Original Article

SCABIES AND THE IMPACT OF SCABIES ON HUMAN LIFE

Togaev Akhror, Abdullaev Farrukh, Norbaev Nurmamat, Onarov Nodir, Normurodov Fazliddin, Choriev Muzaffar, Sodikov Boymurod, Sultanov Akram

Termez branch of Tashkent Medical Academy., Uzbekistan.

Email: togayevaxror1990@gmail.com

DOI: 10.47750/pnr.2022.13.S06.453

Abstract

In this article, the causes of scabies, its symptoms, its treatment, in which cases it is necessary to consult a doctor, and a lot of medical information about it.

Keywords: scabies, sarcoptes scabies, symptoms, causes of scabies, impetigo, staphylococci, streotococci, pathophysiology..

INTRODUCTION

Scabies is a contagious skin condition resulting from the infestation of a mite. The Sarcoptes scabiei mite burrows within the skin and causes severe itching. This itch is relentless, especially at night. Skin-to-skin contact transmits the infectious organism therefore, family members and skin contact relationships create the highest risk. Scabies was declared a neglected skin disease by the World Health Organization (WHO) in 2009 and is a significant health concern in many developing countries. Infested individuals require identification and prompt treatment because a misdiagnosis can lead to outbreaks, morbidity, and an increased economic burden. Scabies is an itchy skin rash caused by a tiny burrowing mite called Sarcoptes scabiei. Intense itching occurs in the area where the mite burrows. The need to scratch may be stronger at night. Scabies is contagious and can spread quickly through close person-to-person contact in a family, childcare group, school class, nursing home or prison. Because scabies spreads so easily, health care providers often recommend treating the entire family or any close contacts. Scabies is easily treated. Medicated skin creams or pills kill the mites that cause scabies and their eggs. But itching may not stop for many weeks after treatment.

Symptoms

Scabies symptoms include:

- Itching, often severe and usually worse at night
- Thin, wavy tunnels made up of tiny blisters or bumps on the skin

Scabies is often found in the skin folds. But scabies can appear on many parts of the body. In adults and older children, scabies is most often found:

- Between the fingers and toes
- In the armpits
- Around the waist
- Along the insides of the wrists

- On the inner elbows
- On the soles of the feet
- On the chest
- Around the nipples
- Around the belly button
- Around the genitals
- In the groin area
- On the buttocks

In infants and young children, common sites of scabies usually include the:

- Fingers
- Face, scalp and neck
- Palms of the hands
- Soles of the feet

If you have had scabies before, symptoms may start within a few days of exposure. If you've never had scabies, it can take as long as six weeks for symptoms to start. You can still spread scabies even if you don't have any symptoms yet.

When to see a doctor

Talk to your health care provider if you have any symptoms of scabies.

Many skin conditions, such as dermatitis or eczema, also can cause itching and small bumps on the skin. Your health care provider can find the exact cause of your symptoms so that you receive the right treatment. Antihistamines or nonprescription lotions may ease itching. But they won't get rid of the mites or their eggs.

Causes

A tiny, eight-legged mite causes scabies. The female mite burrows just under the skin and makes a tunnel where it lays eggs. The eggs hatch, and the mite larvae travel to the surface of the skin, where they mature. These mites can then spread to other areas of the skin or to the skin of other people. Itching is caused by the body's allergic reaction to the mites, their eggs and their waste. Close skin-to-skin contact and, less often, sharing clothing or bedding with a person who has scabies can spread the mites. Pets do not spread scabies to humans. The scabies mites that affect animals do not survive or reproduce in people. However, coming in contact with an animal that has scabies may cause brief itching if the mite gets under the skin. But within a few days, the mite will die. So treatment isn't needed.

Complications

Scratching too much can break your skin and cause an infection, such as impetigo. Impetigo is an infection on the skin's surface that's caused most often by staph bacteria (staphylococci) or sometimes by strep bacteria (streptococci).

A more severe type of scabies, called crusted scabies, may affect certain people, including:

- Young children
- People with developmental disabilities
- People with weakened immune systems, such as those with HIV or lymphoma, or people who have had organ transplants
- People who are very sick, such as people in hospitals or nursing facilities
- Older people in nursing homes

Crusted scabies makes the skin crusty and scaly, and affects large areas of the body. It's very contagious and can be hard to treat. Quick treatment with both a prescription pill and a skin cream is needed.

Typically, someone with scabies has about 10 to 15 mites. But someone with crusted scabies may have millions of mites. Yet itching may not occur or may be mild.

