Recommended management of head lice and scabies

Maureen Connolly MRCPI, MRCGP

Patient education is vital in treating head lice and scabies to ensure successful eradication and to reduce the development of resistance. Our Drug review considers the available treatment options and some recent advances, followed by a review of the prescription data and sources of further information.

Head lice (Pediculus humanus capitis) are bloodsucking, wingless insects that live on the hairs of the head and feed on the scalp. The adult head louse is 3–4mm in length and grey white in colour. The female louse has a life-cycle of one month during which she can lay up to 7–10 eggs per day. The eggs are laid about 1cm from the scalp surface and are strongly bound to the individual hairs with a glue-like material (see Figure 1). The egg capsules are called ‘nits’ and these empty shells are left cemented to the hair shaft once the louse hatches 8–10 days later. The presence of ‘nits’ does not confirm infestation as nits can remain in the hair for weeks after successful eradication of the lice.

Head lice mainly affect schoolchildren between the ages of 4 and 11 but can be found in any age, sex, race or social class. Head-to-head contact is the most common means of transmission, but spread may also occur through the sharing of hair brushes or accessories.

Patients can present with scalp itching or irritation, most commonly affecting the occipital or postauricular areas. Individuals usually present with less than 20 adult lice on the scalp but up to 5 per cent of patients can have more than 100 on presentation. Sometimes scalp excoriations become secondarily infected and cervical lymphadenopathy is found. Diagnosis is made by identification of adult lice and/or eggs seen attached to the hair.

Patients should be treated only if a live louse has been found. All family members should be checked for head lice using wet or dry detection combing. It is important that all affected family members are treated simultaneously.

Detection combing is the procedure in which wet hair is systematically combed to check for the presence of head lice and is an effective and reliable method to confirm head lice infestation as only live lice need to be treated.

Head lice treatments
The choice of treatment depends on the preferences of the patient/parent and on the treatment history. Three types of
treatments are available: chemical insecticides, wet combing and preparations that work by physical means of action (physical insecticides).1

However, due to increasing resistance to chemical insecticides many more physical insecticides have become available and these come in a variety of formulations such as lotions, gels or mousse.

Chemical insecticides
Worldwide resistance to several topical insecticides is growing, with head lice resistance to permethrin (Lyclear Creme Rinse) and malathion becoming an increasing problem throughout the UK.2

There is no clear consensus as to what defines the best treatment for eradication of head lice and thus management used to depend on resistance patterns to various insecticides throughout different geographical areas. However, over recent years several insecticides have been withdrawn from the UK market. The most recent BNF3 advises that malathion can be used for head lice but that resistance has been reported. It also mentions that permethrin is active against head lice but the formulation of the current product makes it unsuitable for the treatment of head lice.3

If using an insecticide the head lice infestation should be treated with a lotion or liquid formulation only if live lice are present. Shampoos are best avoided as they are too diluted to be effective. Patients with eczema and asthma should be treated with aqueous rather than alcoholic preparations, so it is best to use a liquid in an aqueous base rather than a lotion in an alcoholic base for these patients.

Patients should be made aware that the various myths regarding head lice should be dispelled. For example, the following statements are all untrue: head lice are only associated with dirty hair; only children can get head lice; an itchy scalp indicates infection; children should be kept away from school if infected; the remaining presence of nits or eggs still indicates active infestation; asymptomatic family members should be treated ‘just in case’; or that lice can jump from one head to another. In fact, head lice can affect anyone’s hair, are transferred by crawling from head-to-head and only individuals with live lice should be treated.

