

2016 UK National Guideline on the Management of Scabies

Clinical Effectiveness Group British Association for Sexual Health and HIV

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Introduction and Methodology

Scope and purpose

This is a review of the previous 2007 BASHH guideline on Scabies. This guideline is aimed primarily at over 16 year olds presenting to Level 3 sexual health clinics in the UK. However the recommendations in this guideline are appropriate for all health care settings.

What is new in this guideline

- Management of Scabies in HIV positive patients
- Atypical Scabies

Methods

Article titles and abstracts were reviewed and, if relevant, the full text article obtained. Priority was given to randomised controlled trial and systematic review evidence, and recommendations made and graded on the basis of best available evidence. (Appendix 1)



NICE has accredited the process used by the British Association of Sexual Health and HIV to produce its Clinical Effectiveness Group guidance. Accreditation is valid for 5 years from 2015. More information on accreditation can be viewed at www.evidence.nhs.uk

For full details on our accreditation visit: www.nice.org.uk/accreditation

Search Strategy

This document was produced in accordance with the guidance set out in the CEG's document 'Framework for guideline development and assessment' at <http://www.bashh.org/guidelines>. Following the production of the updated framework in April 2015, the GRADE system for assessing evidence was adopted and the draft recommendations were regarded.

Five reference sources were used to provide a comprehensive basis for the guideline:

1 Medline, Pubmed and Embase, searched from January 2002 to July 2015 with the term scabies in the title or abstract

2 Cochrane Collaboration Databases [www.cochrane.org];

3 www.cdc.gov/parasites/scabies/

4 NICE Guidelines cks.nice.org.uk

5 IUSTI guidelines www.iusti.org

Piloting and Feedback

The first draft was produced by the writing group and then circulated to BASHH CEG for review using the AGREE appraisal tool. The second draft of the guideline is being piloted on BASHH website for wider consultation and also simultaneously reviewed by the patient/public panel. The final draft will be presented to the CEG for review and piloting in their clinics.

Aetiology

Scabies is caused by the human itch mite *Sarcoptes scabiei var hominis*. The lifecycle of the sarcoptes lasts for 4-6 weeks. Mites burrow into human skin and lay their eggs, which later hatch and grow into adults. The female lays about 25 eggs and dies. The eggs develop into adults after moulting in 10-15 days. Less than 10% of the eggs develop into mature adults. The average number of mites in a person with an initial infestation is 10-15 and about half this number with a subsequent infestation.^{1,2}

Transmission

Transmission occurs from person to person through close skin contact. In young adults, scabies is frequently sexually acquired. Transmission of infestation through casual contact such as a hand shake is unlikely.³ The mites can live off a host for 24-36 hours.^{4,5}

Fomite transmission is uncommon but can occur in those wearing heavily contaminated clothing or using a bed recently occupied by an infested person.² It is more likely to occur with crusted scabies due to the greater number of mites present^{4,6,7} and because mites can survive longer for up to 7 days.⁸

Clinical Manifestations

Classical scabies

The main clinical feature of scabies is intense generalised pruritus that is usually worse at night. The pruritus is due to a delayed type-IV hypersensitivity reaction to the mite, and mite products (faeces and eggs.)^{1,9}

Symptoms begin 3-6 weeks after primary infestation, but occurs earlier at 1-3 days in a re-infested person probably due to prior sensitization to the mite and mite products. Scabies is therefore infectious before the rash develops.^{10,11,12}

A lack of a history of itching does not exclude scabies (e.g. in young babies; neurological conditions with decrease /loss of sensation.) History of itching in family members or close contacts concurrently or in the recent past strengthens the diagnosis of scabies.

The most common lesions are erythematous papules, often excoriated, seen in a characteristic distribution over the interdigital webspaces, sides of fingers, under finger nails, flexor aspects of wrists, extensor aspects of elbows, anterior and posterior axillary folds, around nipples in women, penis and scrotum in men, around the umbilicus, upper medial aspect of thighs, buttocks, sides and back of feet. The back is relatively not involved and the head is spared except in children. Palms and soles are also affected in the elderly and in infants and young children.

