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Guideline for managing ectoparasitic infestations (scabies and pediculosis) in the context of pharmaceutical care

Diretriz de manejo de ectoparasitoses (escabiose e pediculose) no contexto do cuidado farmacêutico

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Abstract:
Objective: To systematize, through evidence-based practice, the management of self-limiting cases of ectoparasitoses (scabies and pediculosis) within the context of Pharmaceutical Care. **Methods:** The ADAPTE method was adopted as a structured process for literature review and guideline development. Additionally, the tools Appraisal of Guidelines for Research & Evaluation – version II (AGREE II) and Grading of Recommendations Assessment, Development and Evaluation (GRADE) were used for the analysis of the selected practice guidelines and for the categorization of evidence, respectively. **Results:** Medical history taking is a fundamental step in the intervention strategy and in confirming the self-limiting nature of ectoparasitoses, enabling the analysis of the location and characteristics of the condition, as well as referral in cases of suspected secondary infections. Non-pharmacological interventions are limited to more traditional practices aimed at reducing infestation, such as mechanical removal methods for pediculosis and decontamination measures and health education for scabies. Regarding pharmacological measures, there are few available options, with benefits and limitations that vary according to the patient's profile. As first-line treatment, topical formulations in the form of creams or lotions containing permethrin and oral ivermectin should be prioritized. The pharmacist must be alert to monitor warning signs that may require referral, such as sensitivity to medications, signs of infections with discharge, immunocompromised patients, and more frail elderly individuals, who are susceptible to the development of crusted scabies.
Keywords: Clinical Guidelines; Community Pharmacy Services; Ectoparasitoses; Pharmaceutical Services; Self-Limiting Health Conditions Management.

Resumo:
Objetivo: Sistematizar, por meio da prática baseada em evidências, o manejo de casos autolimitados de ectoparasitoses (escabiose e pediculose) no contexto do cuidado farmacêutico. **Métodos:** Para elaboração da diretriz, foi adotado o método ADAPTE como processo estruturado de revisão da literatura e construção do documento. Foram utilizadas, ainda, as ferramentas *Appraisal of Guidelines for Research & Evaluation* – versão *II* (AGREE II) e *Grading of Recommendations Assessment, Development and Evaluation* (GRADE) para a análise dos guias de prática selecionados durante o processo e para categorização das evidências, respectivamente. **Resultados:** A anamnese é um passo fundamental para a estratégia de intervenção e confirmação do caráter autolimitado das ectoparasitoses, o que permite a análise da localização e das características do problema, bem como o encaminhamento em caso de suspeita de infecções secundárias. As intervenções não farmacológicas restringem-se a práticas mais tradicionais de diminuição da infestação, como métodos de remoção mecânica na pediculose e medidas de descontaminação e educação em saúde na escabiose. Em relação às medidas farmacológicas, há poucas opções disponíveis, com benefícios e restrições que variam conforme o perfil do paciente. Devem ser priorizadas, como primeira linha, a utilização de formulações tópicas em creme ou loção à base de permetrina e a ivermectina oral. O farmacêutico deve estar atento para monitorar o aparecimento de sinais de alerta que indiquem a necessidade de encaminhamento, como sensibilidade aos medicamentos, sinais de infecções com secreção, pacientes imunocomprometidos e idosos mais fragilizados, suscetíveis ao desenvolvimento de escabiose crostosa.
Palavras-chave: Diretrizes Clínicas; Ectoparasitoses; Farmácia Clínica; Farmácia Comunitária; Manejo de Problemas de Saúde Autolimitados.

Introduction

Scabies and pediculosis are ectoparasitic skin caused by arthropod infestation. These conditions more frequently affect vulnerable populations, which commonly evolve into secondary infections.[1-9] Transmission occurs through direct body contact with an infected individual or through sharing clothing, head accessories, and hairbrushes.[1,2,6,8,10,11] Treatment of infestations and health education are the most effective means to prevent the spread of these diseases.[12]

Human scabies is caused by *Sarcoptes scabiei hominis*, a species that burrows into the stratum corneum of human skin. Intense itching over the body, wounds, erythematous papules, or even persistent pruritic nodules are clinical signs indicating the presence of the disease. Itching is more intense at night, when reproduction and egg deposition occur. Affected individuals may develop secondary infections related to allergic reactions to the mite's metabolic products, which can lead, in more severe cases, to rheumatic heart disease and post-streptococcal acute glomerulonephritis. Crusted scabies (or Norwegian scabies) is a distinct clinical form that primarily affects immunosuppressed patients, those with neurological disorders, or institutionalized individuals.[6,8,11,13,14]