Pyrethroids Permethrin is absorbed across the insect cuticle. It acts on the nerve cell membranes of the parasites causing disruption of the sodium channel current, delayed repolarisation and paralysis of the nerves in the exoskeletal muscle that allow lice to breathe. This causes the lice to suffocate.4

Permethrin has exhibited very low mammalian toxicity. When applied topically less than 2 per cent is absorbed percutaneously and it is rapidly broken down, conjugated and excreted as inactive metabolites, primarily in the urine. Permethrin has residual activity and is supposed to remain on the hair for up to two weeks, but as it is not 100 per cent ovicidal two treatments one week apart are recommended to obtain higher cure rates. Unfortunately resistance to permethrin has developed throughout the UK with a failure rate as high as 87 per cent in one study.2

Lyclear Creme Rinse is the only currently licensed product for head lice in the UK that contains permethrin, but due to its short contact time of 10 minutes it is not an appropriate treatment option and cannot be recommended.

Malathion In 1971 malathion was launched, heralding a subsequent decrease in the prevalence of head lice.5

Malathion is an organophosphorous insecticide that acts through cholinesterase inhibition. It irreversibly binds to and inhibits the function of acetylcholinesterase causing spastic paralysis and death. Malathion is considered safe in pregnancy and breast-feeding. Unfortunately widespread resistance has been reported throughout the UK5 with one study quoting a 64 per cent failure rate.2

In 2007 a UK-based assessor-blinded randomised controlled trial compared 4 per cent dimeticone lotion (Hedrin, see below) with 0.5 per cent malathion liquid for head louse infestation. In this study a worst-case intention-to-treat analysis found 4 per cent dimeticone was significantly more effective than malathion, with 30 out of 43 (70 per cent) participants cured using dimeticone compared with 10 out of 30 (33 per cent) using malathion (p<0.01).7

Malathion is used as a 0.5 per cent liquid in aqueous solution and the manufacturer recommends that it is applied to the dry hair and scalp, allowed to dry naturally and washed out after 12 hours. The treatment should be repeated one week later to kill any newly hatched lice. However, the liquid should not be used more than once a week for three consecutive weeks as the likelihood of head lice eradication is not increased.

Available chemical insecticides are outlined in Table 1.

Wet combing
Bug-busting involves combing of wet hair with a fine-toothed comb to remove all lice as they hatch, ensuring that none reach maturity to lay the next generation of eggs (see Figure 2). In clinical studies bug-busting has shown variable cure rates from 38 to 57 per cent after 14 days of treatment.8,9

The recommended regimen is one wet combing session every four days for at least two weeks. If lice are found on the
second, third or fourth wet combing session, wet combing should be continued until no lice have been seen for three consecutive sessions.

Bug-busting can be used alone or in addition to a topical pediculocide and is particularly useful in cases where resistance has developed to all the topical agents. It is time consuming and labour intensive, although it may be preferred by patients or parents who do not want to use any chemicals.

Physical insecticides

Dimeticses (linear polydimethylsiloxanes of varying chain length) are silicone oils with a low surface tension and special creeping and spreading properties. They are a relatively new class of anti-head-louse compounds with a physical mode of action.10

Dimeticone 4 per cent lotion11 is a treatment licensed for head lice.11 It is a colourless and odourless fluid with a slightly oily texture that is applied to dry hair. It should be allowed to dry by evaporation without the use of a hairdryer and should be washed off after eight hours. It is important that it is applied to all the hair and scalp.

Dimeticone can be used in those six months and over, women who are pregnant or breast-feeding and in patients with asthma. The manufacturer recommends that dimeticone is applied twice, seven days apart, in order to kill nymphal lice emerging from eggs that might not have been killed on the first application (due to poor ovicidal activity).22

Following a report that a patient who was using Hedrin set fire to his hair, labelling on the product has changed to add the following: ‘Warning: hair should be kept away from naked flames, cigarettes and other sources of ignition while treatment with Hedrin is underway’.13

Dimeticone works by a physical rather than a chemical mode of action and thus there is no evidence of resistance.13 The dimeticone is in a silicone solvent that immobilises the lice and, as the solvent evaporates, the lice are left coated and subsequently die by reverse osmotic effects resulting from disruption of their ability to manage internal water.14

A review by the Drug & Therapeutics Bulletin in 200715 recommended that, based on current evidence, it was reasonable to consider dimeticone as a first-line treatment, particularly for parents or patients who did not want to use insecticides.15 The BNF also recommends dimeticone as an effective treatment against head lice.