The pathognomonic lesion is the burrow, which is a linear intra-epidermal tunnel produced by the moving mite and appears as short wavy greyish/ white threadlike elevations of 2-10 mm in length. Burrows are difficult to find if there is excoriation or secondary eczematization.

Nodular lesions may also be seen especially on the penis and scrotum in men, buttocks, groin, and the axillary regions and these are intensely pruritic.

They tend to persist after treatment and are thought to result from a hypersensitivity reaction to the mite. Urticarial lesions may rarely occur.^{13,14} Presence of itchy papules and nodules on the penis and scrotum are indicative of sexually acquired scabies.

Crusted scabies

Crusted scabies (*Scabies crustosa*, Norwegian scabies) occur in immunocompromised states: e.g. in AIDS, leprosy, lymphoma, those receiving systemic or potent topical steroids, organ transplant recipients¹⁵ or in the elderly and in physically incapacitated persons or in patients

with Down syndrome.¹⁶ However a fair proportion (about 40%) have no identifiable risk factor suggesting possible genetic susceptibility.¹⁷

It is characterized by erythematous scaly crusted lesions that can be malodorous and associated with fissuring and can affect any part of the body including the face and scalp. However itching may be mild or absent. Scabies contracted by a healthy person from a patient with crusted scabies is no different from classical scabies.¹⁶

Sepsis is a frequent complication as fissures associated with this condition provide an entry point for bacteria.¹⁸

Scabies in patients with HIV Infection.

Unlike classical scabies, immunosuppressed patients may present with crusted scabies^{19,20,21,22} and atypical papular lesions on the face and scalp, psoriasiform lesions, and generalized pruritus with few lesions. Pruritus may be mild due to impaired immune response.²³ Patients may present with classical scabies and, as their CD4 count falls, subsequently develop crusted scabies with little or absent pruritus.

Atypical scabies:

i) Animal scabies

Humans can rarely contract scabies from pet dogs (canine scabies caused by *Sarcoptes scabiei* var *canis*) and cats (feline scabies caused by *Notoedres cati*.) It differs from classical scabies in that the incubation period is shorter, the distribution of lesions is confined to sites of contact with the animal and burrows are not seen. It does not cause extensive infestations in humans unless the animal remains untreated. The lesions are self-limiting as these mites do not reproduce in human hosts, rarely surviving for more than a few days⁶ and human to human transmission does not occur.²⁴ Therefore, no treatment other than treatment of the infested animal is required.

ii) Scabies Incognito

This refers to the altered clinical picture seen following use of topical steroids and consists of widespread atypical papular lesions that may mimic other generalized forms of eczema. Symptoms are masked but patient remains infectious.¹

Diagnosis

Scabies should be suspected in any patient with a clinical history of itch, worse at night, affecting other family members or close contacts. Diagnosis can be made based on the clinical distribution and appearance of the skin lesions.

Definite diagnosis relies on microscopic identification of the mites, eggs or faecal pellets (scybala) from the scrapings of the skin burrows with a scalpel blade and placing the specimen on a glass slide with 10% potassium hydroxide.²⁵ This dissolves excess keratin (particularly seen in crusted scabies) and thereby permits better visualization of the mite and mite products.

Alternatively, a drop of mineral oil is applied to the selected lesion or on the scalpel blade. The entire lesion is scraped away with the scalpel blade. The oil and the skin scrapings are then transferred to the microscopic slide and examined under the microscope²⁶

Burrow ink test (BIT) allows identification of the burrows. Apply black or blue ink to the suspected papule and then wipe off with alcohol to remove surface ink. A positive BIT occurs when a characteristic dark zigzagged line running across and away from the lesion due to ink tracking down the mite burrow.^{27, 28}

Other methods used for diagnosis of scabies include in vivo techniques such as dermoscopy, optical coherence tomography and detecting *S.Scabiei* DNA from cutaneous scales using PCR or ELISA.^{29, 30}

Differential diagnosis

Scabies frequently imitates other skin diseases. It is important to have a high degree of suspicion to recognise symptoms and signs of scabies.