Prevention

To prevent scabies from coming back and to keep the mites from spreading to other people, take these steps:

- Wash all clothes and linen. Heat kills the mites and their eggs. Use hot, soapy water to wash all clothing, towels and bedding used in the last three days before beginning treatment. Dry with high heat. Dry-clean items you can't wash at home.
- Starve the mites. Place items you can't wash in sealed plastic bags and leave them in an out-of-the-way place, such as your garage, for a week. Mites die after a few days without food.
- Clean and vacuum. It's a good idea to clean your home to prevent scabies from spreading. This is especially true for people with crusted scabies. Vacuum furniture, carpets and floors to remove scales and crusts that may have scabies mites.

Epidemiology

The estimated worldwide prevalence of scabies is 300 million infected individuals each year. It is a significant health concern in many developing countries and was declared a neglected skin disease by the World Health Organization in 2009.

Scabies is highly prevalent in the following geographic regions: Africa, South America, Australia, and Southeast Asia. The high prevalence correlates with poverty, poor nutritional status, homelessness, and inadequate hygiene.

It is more common among children and young adults. Cases in these countries are associated with significant morbidity due to complications and secondary infections. These may include abscesses, lymphadenopathy, and post-streptococcal glomerulonephritis.

Pathophysiology

Adult female mites dig burrow tunnels 1 to 10 millimeters long within the superficial layers of the epidermis and lay 2 to 3 eggs daily. The mites die 30 to 60 days later, and the eggs hatch after approximately 2 to 3 weeks. It merits mentioning that not all treatment options can penetrate the eggs stored within the skin.

If an infestation occurs, papules may present within 2 to 5 weeks. These papules are tunnel or comma-shaped with length ranging from a few millimeters to 1 centimeter. Typically, infestations occur under thin skin in areas such as interdigital folds, areolae, navel region, and the shaft of the penis in men.

Histopathology

A punch biopsy is rarely needed to diagnose scabies. Scabies is often a clinical diagnosis. The biopsy usually will not obtain a mite, as there are often very few mites over the body (with the exception of crusted scabies). The mite and the egg may be seen in the reticular dermis if you are lucky, along with an inflammatory infiltrate. The epidermis will often reveal significant scale and crust along with a serous exudate, neutrophils, and eosinophils. Scabies outbreaks in industrialized countries may occur sporadically or as institutional outbreaks in schools, nursing homes, long-term acute care (LTAC) facilities, hospitals, prisons, retirement homes, and areas of overcrowding.

Evaluation

Scabies is classically diagnosed by visulization of the rash as well as patient history. Scabies can be diagnosed by visualizing mites in skin scrapings in the stratum corneum. This method often misses the correct diagnosis because of the high chance of sampling error.

Other methods, such as the non-invasive videodermatoscopy, can be utilized during the physical examination. This technique has not yet become mainstream throught the Dermatology community. Videodermatoscopy uses a video camera connected to digital systems and equipped with optic fibers, lenses with up to 1000x magnification, and a light source or immersion liquid. This technique is not available in the vast majority of offices in the United States. Videodermatoscopy allows the inspection of the skin surface up to the superficial dermis and thus can identify burrows, mites, eggs, larvae, and feces. When compared to traditional skin scrapings, videodermatoscopy has several advantages. First, its noninvasive nature is better accepted by children, sensitive patients, and those who may refuse skin scrapings. It is also easy and quick to perform in comparison to the traditional microscope method. Moreover, the noninvasive technique minimizes the risk of accidental infections from blood-transmissible agents such as human immunodeficiency virus (HIV) or hepatitis C virus (HCV). Videodermatoscopy also is useful in evaluating patients to follow up after completion of therapy, demonstrating the presence of viable mites in cases of persistent infection or unsuccessful treatment. Videodermatoscopy is seldom used in clinical practice currently.

Dermoscopy, also called dermatoscopy, is similar to videodermatoscopy but is handheld and does not require connection to a computer. Dermoscopy is now commonly used in most Dermatology offices in the United States. Dermoscopy has a lens with up to 10x magnification. With a dermatoscope, it is possible to observe the burrow structure in scabies, also known as the "jetliner trail." The burrows are also poorly visualized in dark skin or hairy areas.

If the diagnosis is ambiguous, a skin biopsy can be used to confirm the diagnosis. In addition to biopsy, a newly developed serologic test can aid in the diagnosis of scabies. Currently, this test is not commonly used in the United States.

Treatment / Management

There are various treatments available for scabies. Evidence shows that when medications are used as directed, the efficacy of standard treatment options is comparable. These include topical permethrin, topical crotamiton, and systemic ivermectin. Adverse reactions are rare to these medications.

Topical permethrin 5% cream is effective and widely used. The cream is typically applied once a week for two weeks (total of 2 treatments). However, this treatment is occasionally associated with scabies resistance, poor patient compliance, and rare allergic reactions.