Hedrin Once Liquid gel (4 per cent dimeticone) is another treatment option for head lice and can be purchased in pharmacies. The gel is easier to apply than lotion and only needs to be applied once for 15 minutes as opposed to the lotion, which requires an overnight application that needs to be repeated one week later. The gel has better ovicidal properties and a proof-of-concept study showed that a 15-minute application of dimeticone 4 per cent liquid gel killed head lice and prevented louse eggs from hatching.

High concentration dimeticone A much higher concentration of dimeticone is marketed over the counter in the UK as NYDA.16 This is an antihair-lice product containing two dimeticone formulations with different viscosities in a total concentration of 92 per cent that can rapidly penetrate into the spiracles of lice. The product fills the entire tracheal system within minutes, thus interrupting oxygen supply and leading to rapid death of the insect.

In 2011 it gained NHS approval when it was accepted onto the appliances section of the NHS Drug Tariff. NYDA is marketed as following the BNF recommendations for treating head lice. It is designed to eradicate lice and their eggs in a single application and it can achieve at least 95 per cent efficacy in one application. However, the manufacturer recommends that parents should check their child’s hair again 8–10 days after the initial application and treat again with NYDA if they find lice or nits. NYDA must not be used near an open flame or hair dryers because some of its ingredients are inflammable.

A randomised controlled trial from Brazil compared the efficacy of a product containing dimeticone 92 per cent to a permethrin 1 per cent lotion.19 Both products were applied twice, seven days apart, and the results showed that cure rates on day 9 were 97 per cent with dimeticone and 68 per cent with permethrin (p<0.0001), but cure rates were not given for day 14. The authors concluded that due to its physical mode of action development of resistance is unlikely.10

A major advantage of dimeticone 92 per cent is its good ovicidal activity.12 The low-viscosity dimeticone may function as a vehicle for the higher-viscosity dimeticone, facilitating entry into the aerophytes of eggs similar to its entry into spiracles of lice.12

Lincin lotion contains dimeticone 95 per cent in addition to almond oil, kernel oil and vitamin E. It works by coating and smothering the head lice causing them to die in addition to coating the eggs, thus impeding their development. It is available in pharmacies.

### Table 1. Chemical insecticide preparations for head lice

<table>
<thead>
<tr>
<th>Drug</th>
<th>Available as</th>
<th>Application</th>
<th>Use in children</th>
<th>Special precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permethrin</td>
<td>1% lotion (Lyclear Creme Rinse)</td>
<td>not recommended in head lice due to short contact time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malathion</td>
<td>0.5% liquid in aqueous solution (Derbac-M)</td>
<td>apply to dry hair and scalp, allow to dry naturally and wash out after 12 hours and repeat treatment after 1 week to kill newly hatched lice</td>
<td>use in children over 6 months</td>
<td>can use in patients with eczema or asthma; use in pregnancy or breast feeding on medical advice</td>
</tr>
</tbody>
</table>

Linicin lotion contains dimeticone 95 per cent in addition to almond oil, kernel oil and vitamin E. It works by coating and smothering the head lice causing them to die in addition to coating the eggs, thus impeding their development. It is available in pharmacies.
Isopropyl myristate/cyclomethicone (IPM/C; Full Marks Solution) Isopropyl myristate (an oily fatty acid ester, 50 per cent concentration) is another physical treatment for head lice. In a paper published in 2008, IPM/C solution was compared to permethrin 1 per cent in two assessor-blind randomised controlled parallel-group clinical trials.

IPM/C was applied to dry hair for 10 minutes then washed out with shampoo and water, whereas permethrin 1 per cent was applied to freshly washed hair and rinsed out after 10 minutes with water. The same regimen was repeated seven days later. The results showed cure occurred in 82 per cent of participants treated with IPM/C and 19 per cent with permethrin 1 per cent (p<0.001). IPM/C was found to be easier to apply (p<0.001) and had less odour. The authors concluded that as IPM/C has a physical action that kills head lice it should not be affected by resistance to neurotoxic insecticides. The manufacturer maintains that IPM/C solution works by removing the wax coating on the louse exoskeleton leading to uncontrollable dehydration and subsequent death.