Differential diagnosis for scabies include: Impetigo, folliculitis, papular urticarial, atopic dermatitis, contact dermatitis, dermatitis herpetiformis, psoriasis, seborrhoeic dermatitis, pityriasis rosea, secondary syphilis and lymphoma and pseudolymphoma (if scabies presents with nodules).

Complications

Secondary bacterial infection due to *Staphylococcus aureus*, group A β -haemolytic streptococci, or peptostreptococci³¹ resulting in impetigo, folliculitis, furunculosis, ecthyma, and abscess.

Secondary eczematization due to constant scratching, and due to irritant effects of topical medication can occur. Other reported complications include glomerulonephritis³² and leucocytoclastic vasculitis.^{33,34}

Management

Treatment

In the UK, four scabicides have been used for the treatment of scabies: permethrin 5% cream, malathion aqueous 0.5% liquid, benzyl benzoate 25% emulsion and oral ivermectin [topical ivermectin is not available in the UK.]^{1,35,36}

Benzyl benzoate is generally no longer recommended as it is not as effective as Permethrin or Malathion and may cause skin irritation.³⁷ Single dose oral ivermectin is less effective than permethrin.^{38,39} There have been no controlled trials for malathion.¹

General advice

Bedding, clothing, and towels used by infested persons or their household, sexual, and close contacts during the previous four days before treatment should be decontaminated by washing at high temperature (60°C) and drying in a hot dryer, by dry-cleaning, or by sealing in a plastic bag for at least 72 hours^{5,9}. Scabies mites generally do not survive more than 72 hours days away from human skin.

Patients must be given information about scabies, including proper application of topical scabicides.

Recommended regimens

Permethrin 5% cream.³⁷ (Level of evidence 1b A)

- apply to the whole body from the chin and ears downwards paying special attention to the areas between the fingers and toes and under the nails. The exceptions to this are people who are immunosuppressed, the very young and elderly people where the insecticide should be applied to the whole body including the face and scalp.
- apply the treatment to cool dry skin (i.e. not after a hot bath)⁶.
- allow the lotion or cream to dry before dressing. Clean clothing should be worn after treatment.
- Wash the cream off after 8 to 12 hours.
- reapply 1 week later.
- if hands are washed with soap within 8 hours of application, they should be treated again with cream.³⁸
- larger patients may require up to two 30-g packs for adequate treatment.

Malathion 0.5% aqueous lotion³⁷ (Level of evidence IV C)

- can be used if permethrin cream is inappropriate [e.g. allergy to chrysanthemums.]
- apply to the whole body from the chin and ears downwards paying special attention to the areas between the fingers and toes and under the nails. The exceptions to this are

people who are immunosuppressed, the very young and elderly people where the insecticide should be applied to the whole body including the face and scalp.

- apply the treatment to cool dry skin (i.e. not after a hot bath.)
- allow the lotion or cream to dry before dressing. Clean clothing should be worn after treatment.
- wash the treatment off after 24 hours.
- reapply 1 week later
- if hands are washed with soap within 24 hours, they should be retreated.³⁷
- **Note: For scabies, manufacturer recommends application to the body but not necessarily to the head and neck. However, it is advised that application should be extended to the scalp, neck, face, and ears.**³⁷

Adverse events include pruritus, erythema, and stinging; rarely rashes and oedema.³⁷