The disease outbreaks can primarily occur in institutional environments, such as nursing homes and hospitals; however, the manifestation of symptoms in other family members should immediately raise suspicion among healthcare professionals. It is a highly prevalent health problem, with a worldwide prevalence estimated at around 174 to 180 million cases and an annual incidence of 520 to 540 million cases, according to the most recent data from the Global Burden of Disease Study 2021. The condition can more frequently affect women and children, and the prevalence of scabies varies by region: from about 2% in some countries in Europe and the Middle East to over 30% in island nations in the Pacific.[15-17]

Head lice infestation is caused by the insect *Pediculus humanus capitis*, which primarily affects school-aged children (3 to 11 years old), with a higher prevalence in females. This infestation causes intense itching of the scalp, which can lead to decreased school performance, difficulty concentrating, and insomnia. Body lice infestation is caused by *Pediculus humanus corporis* and has low incidence in Brazil. In most cases, treatment consists only of improving personal hygiene and adequate disinfection of clothing. On the other hand, pubic lice infestation is caused by *Pthirus pubis* and is generally transmitted through sexual contact. Although it primarily affects pubic hair, it can also infect eyelashes, hair, beard, and armpit hair.[1,5,7,18,19]

The estimated global prevalence of lice infestation among school-aged students is 19%. In Brazil, studies conducted in different regions show contrasting results: while in Manaus the infestation rate was 3.68% among evaluated children, in municipalities like Jundiaí and Nova Iguaçu, the prevalence of *P. capitis* exceeded 35%.[20,21]

Despite the high incidence of these conditions, many health professionals still face difficulties in identifying and adequately managing ectoparasitoses clinically, contributing to underreporting and worsening avoidable cases. The absence of updated and systematized materials specifically aimed at pharmaceutical care reinforces the need for guidelines that guide professional practice based on scientific evidence and good care practices.[1-10] Thus, the objective of this guideline was to systematize, through evidence-based practice, the management of self-limiting cases of ectoparasitoses (scabies and pediculosis) within the context of Pharmaceutical Care.

Methods

For the development of this guideline, the **ADAPTE** method was used as a framework, divided into three consecutive phases: (i) configuration, (ii) adaptation, and (iii) finalization. The method consists of a structured process for constructing clinical practice guidelines based on pre-existing documents in the scientific literature. In this study, the following documents were elected as reference: (i) orientation guides from evidence synthesis bases; (ii) clinical guidelines of the subject; (iii) systematic reviews on treatments; (iv) specific guidelines or articles on pharmaceutical care.[1,2]

Searches were conducted in July 2020 using

MeSH terms and boolean operators *"Headache"* OR *"Migraine"* AND *"Guideline."* Searches were performed in evidence synthesis databases *Best Practice, Dynamed, and Uptodate*; on the websites of guideline developers *National Institute for Health and Care Excellence (NICE) and Scottish Intercollegiate Guidelines Network (SIGN)*; on the website of the association dedicated to headache studies *British Association for the Study of Headache (BASH);* on the websites of the American (AHS), Brazilian (BHS), Canadian (CHS), and International (IHS) Headache Societies; and finally, in the Cochrane and PubMed databases.

Inclusion criteria considered were: (i) publications from July 2010 to July 2020; (ii) written in English or Portuguese; and publicly accessible. Exclusion criteria adopted for refining the sample included: (i) studies that did not focus on the treatment of ectoparasitoses; (ii) works directed exclusively at specific populations (such as pregnant women or children); (iii) studies applied in hospital, urgent, or emergency contexts; (iv) publications that dealt exclusively with a single type of therapeutic approach (for example, only pharmacological or only non-pharmacological), without considering clinical management in a broader sense.