The NICE Clinical Knowledge Summary on head lice management recommends IPM/C as a treatment option for head lice. It is recommended as a physical insecticide in children over two years of age and can be used in patients with asthma. However, it is not recommended in people with skin conditions.

Coconut, anise and ylang ylang spray (CAY; Lyclear Spray Away) is a class 1 medical device that acts by coating lice in an oily film, obstructing the respiratory system in a similar way to several other medical device products for control of head lice. coconut oil is thought to kill head lice by blocking the trachea and disrupting water balance, so resistance is unlikely to develop. Anise is an essential oil that is thought to have insecticidal activity. Ylang ylang is included for its skin soothing properties. CAY spray has been evaluated in two studies that showed a good success rate, but neither was undertaken in the UK.

A UK study compared CAY spray with permethrin 0.43 per cent lotion. This was a randomised assessor-blinded controlled parallel-group trial involving 100 participants with active head lice infestation. Each product was applied twice, nine days apart. CAY was left in place for 15 minutes before washing out using shampoo and water, while the permethrin lotion was left for 45 minutes and removed by rinsing with water alone. CAY spray was successful in 82 per cent of participants as compared to 42 per cent with the permethrin lotion (p<0.0001).

A number of adverse events were experienced by both groups. These were mostly stinging or burning sensations on the scalp and/or neck during and after treatment. Most of the events were related to intensity of infestation and the number of bite reactions on the scalp.

The NICE Clinical Knowledge Summary on head lice management recommends CAY spray as a physical insecticide treatment option for head lice. However, it is not recommended in children under two years of age, in people with skin conditions or those with asthma.

1,2-octanediol is a novel surfactant for treating head lice infestation. It has been speculated that 1,2-octanediol kills head lice by disrupting the insect’s cuticular lipid thus resulting in dehydration. A two-centre parallel randomised observer-blind study of 121 participants compared 1,2-octanediol lotion applied for 2–2.5 hours to 1,2-octanediol alcohol mousse applied for 2–2.5 hours or eight hours overnight. The mousse applied for eight hours overnight cured 31 out of 40 (78 per cent) compared with 24 out of 40 (60 per cent) for lotion, but mousse applied for 2–2.5 hours was less effective than lotion. Side–effects included application-site reactions including irritation and itchy and hot paraesthesia-like sensations, which were worse for the lotion as compared to the mousse.

1,2-octanediol is marketed as Hedrin Treat & Go and available as a spray, mousse or lotion. According to the manufacturer the light and nonoily formula spreads easily on the hair and there is no need to wash it out straight away. The treatment can be kept on during the day or all night and easily washed out leaving no residue on the hair. As it works by stripping away the waxy cuticle causing dehydration, resistance is therefore unlikely to develop.

The available physical insecticides and their properties are listed in Table 2 and the recommended management of head lice is outlined in Figure 3.

