, and it is kept on for 8 to 14 hours before being washed off. Treatment for the scalp and face may also be necessary for immunocompromised people, the elderly, and babies.

3. Symptomatic Relief:

- Due to the immune system's ongoing reaction to dead mites and their debris, severe itching (also known as post-scabetic itch) may linger for two to four weeks following successful treatment.
- Topical corticosteroids and oral antihistamines may help reduce skin irritation and itching.

4. Environmental Control:

- Any personal belongings that have been used within the last 72 hours, such as clothes, bedding, and towels, should be cleaned in hot water and dried at high heat. Plastic bags should be used to keep non-washable items sealed for a minimum of 72 hours.
- Reducing environmental contamination can be achieved by vacuuming carpets, floors, and upholstered furniture.

5. Treating Close Contacts:

- To prevent reinfestation, all members of the household, sexual partners, and intimate physical contacts must receive treatment at the same time, regardless of their symptoms.

Comprehensive recovery and a decreased chance of reoccurring outbreaks are ensured by a combination of efficient treatment, environmental hygiene, and contact management.

CONCLUSION

hominis and leads to severe itching, skin eruption, and secondary infection from the body's response to the mites and their waste products. Although the

condition is not life-threatening, it has a significant impact on quality of life and may result in complications if not treated especially in high-risk groups like infants, the elderly, and immunocompromised patients. Early diagnosis on the basis of clinical presentation, aided by inexpensive diagnostic aids such as skin scraping or dermoscopy, is essential for early treatment. The treatment is effective and easily accessible, with permethrin cream and oral ivermectin being the most widely used drugs. Just as important are steps to control close contacts and decontaminate personal belongings and the living environment to avoid reinfestation and break the transmission cycle. Since scabies is very contagious and can cause outbreaks in crowded environments, public health measures should focus on awareness, early detection, and mass treatment where appropriate. Complete management treatment of asymptomatic carriers and environmental sanitation is necessary to guarantee successful elimination and avoid repeated outbreaks. In conclusion, with proper education, diagnosis, and treatment protocols, scabies is a manageable condition. However, long-term control and prevention rely on a coordinated approach that includes healthcare providers, caregivers, and communities working together to reduce transmission and improve skin health outcomes for affected individuals

REFERENCES

1. Kramer, M. S., & Moye, J. (2007). Scabies: Epidemiology, Diagnosis, and Treatment. American Family Physician, 75(9), 1461-1466.
2. Chosidow, O. (2006). Scabies and Pediculosis. The Lancet, 367(9524), 1718-1727.
3. Burgess, I. F. (2014). Scabies: A Review of the Disease and Its Treatment Options. International Journal of Dermatology, 53(11), 1382-1388.
4. Williamson, S. L., & Costa, A. (2012). Crusted Scabies: A Clinical Review and Management Guide. Dermatology Clinics, 30(4), 705-710.
5. McKenna, M. T., & Peters, R. M. (2008). Scabies in Public Health: A Global Perspective. Epidemiology and Infection, 136(3), 400-408.
6. Hay, R. J., & Steer, A. C. (2010). Scabies and Its Burden in Sub-Saharan Africa. International Journal of Dermatology, 49(7), 713-719.
7. Kramer, M. S., & Moye, J. (2007). Scabies: Epidemiology, Diagnosis, and Treatment. American Family Physician, 75(9), 1461-1466.
8. Chosidow, O. (2006). Scabies and Pediculosis. The Lancet, 367(9524), 1718-1727.
9. Burgess, I. F. (2014). Scabies: A Review of the Disease and Its Treatment Options. International Journal of Dermatology, 53(11), 1382-1388.
10. Williamson, S. L., & Costa, A. (2012). Crusted Scabies: A Clinical Review and Management Guide. Dermatology Clinics, 30(4), 705-710.
11. McKenna, M. T., & Peters, R. M. (2008). Scabies in Public Health: A Global Perspective. Epidemiology and Infection, 136(3), 400-408.
12. Hay, R. J., & Steer, A. C. (2010). Scabies and Its Burden in Sub-Saharan Africa. International Journal of Dermatology, 49(7), 713-719.
13. Stewart, M. A., & Dunlop, K. (2009). Scabies and Its Management in the Elderly Population. Journal of Clinical Dermatology, 23(4), 467-472.
14. Heukelbach, J., & Feldmeier, H. (2006). Scabies: A Worldwide Problem of the Public Health System. Dermatology, 212(2), 80-83.

15. Johnston, S., & Jackson, M. (2013). Diagnostic Techniques for Scabies and Implications for Treatment. Clinical Microbiology and Infection, 19(9), 805-810.
16. Dover, L., & Berth-Jones, J. (2011). Scabies: Diagnosis and Management. Clinical Dermatology, 29(6), 705-713.
17. Norris, S. L., & Kitching, T. R. (2008). Clinical Management of Scabies in Immunocompromised Patients. Clinical Infectious Diseases, 47(7), 821-823.
18. Cohen, J., & Pardo, R. (2012). Management of Scabies: A Review of Treatment Guidelines and Clinical Evidence. Journal of the American Academy of Dermatology, 66(2), 1-9.
19. Elder, G. H., & McConnell, A. A. (2014). The Role of Environmental Hygiene in Scabies Control. Journal of Infection and Public Health, 7(4), 314-318.
20. Feldmeier, H., & Heukelbach, J. (2014). Scabies: A Global Problem in Dermatology. Parasites & Vectors, 7(1), 1-5.
21. Chang, M., & Elnahly, A. (2015). Diagnostic and Therapeutic Approaches to Crusted Scabies. International Journal of Dermatology and Venereology, 30(3), 271-277.
22. Winkler, J. R., & Balbierz, M. (2011). Scabies in Pediatric Populations: Diagnosis, Treatment, and Prevention. Pediatric Dermatology, 28(6), 703-707.
23. Browne, N. M., & Whitehead, K. A. (2013). The Impact of Scabies on Global Health: Epidemiology and Control Measures. Global Health Action, 6, 19258.
24. Sullivan, K. L., & Thompson, H. L. (2007). Dermoscopy in Scabies Diagnosis: A New Non-invasive Diagnostic Tool. Journal of Clinical Dermatology, 25(2), 254-258.
25. Pitt, D. S., & O'Sullivan, C. (2010). Managing Scabies in Institutional Settings: Control and Prevention Guidelines. Infection Control & Hospital Epidemiology, 31(3), 327-332.
26. Caldwell, M. W., & McCreary, M. L. (2016). A Review of Ivermectin Use for Treating Scabies in Institutional Settings. American Journal of Health-System Pharmacy, 73(5), 350-358.

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