

European Guideline for the Management of Scabies

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Introduction and aetiology

Transmission of the mite *Sarcoptes scabiei* generally occurs by protracted direct body contact; although in crusted scabies, transmission also occurs via infected clothing or bedding.

Mites are capable of burrowing into the stratum corneum of a contact person within 1 hour. Mite antigens including excrement may also generate a hypersensitivity reaction.

Diagnosis

Clinical

- The main symptom is itch, which usually develops 2-6 weeks after infestation. In a re-infected person the itch recurs within 1-4 days.
- Examination reveals characteristic silvery lines with a mean length of 0.5cm, which may be seen in the skin where the mites have burrowed. Typical sites include between the fingers and on the sides of hands and feet, on wrists, extensor surface of the elbow, female nipples, penis and scrotum, anterior axillary folds.
- "Hypersensitivity" to mites may induce urticarial papules or nodules, especially in the genital area
- Eczema and impetigo are consequences of itch
- The clinical manifestations of crusted scabies are described below

Indication for testing

This is important in, at least, the index patient before taking far-reaching epidemiological measures e.g. epidemic in an institution

- Direct microscopic examination of a potassium hydroxide mount of a superficial epidermal skin sample ("skin snip") obtained with a scalpel from the end of a burrow
- Experienced clinicians may probe a burrow with a needle to obtain material for direct microscopic examination
- Direct examination of skin for mites using an epiluminescence stereomicroscope has also been described (1).

Management

Information, explanation and advice for the patient

- Patients should be advised to avoid close contact until they and their sexual partners have completed treatment (level of evidence IV; grade C recommendation)
- Patients should be given a detailed explanation of their infestation together with clear written information (level of evidence IV; grade C recommendation)

Indication for routine STI examinatio

- History of risk behaviour for STI in sexually active patients with scabies eg concurrent partners or new sexual partner in the previous 3 months.HIV test is recommended.

Indications for therapy

- Characteristic clinical findings
- High-risk contacts: persons with protracted or frequent skin contact (e.g. via the hands) should be treated whether or not they have symptoms
- Low-risk contacts: persons with indirect contact (e.g. via bedding) only require treatment in cases of crusted scabies (see below)

Recommended regimens

Efficacy, tolerability and cost guide the specific choice of therapy, although there have also been concerns raised about the possibility of resistance emerging to available antiscabietics (2).

The quality of evidence comparing one treatment with another is poor (3). Lindane is no longer included as the European Medicines agency (EMA) withdrew its license in 2008.

Eight randomized controlled trials of antiscabietic treatment have been published since the previous guideline (4-13).

- Permethrin cream 5% (once for 8-14 hours) is effective(9,14), well-tolerated(15, 16), but expensive (level of evidence Ib; grade A recommendation)
- Benzyl benzoate lotion (10 to 25%) is also cheap and effective, but requires application on more than one day (2 to 3 applications) (11). (level of evidence III; grade B recommendation)
- Ivermectin is not licensed in most countries, but can be given orally as a repeated dose (200 microg/kg) 2 weeks apart in patients weighing more than 15 kg. Comparisons with lindane and benzyl benzoate give conflicting results with regard to efficacy (4-6, 11, 17, 18) (level of evidence Ib; grade A recommendation). Although Ivermectin has been associated with deaths when given to

debilitated patients (19, 20), this has not been borne out in the more recent studies. There are no controlled trials of topical ivermectin.