For preliminary evaluation of the identified guidelines and as a model for defining the sections and writing of this guideline, the AGREE II tool was used.[3-5] A quality analysis of the available evidence for potential pharmacological and non-pharmacological interventions was also conducted using the GRADE tool, widely used internationally for categorizing recommendations and assisting in decision-making. Following the method, interventions were classified according to their level of evidence as (i) high, (ii) moderate, (iii) low, and (iv) very low, while the degree of recommendation was classified as (i) strong or (ii) weak.[27,28]

Results

A total of 180 references were identified in the databases. After the removal of duplicates, 109 works were selected for title and abstract reading. Of these, 29 were chosen for full reading based on the selection criteria. However, during the systematization phase, other references were added to compose this guideline, totaling 31 included references. The guideline was then organized as follows:

- Pharmaceutical care strategies;
- Pharmaceutical assessment and history taking;
- Pharmacological interventions;
- Non-pharmacological interventions;
- Warning signs and referrals;
- Monitoring of results

Pharmaceutical Care Strategies:

1. Support the patient in identifying the symptoms and characteristics of ectoparasitic infection.[1,3,5-10,13,14,19,29-37]

2. Recommend reliable and effective treatment for scabies and pediculosis to eliminate these organisms and prevent the contamination of other individuals.[1,5,6,8,9,13,14,19,29,30,36]

3. Reduce self-medication and the use of potentially dangerous or ineffective alternative products for the health of infested patients.[1,5,6,13,14,19,36,38]

4. Identify warning signs indicative of potential secondary infection with purulent exudate.[5,6,32-27]

5. Refer patients who require investigations regarding the potential development of secondary infections.[5,6,34-37]

Pharmaceutical Assessment and History Taking:

Scabies is caused by the tunneling of mites; however, its diagnosis depends on the presence of erythematous lesions. This clinical sign is due to the immunological action of the carrier. If a person has never had scabies before, symptoms may take 4 to 8 weeks to develop (and during this period, transmission may occur even in the absence of symptoms). In a person who has had scabies before, symptoms usually appear much earlier (1-4 days) after infestation. [2,6,8,11,13,31]

The immune response is of the Th2 type with the production of interleukin-4 (IL-4) and immunoglobulin E (IgE). The most common signs and symptoms of scabies are itching, especially at night, and papular skin rash. Itching and skin rash may affect a large part of the body or be limited to common locations, such as wrists, elbows, armpits, the membrane

between the fingers, nipples, penis, and buttocks. The skin rash may also manifest with small vesicles and scales. Scratching the lesions can cause wounds on the skin, which may sometimes become infected by bacteria. In young children and the elderly, rashes may also affect the scalp, palms of the hands, and soles of the feet.[2,6,8,11,13,31]

It is estimated that 5 to 20 minutes of close contact is necessary for the mite to be transferred to another person. Therefore, investigating possible exposure situations is fundamental during the history taking. The main reported risk factors include:[16,41,42]

• Skin-to-skin contact in overcrowded places is the main risk factor;

• Any skin-to-skin contact with an infested person, such as shaking hands, dancing, as well as sharing personal items like bed linens and towels;

• Situations of social vulnerability (unstable housing, hygiene problems, malnutrition);

• Immunocompromised individuals.

Scabies mites can live up to 72 hours in the environment and 1 to 2 months on the skin of an untreated person. There is no transmission of scabies from animals, as they are different etiological agents, and transmission in swimming pools or through brief contact with infested individuals is also unlikely.[40,43]

Using criteria from the International Alliance for the Control of Scabies (IACS) to identify scabies assists healthcare professionals in the primary analysis of the pattern of lesions and erythematous papules and their typical distribution on the body, differentiating them from other health problems such as chickenpox. The IACS criteria for scabies identification are: (i) confirmed scabies using non-invasive diagnostic methods; (ii) clinical scabies analyzed by patterns of erythema and lesions; (iii) suspected scabies based on analysis of specific and nonspecific lesions. In criteria ii and iii for diagnosis, they must be allied with a history associated with the health problem and do not depend on diagnostic methods such as dermatoscopy and microscopy of skin samples.[44]

On the other hand, pediculosis is caused by head and body lice or by crabs that affect the genital area. They feed by injecting small amounts of saliva onto the skin to draw blood. The saliva of these parasites generates a pruritic allergic reaction that takes 4 to 6 weeks to appear during the primary infection. In clinical practice, the patient's history should be observed: [3-5,7,29,30]

• Sensation of something crawling at the site of infection;

• Intense itching on the head (in the retroauricular and occipital regions); trunk, abdomen, buttocks, eyelashes, beard, armpits, and pubic region;

• Irritability and difficulty sleeping (lice are more active in the dark);

• Wounds on the head caused by scratching (sometimes these wounds may become infected by bacteria from the skin microbiota of the infested individual).

• Presence of adult lice, nits in eggs (lice eggs) fixed to the hair shaft.