Future head lice treatments
Spinosad, benzyl alcohol and topical ivermectin have Food and Drug Administration (FDA) approval in the USA and are only available on prescription. These products are not currently licensed in the UK.
<table>
<thead>
<tr>
<th>Physical Insecticide</th>
<th>Available as</th>
<th>Application</th>
<th>Use in children</th>
<th>Special precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimeticone 4%</td>
<td>Hedrin Lotion</td>
<td>apply to dry hair, allow to dry without use of hairdryer and wash out after 8 hours; repeat treatment 7 days later</td>
<td>use in children 6 months and older can be used under 6 months with medical advice</td>
<td>avoid contact with naked flame; do not smoke during treatment can be used in patients with eczema and asthma; can be used in pregnancy and breast-feeding</td>
</tr>
<tr>
<td>Dimeticone 92%</td>
<td>Hedrin gel</td>
<td>apply to dry hair, leave in for 15 mins and wash out, let hair dry naturally; single application</td>
<td>use in children 6 months and older</td>
<td>avoid contact with naked flame can be used in patients with eczema and asthma</td>
</tr>
<tr>
<td>Dimeticone 95%, almond oil, apricot kernel oil, vitamin E</td>
<td>NYDA</td>
<td>apply to dry hair ensuring all the hair is covered, allow hair to dry naturally and wash out after 8 hours; may need repeat treatment after 8–10 days if evidence of head lice</td>
<td>use in children over 2 years of age</td>
<td>avoid contact with naked flame; do not smoke during treatment manufacturer does not recommend its use during pregnancy or breast feeding</td>
</tr>
<tr>
<td>Linicin lotion</td>
<td>apply to dry hair ensuring all hair is covered, leave for 15 mins and wash with nonconditioning shampoo; after washing comb with fine-toothed stainless steel comb provided to remove dead lice; repeat treatment after 9 days to kill newly hatched lice</td>
<td>use in children 6 months and older</td>
<td>avoid contact with naked flame; do not smoke during treatment check with doctor if pregnant or breast feeding</td>
<td></td>
</tr>
<tr>
<td>Isopropyl myristate/ cycloheximidine</td>
<td>Full Marks Solution Spray</td>
<td>apply to dry hair and scalp for 10 mins, wash out with water and shampoo and repeat treatment 7 days later</td>
<td>use in children over 2 years of age</td>
<td>can be used in patients with eczema or asthma no information on its use in pregnancy or breast feeding</td>
</tr>
<tr>
<td>Coconut, anise and ylang ylang spray</td>
<td>Lyclear Spray Away</td>
<td>apply to dry hair and scalp for 15 mins and wash out using shampoo; repeat treatment 7 days later</td>
<td>use in children over 2 years of age</td>
<td>avoid in people with skin conditions; avoid in broken or irritated skin avoid in patients with asthma no information on its use in pregnancy or breast feeding</td>
</tr>
<tr>
<td>1,2-octanediol (activdiol)</td>
<td>Hedrin Treat &amp; Go Lotion</td>
<td>apply to dry hair ensuring all hair is covered, let hair dry naturally and leave on hair for 8 hours and wash out with normal shampoo; repeat after 7 days to kill any newly hatched lice</td>
<td>use in children over 6 months</td>
<td>do not use on broken skin can be used if pregnant or breastfeeding</td>
</tr>
</tbody>
</table>

**Table 2. Physical insecticide preparations for head lice**
**Spinosad** Spinosad 0.9 per cent suspension is a topical treatment for head lice that has been approved by the FDA as a prescription medicine in patients aged four years and over. It is a natural mixture of the pediculicidal tetracycline macrolides spinosyn A and D. It interferes with nicotinic acetylcholine receptors in insects, which results in paralysis of lice from neuromuscular fatigue after extended periods of hyperexcitation. The paralysis prevents lice from feeding and causes them to die. It is also ovicidal, killing both eggs (nits) and head lice.24

**Topical ivermectin** Ivermectin 0.5 per cent lotion for treatment of head lice recently received FDA approval. It should probably only be considered as an option when all other treatments have failed as head lice may develop resistance, as has happened with ivermectin in the treatment of onchocerciasis.

*Figure 3. Recommended management of head lice*
Benzyl alcohol  Benzyl alcohol lotion (BAL) 5 per cent is a non-neurotoxic topical head lice treatment that has FDA approval. Scanning electron microscopy shows that it asphyxiates lice by 'stunning' the spiracle open allowing the vehicle, comprising mineral oil and other inactive ingredients, to infiltrate the 'honeycomb' respiratory apparatus and kill the lice.\

Scabies  
Scabies is a common skin condition caused by the mite *Sarcoptes scabiei var hominis*, an obligate human parasite that burrows downwards into the epidermis and typically presents with a papular, intensely pruritic eruption usually involving the interdigital spaces and flexural creases (see Figure 4). Transmission is by close body contact and successful management requires treatment of the affected individual as well as close contacts. The incubation period for the first infestation is usually three to four weeks, but subsequent infections can provoke symptoms within a few days.