Alternative regimen

- **Ivermectin** in a dose of 200 mcg/kg 2 weeks apart in patients weighing >15kg (Level of evidence Ib A) ⁴⁰
- available on a named patient basis.
- it is used in the treatment of crusted scabies that does not respond to topical treatment alone ^{38,39,41}
- adverse events associated with ivermectin include rashes, vomiting and abdominal pain
- human data suggest low risk in pregnancy and limited data in breastfeeding suggest that it is probably compatible.⁴²

Crusted scabies

Combination regimen of topical permethrin cream once daily for 7 days, then twice weekly until cure plus oral ivermectin (200 mcg/kg) on days 1,2,8,9 and 15.⁴⁰ Patients with severe infestations may require additional doses on day 22 and 29.^{17,43}

Patients with crusted scabies should be isolated immediately and barrier nursing procedures instituted. Rooms used by patients with crusted scabies should be thoroughly cleaned/vacuumed and bedding should be washed and dried using high heat cycles.⁴⁰ All household members and other potentially exposed persons should be treated at the same time as the infested person.

Post scabetic itch

- Itching may continue for up to two weeks after successful treatment for scabies^{1, 40}, but treatment failure should be suspected if new burrows appear or if the itching persists for longer than 2-4 weeks after the last application of scabicide.
- Treat post-scabetic itch with crotamiton 10% cream (2-3 times a day) or, if the scabies mites have definitely been eradicated, with topical hydrocortisone 1%. Night time use of a sedative antihistamine (e.g. chlorpheniramine or hydroxyzine) may help with sleep and reduce scratching.
- Dry skin/eczema can be treated with emollients.

Allergy

Treatments to which there is known hypersensitivity should be avoided.

Pregnancy and breastfeeding

- For women who are breastfeeding or pregnant, should be treated with **permethrin 5% dermal cream**.
- Alternatively use **Malathion 0.5% aqueous liquid** if permethrin is not appropriate (e.g. the person has an allergy to chrysanthemums).
- Breastfeeding mothers should remove the liquid or cream from the nipples before breastfeeding, and reapply treatment afterwards.
- Where possible, oral antihistamines should be avoided during pregnancy, especially during the first trimester. If an oral antihistamine is required to control pruritus during pregnancy, chlorpheniramine is the antihistamine of choice.

Sexual partners

- Current sexual partners as well as members of the household and those that have had close personal contact should be examined and treated at the same time⁴⁰
- Contact tracing of partners from the previous one month should be undertaken⁴⁰

Follow-up

- No clear evidence exists as to optimal follow-up but is not generally required for people with classical scabies.
- Pruritus persisting more than 2 weeks after treatment may reflect treatment failure, reinfection or drug allergy to anti-scabetics.²⁵ The appearance of new burrows at any stage post-treatment is indicative of a need for further therapy, although in re-infection, symptoms of pruritus may recur before typical burrows have developed.

- Consider retreatment after 2 weeks of initial treatment for those who are still symptomatic or if live mites can be demonstrated. An alternative regimen is recommended in such cases.

Resistance

Of increasing concern is the issue of emerging drug resistance in scabies, which has been documented for both permethrin and ivermectin.^{44,45,46}

HIV Infection

Patients who have uncomplicated scabies and also are infected with HIV should receive the same treatment regimens as those who are HIV negative. HIV-infected patients and others who are immunosuppressed are at increased risk of crusted scabies, for which ivermectin has been reported to be effective in uncontrolled studies involving only a limited number of participants.

Cost of treatment:

| Medication For one treatment | BNF Listed price | Trust price |
|--|-----------------------------|--------------------|
| Permethrin 5% cream 30g | £5.71 | |
| Malathion 0.5% aqueous cream 100mL 100 ml (50mL x 2packs) | £7.14 | |
| Ivermectin 3mg x 4 tabs | Nil given | £ 40 (approx) |

Consider doubling of cost for repeat application after one week

Auditable outcomes

Percentage of patients with scabies offered STI screen: Target 100%

Percentage of patients offered written information: Target 100%

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Statement of Editorial Independence

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Conflicts of Interest

None

BASHH CEG Composition

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