• Risk factors include direct contact with an infested person, living in overcrowded conditions, and staying in collective environments. However, there is no evidence that hygiene habits and hair length or type are proven risk factors.[45,46]

Non-Pharmacological Interventions:

As these are clinically neglected conditions historically in terms of developing research aimed at effective treatments, non-pharmacological interventions remain restricted to traditional practices for reducing infestation, such as manual removal and the use of fine-toothed combs for removing parasites from hair. These strategies can even be adopted as supportive measures for the use of oils and topical pharmaceutical products. Furthermore, health education—the main non-pharmacological intervention in the management of scabies—is essential for the community to be able to identify affected individuals, facilitate appropriate treatment, and guide both the infected and their close contacts. [2,3,5,8,9,13, 14,18,19,29,30]

In scabies, precautions related to reducing ectoparasite infestation are based on environmental control with decontamination measures, which consist of isolating items that have come into contact with the infected patient, such as clothing and bedding, which should be washed at a temperature of 50°C and dried at high temperatures (when they can be washed) or isolated in plastic bags for a minimum of one week. These measures reduce the mite infes-

tation for other individuals in the community and should be reinforced by personal hygiene measures and health education, including in cases of pubic scabies, which requires guidance for the patient and their sexual partners. [2,3,5,8,9,13,14,18,19,29,30]

Interventions to reduce the proliferation of ectoparasites in cases of pediculosis can be classified into mechanical removal methods, such as using fine-toothed combs on damp hair and manual removal. Additionally, there are other physical methods aimed at suffocating the parasites, through the use of oils with petroleum jelly. Drying using devices with hot air directed at the hair may be promising, but still lacks robust studies or greater ease of access. [45,46,48,49]

Despite being traditional methods, the diagnosis of this self-limiting condition and the initiation of pharmacological treatment become more effective when associated with interventions that reduce the population of nits and lice. This combination enhances the action of pediculicides, increasing the chances of therapeutic success. It is worth noting that the isolated use of non-pharmacological methods presents relatively low cure rates (between 40% and 70%) and is mostly based on still poorly consolidated studies. [2,3,5,8,9,13,14,18,19,29,30]

Just as it is essential to pay attention to the prevention of the proliferation and transmission of mites in scabies, cases of pediculosis require the same level of care. Therefore, similar guidelines should be adopted regarding the quarantine of the patient and the isolation of close contacts and sexual partners, especially in cases of pubic pediculosis. [20,42,45,48]

Patients should be advised and discouraged from using alternative and traumatic methods (more common in pediculosis), such as shaving the head (effective but distressing). The use of flammable and dangerous substances, such as gasoline and kerosene, or chemical products to facilitate the visualization of nits, such as colored sprays ("neon nits"), is not recommended. Alternative and popular treatments, such as vinegar, alcohol, acetone, bleach, among others, should also be avoided due to the lack of scientific evidence and associated risks. [20,42,45,48]

Pharmacological Interventions

Treatment may include scabicides and pediculicides, administered orally—such as ivermectin, currently the only representative of this class—or in topical formulations. These may contain agents that occlude structures of the exoskeleton (such as dimethicone), substances that dissolve the layer of the parasite's exoskeleton (such as benzyl benzoate and sulfur), or neurotoxic insecticides (such as permethrin). The mode of use varies according to the type of ectoparasitosis: for scabies, ointments and creams are more commonly used; for pediculosis, shampoos, soaps, and lotions applied to the scalp. [2,3,5,8,9,13,14,18,19,29,30]

Table 1 - Pharmaceutical History Taking in Patients with Scabies or Pediculosis (INDICO Strategy). 1,3,5,6,8–10,13,18,19,29,30,47

Domain	Questions/Investigation
Patient Identification	What is the patient's sex? (more common in women) Is the patient pregnant? What is the patient's age? (more common in school age or in people living in shelters)
Nature of Signs and Symptoms	What is the location of discomfort? Is there a sensation of something crawling or tickling? Intense itching? Does it worsen at night? (in the case of lice) Wounds caused by scratching? If possible, perform a manual inspection of the patient suspected of having lice; for scabies, see IACS criteria.
Duration	Duration of symptoms? Has the patient had lice or scabies before? Has there been recent contact with an infected patient? Is there a specific time or period for its onset?
Previous Treatment	Has any type of management been used? What methods were used? How long has it been in use? Has it been effective? In previous episodes, if any, how was the treatment done?
Comorbidities	Does the patient have other health conditions? Does the patient regularly use any medication? Is there current or previous history of immunosuppression, neurological disorders, or institutionalization?
Other Special Situations	Are there signs of secondary infection?