The commonest presenting symptom is generalised pruritus, more intense at night and after a hot bath or shower. The lesions affect the interdigital web spaces of the hands and elbows, axillae, ankles, feet, buttock areas, male genitalia and periareolar area in women. Young children, older people and the immunocompromised can also have face and scalp involvement.

Clinical presentation varies from erythematous papules with or without excoriations to vesicles, nodules, dermatitis or a secondary bacterial infection. Finding a burrow (which represents the tunnel that a female mite excavates while laying eggs) is pathognomonic for scabies, but even they can be absent.

Confirmation of the diagnosis is obtained by taking a skin scraping from an affected area (ideally a burrow), placing the material on a glass slide with a drop of 10 per cent potassium hydroxide and seeing an adult mite, egg or eggshell under light microscopy.

Crusted ('Norwegian') scabies is a hyperinfestation presenting as hyperkeratotic warty crusts typically affecting the hands and feet, but all areas of skin including the scalp and trunk can be involved with patients harbouring up to millions of mites. Crusted scabies can easily become secondarily infected, present with generalised lymphadenopathy and be associated with a peripheral blood eosinophilia.

Crusted scabies usually occurs in patients with a compromised immune system (eg older people, transplant patients and those who are HIV positive) as well as those with decreased sensory functions (eg paraplegics). It is highly contagious for medical and paramedical staff and is far more difficult to eradicate than classical scabies.

Treatments  
The primary method of treatment for scabies is by topical application of a scabicide overnight to the whole body from head to toe, although oral treatment with ivermectin is an effective alternative in certain circumstances. The *BNF* mentions that it is important to apply the treatment to the whole body including the scalp, neck, face and ears (despite manufacturers’ advice of applying it to the whole body except head and face), and this is particularly important in small children and immunocompromised and older patients who can have scalp involvement.

Patient information leaflets are useful as they explain the correct method of application, warn patients against overuse of products and explain to them that the itch can persist for a number of weeks even after successful treatment. It is important to treat all family members and close contacts simultaneously to avoid reinfection. Bedclothes and clothing should be washed but do not require any special laundering such as dry cleaning. Reasons for treatment failure are outlined in Table 3.

A Cochrane review concluded that topical permethrin appeared to be the most effective treatment for scabies. Ivermectin (unlicensed) appeared to be an effective oral treatment, but the authors highlighted that more research was needed on the effectiveness of malathion (Derbac-M), particularly when compared to permethrin.

Benzyl benzoate has been used to eradicate scabies for over 60 years. Various treatment regimens have been employed but two to three applications on consecutive days has been recommended by the *BNF*.

The main side-effect of benzyl benzoate is skin irritation, usually developing within minutes of application and in some cases

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**Table 3. Reasons for treatment failure in patients with scabies**

- scabicide applied incorrectly, or parts of the body missed
- nonadherence
- reinfection, especially if all close contacts not treated simultaneously
- resistance to scabicide
- wrong diagnosis
- psychogenic itch
- secondary eczema mistaken for scabies
- sensitisation or allergic contact dermatitis to topical scabicide
so severe that it needs to be washed off again immediately. Its use in children is not recommended as the dilution necessary to reduce its irritant effect on children may also reduce its efficacy.


Pramethrin is now considered the treatment of choice in the UK, USA and Australia.27 It is well tolerated, has low toxicity and is poorly absorbed across the skin. The small percentage that is absorbed is rapidly metabolised. Pramethrin is contraindicated in patients who are allergic to chrysanthemums. It should be applied overnight for 8–12 hours and then washed off.

The BNF2 recommends that pramethrin should be applied twice, one week apart, in ordinary scabies to increase its effectiveness, but patients with crusted ‘Norwegian’ scabies may require two or three applications on consecutive days to ensure that enough penetrates the hyperkeratotic areas to kill all the mites.

It is licensed in children under medical supervision from two months upwards. It has not been tested in pregnancy but has been used with no apparent ill-effects.