Oral ivermectin is another option, although the United States Food and Drug Administration has not approved its use for scabies treatment. It is administered to individuals ten years and older and given one time. An additional dose is given two weeks later if symptoms persist. Two doses of ivermectin are scabistatic; the second treatment kills mites that have hatched since the first treatment. Oral ivermectin is recommended due to convenience, ease of administration, favorable side effect profile, and safety. Rates of compliance are higher with this treatment modality than with topical permethrin, and the tablet form of ivermectin reduces the likelihood of misuse or inadequate application, as may occur with the topical permethrin. Systemic ivermectin is superior to topical permethrin when treating scabies outbreaks. Ensuring adequate treatment is especially pertinent to the treatment of individuals living in close proximity, such as in homeless shelters, prisons, and healthcare facilities.

Other options are topical lindane, 5% precipitated sulfur, malathion, and topical ivermectin.

Treatment choices may be limited in those with S. scabiei resistance or with limitations due to cost, availability, or potential toxicity, especially among pregnant women and children.

Treatment failure / recurrence is common, and isolating the cause can help prevent further infection and limit outbreaks in communities. Reasons for treatment failure include not treating close contacts simultaneously, not decontaminating beddings and clothes at the time of treatment, and nonadherence to the treatment regimen. Treatment failure of crusted scabies can result from ivermectin-resistant Sarcoptes mites. Moxidectin is the recommended therapy for known ivermectin-resistance.

Enhancing Healthcare Team Outcomes

Scabies is spread easily through skin to skin contact. Contact precautions and isolation of hospitalized individuals are vital to protecting healthcare workers and other patients in a healthcare facility. Management of scabies requires an interprofessional team approach. If an interprofessional team member suspects an infection with Sarcoptes scabiei, they should alert other team members so that steps can be taken to prevent the spread.

Recognizing scabies infection and being able to diagnose this condition is crucial for patient care. One study showed that 45% of patients diagnosed with scabies, were actually suffering from other conditions such as eczema, papular dermatitis, irritant dermatitis, or contact dermatitis.

Education about scabies and its presentations is essential for all providers coordinating care, including primary care, emergency medicine, urgent care, pharmacy and even dermatology. Pharmacists are aware of topical creams for scabies treatment and must be able to compound with other ingredients to effectively manage the infection and pruritis. Medication compliance should be encouraged because in most cases, failures are due to non-adherence to the treatment regimen. Nurses will likely be on the front-line for monitoring treatment adherence, providing further patient and family education, and determining other people who will need treatment. Finally, the nurse practitioner should educate the patient on how to eradicate scabies in the home; this is vital to ending the cycle of infestation.

Scabies is a significant problem in public health, and one common reason for treatment failure is non-adherence to the treatment regimen. Additionally, improvements in living conditions, avoidance of overcrowding, and avoidance of sharing personal care products can decrease the likelihood of persistence of this pest. While some individuals do obtain relief from symptoms, recurrences are frequent. The level of interprofessional collaboration outlined above is critical to treatment success and optimal outcomes.

REFERENCES

1. Swe PM,Christian LD,Lu HC,Sriprakash KS,Fischer K, Complement inhibition by Sarcoptes scabiei protects Streptococcus pyogenes - An in vitro study to unravel the molecular mechanisms behind the poorly understood predilection of S. pyogenes to infect mite-induced skin lesions. PLoS neglected tropical diseases. 2017 Mar [PubMed PMID: 28278252]
2. Micali G,Lacarrubba F,Verzì AE,Chosidow O,Schwartz RA, Scabies: Advances in Noninvasive Diagnosis. PLoS neglected tropical diseases. 2016 Jun [PubMed PMID: 27311065]
3. Kandi V, Laboratory Diagnosis of Scabies Using a Simple Saline Mount: A Clinical Microbiologist's Report. Cureus. 2017 Mar 19 [PubMed PMID: 28435762]
4. Ignoring the "Itch": The Global Health Problem of Scabies., Stamm LV,Strowd LC,, The American journal of tropical medicine and hygiene, 2017 Dec [PubMed PMID: 29016295]
5. Vasanwala FF,Ong CY,Aw CWD,How CH, Management of scabies. Singapore medical journal. 2019 Jun; [PubMed PMID: 31243462]
6. Anderson KL,Strowd LC, Epidemiology, Diagnosis, and Treatment of Scabies in a Dermatology Office. Journal of the American Board of Family Medicine : JABFM. 2017 Jan 2 [PubMed PMID: 28062820]
7. Dressler C,Rosumeck S,Sunderkötter C,Werner RN,Nast A, The Treatment of Scabies. Deutsches Arzteblatt international. 2016 Nov 14 [PubMed PMID: 27974144]
8. Werbel T,Hinds BR,Cohen PR, Scabies presenting as cutaneous nodules or malar erythema: reports of patients with scabies surrepticius masquerading as prurigo nodularis or systemic lupus erythematosus. Dermatology online journal. 2018 Sep 15; [PubMed PMID: 30677831]