- A foam-based preparation of synergized pyrethrins is available in some countries. One study suggested this may be as effective as permethrin (7) (level of evidence II; grade B recommendation)
- Sulfur (6-33%) is the oldest antiscabietic in use and comes in various preparations (8, 21). It appears to be effective, is very cheap and safe, but stains clothing and requires application on three successive days (level of evidence Ib; grade A recommendation)

Addendum on treatment procedure

- Treatment instructions: patients should be provided with written instructions, which should include the amount of drug to be applied. Apply lotion/cream to the entire skin including the scalp, all folds, groin, navel, external genitalia and the skin under the nails. In adults with classical scabies, treatment of the face is controversial. In babies, the skin of the face should also be treated (transmission is possible from contact by breastfeeding). If the patient applies the lotion/cream him/herself, the hands should not be washed after application. If the lotion/cream is applied by someone without scabies, that person should wear (medical) disposable gloves. If there is any doubt as to whether or not a patient will apply the lotion/cream according to instructions, a second application is recommended one week later.
- Hygienic measures: after completion of treatment, use fresh bedding and clothing. Potentially contaminated clothes and bedding should be washed at high temperature (>50° C) if possible, or may be kept in a plastic bag for up to 72 hours, because mites separated from the human host die within that time.

Pregnancy/lactation

- Permethrin, benzyl benzoate (applied twice), and sulfur (applied thrice) appear to be safe in pregnancy although the evidence is limited (22) (level of evidence III; grade B recommendation)

Follow-up

- It should be explained to patients that after treatment some itching might persist for several weeks, especially in atopic individuals.
- Symptomatic relief may be obtained from an emollient
A test of cure (direct microscopy, not using potassium hydroxide, for living/moving mites) may be performed, especially in crusted scabies, but is usually not required
- Sexual partnerSexual partners from up to 6 weeks prior to the onset of symptoms should be traced
- Sexual contact should be avoided until both partners have completed treatment

Crusted scabies

Crusted scabies is seen in immunocompromised persons e.g. AIDS patients (23, 24), and those confined to long-term institutions.

- Clinical signs typically consist of hyperkeratotic/crusted plaques, papules and nodules, particularly on the palms of the hands and the soles of the feet, although areas such as the axillae, buttocks and scalp may also be affected. Isolated genital plaques have been described (25). Occasionally there may be psoriasiform or eczematous lesions with fine, powder-like scaling and redness, generally on a dry skin. Diagnosis by direct microscopy of skin samples is straightforward in view of the large numbers of mites and eggs in the scales.
- Topical treatment is with several applications of permethrin 5% cream to the entire skin including the head. This may be alternated with keratolytic therapy e.g. emollients or bathing. Combinations of topical treatments with oral agents such as ivermectin have been used in some outbreaks (26). (level of evidence III; grade B recommendation)

- Because of the increased risk of transmission to contact persons, strict isolation should be observed until cure is achieved. Active epidemiological measures to ensure treatment of all contacts are necessary.

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Search Strategy

Evidence for this guideline was provided by review of the Medline/Pubmed, Embase, Google, Cochrane Library, and relevant guidelines up to July 2009. A Medline/Pubmed and Embase search was carried out from January 1981 to August 2009 using the term scabies in the title or abstract. A search of the Cochrane Library included Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effects and Cochrane Central Register of Controlled Trials. The 2001 European Guideline for the Management of Scabies was the main source for the present guideline. In addition, the following guidelines were reviewed: 2006 US Centers for Disease Control and Prevention (CDC) Sexually Transmitted Disease Guidelines and 2007 British Association for Sexual Health and HIV (BASHH) National Guideline for the Management of Scabies.

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Appendix I: Levels of evidence and grading of recommendations

Level of evidence

- Ia Meta-analysis of randomised controlled trials
- Ib At least one randomised controlled trial
- IIa At least one well designed controlled study without randomisation
- IIb At least one other type of well designed quasi-experimental study
- III Well designed non-experimental descriptive studies
- IV Expert committee reports or opinions of respected authorities

Grading of recommendation

- A Evidence at level Ia or Ib
- B Evidence at level IIa, IIb or III
- C Evidence at level IV

Appendix 2: declarations of interest

Gordon Scott and Michel Janier – none

Olivier Chosidow reports consulting fees from Laboratoire Pierre Fabre and lecture fees from Pohl Boskamp