Malathion 0.5 per cent has also been licensed for use in scabies, with the manufacturer recommending that it be applied to the whole body and left on for 24 hours. However, as there are no randomised controlled trials showing its efficacy in the management of scabies, the Cochrane study recommends pramethrin as the first-line agent in the management of scabies.28

Ivermectin acts by blocking neurotransmission across nerve synapses that use glutamate or gamma-aminobutyric acid (GABA) as their neurotransmitters. It should not be used in pregnancy, breast-feeding mothers or in children under five years or 15kg. This is a broad-spectrum anthelmintic agent structurally similar to the macrolide antibiotics but without antibacterial properties.29 It is an antiparasitic agent and effectively used in onchocerciasis, strongyloidiasis and cutaneous larva migrans.

Although unlicensed in scabies, it has been successfully used on a named-patient basis for crusted ‘Norwegian’ scabies in doses up to 200µg per kg. As ivermectin is not ovicidal, a second dose after 7–12 days may be necessary.

Crotamiton cream (Eurax) has also been used in scabies as an alternative scabicide. It is formulated as a 10 per cent lotion or cream. It requires nightly treatments for three to five days and can cause skin irritation. It has been helpful for relieving postscabetic itch after treatment.

National guidelines on the management of scabies infestation aimed primarily at people aged 16 years or older were produced by the British Association of Sexual Health and HIV (BASHH) in 200730 and they recommended pramethrin 5 per cent cream (level of evidence 1b, grade of recommendation A) and malathion 0.5 per cent aqueous lotion (level of evidence 4, grade of recommendation C). Their guidelines recommend that these products should be applied to the whole body from the neck downwards, and washed off after 12 hours for pramethrin and after 24 hours for malathion. The products are usually applied overnight. Application of crotamiton cream may give symptomatic relief for itch, which can persist for several weeks after treatment. They recommend that Norwegian scabies may be treated with oral ivermectin.30

The recommended treatment of scabies is outlined in Figure 5.

Associated and postscabetic itch
This can be managed by the use of emollients, mild-to-moderate topical steroids or crotamiton 10 per cent cream on its own or in combination with a mild topical steroid ointment (Eurax-Hydrocortisone). In addition sedative antihistamines can also be helpful in relieving the itch associated with scabies.

Management of scabies in care homes and day centres
Outbreaks of scabies in care homes should be dealt with quickly and efficiently in order to keep the outbreak to a minimum. The Health Protection Agency North West has published guidelines on the management of scabies infection in the community.31 These guidelines recommend that if scabies is identified or suspected within a care home setting then the chance of possible infection for each resident and staff member should be assessed as high, medium or low risk and management undertaken according to this risk.
Prescription review

GP s in England wrote 307,000 scrips for parasiticidal preparations in 2012 at a total cost of £3.15 million – an increase of 3 per cent by volume but 22 per cent by cost compared with 2011. The difference is due to a decrease in the use of cheaper malathion products and an increase in prescribing of permethrin.

Three-quarters of scrips in 2012 were for permethrin products, accounting for 81 per cent of spending. Permethrin Cream 5 per cent accounted for 72 per cent of permethrin products by volume and 78 per cent by cost. Prescribing of dimeticone was almost exclusively for Hedrin Lotion 4 per cent rather than the spray.

The BNF classes benzyl benzoate application and Lyclear Creme Rinse (permethrin) 1 per cent as less suitable for pre-
Resources

Guidelines


Patient information


Groups and organisations

Community Hygiene Concern. Helpline: 01908 561928; e-mail: bugbusters2k@yahoo.co.uk; website: www.chc.org. Produces Bug Buster kits (£6.30 + p&p), DVD/video (£8.95 + p&p) and primary-care guide (£6.85 + p&p) containing information on head lice, crab lice and scabies.

Websites

www.medinfo.co.uk – provides advice and patient information sheets on scabies and head lice.

www.patient.co.uk/display/16777222/ – patient information leaflets for both head lice and scabies.