*Suggestive questions. They are not diagnostic and are intended for better understanding of the case and identifying potential warning signs for referral.

Table 2. Summary of Evidence for Non-Pharmacological Interventions for Pediculosis and Scabies. [2,3,5,8,9,13,14,18,19,29,30,32–34]

CONDUCT	TECHNICAL BASIS	GRADE	
		Nível de Evidência	Degree of recommendation
Education in Health	Promotion of actions aimed at assessing risk and advising people who are more involved in these situations on ways to avoid infestation and identify infected individuals. Thus, it is possible to manage infected individuals and their close relatives.	Moderate	Strong
Decontamination Measures in Scabies	Clothes and other objects that have contacted the infected person with scabies should be washed with hot water, by immersion. If this is not possible, it is recommended to store objects in sealed plastic bags for at least one week.	Low	Strong
Mechanical Removal in Pediculosis	Wet combing alone to treat pediculosis has no contraindications and is often preferred by parents wishing to avoid pharmacological treatment. However, it can be time-consuming depending on hair length and thickness, and has limited efficacy. Picking nits (removing eggs and empty shells) is generally not recommended as the sole technique for eradicating an infestation. Electronic combs are also available, but with no evidence of performance.	Low	Strong
Isolation of the Case	The individual should be removed from school or work until 24 hours after treatment completion. In the case of hospitalized patients, isolation is recommended to avoid outbreaks in wards, both for other patients and healthcare professionals.	Moderate	Strong
Drying (Hyperthermia)	Delivery of hot air to kill lice by drying has been attempted by numerous investigators with mixed results. The technique may be very useful in cases where medication may not be recommended; however, the method has been poorly disseminated in Brazil due to costs associated with acquiring specific devices and the need for training people that will perform the technique.	Low	Weak
Petroleum Jelly (Suffocation)	It is believed that petroleum jelly obstructs the respiratory spiracles of adult lice and blocks the openings of the eggs. About 30 to 40 g of standard petroleum jelly should be massaged over the entire surface of the hair and scalp and left overnight.	Low	Weak

First-line treatment for scabies includes using topical formulations of creams or lotions containing 5% permethrin and oral ivermectin in a two-week treatment regimen, barring more severe cases, such as crusted scabies, which may require a longer treatment time or the need to combine treatment options based on medical criteria. Topical 1% (10mg/g) ivermectin is now also available in Brazil, and studies have shown that its efficacy may be similar to oral use. However, the drug is not registered with Anvisa for this indication, and its use is restricted to those over 18 years old. [45,48,50,51]

Permethrin should be the first choice in most cases and is shown to be safer and more effective for pregnant patients and children, serving as an option to ivermectin, which has usage restrictions for these patients, specifically children weighing less than 15 kg, despite having an administration route and posology convenience with excellent adherence. However, a review study showed ivermectin as a slower and less effective treatment compared to 5% permethrin. [40–43,50,52]

For other options, considering the ineffectiveness or availability of first-line treatment medications, other topical agents that act by suffocating external structures of the parasite and dissolving the waxy protective layer of the exoskeleton are used, such as sulfur-based soaps and creams and benzyl benzoate lotions. Options with aqueous or alcoholic formulations of malathion (or malathion) and lindane (neurotoxic insecticides) have been removed from recommendations for scabies due to their potential neurotoxicity to humans, as well as having a strong odor and causing local irritation, which decreased patient adherence to use. [2,3,5,8,9,13,14,18,19,29,30]

In the pharmacological treatment of pediculosis, as well as in scabies, first-line options include using formulations based on **permethrin** and **ivermectin**. The main focus of pediculosis treatment is to ensure good patient adherence to effective options to eliminate foci of new proliferation. Thus, options that promote greater acceptability by the patient require repeated administration (between 7 and 9 days after the first application, completing a cycle of 20 days or less, depending on infestation), in addition to adjusting the treatment time to the life cycle of the louse (within a range of 10 to 20 days, depending on the size of the louse population), so that colonization is effectively reduced. These options consist of non-killing agents, meaning they do not eliminate viable eggs at the time of application but instead hinder the persistence and proliferation of adult parasites. [40–43,50,52]

The main representatives of non-killing agents are 1% permethrin and ivermectin as first-line and dimethicone and benzyl benzoate as secondary options. In treating lice and nits infestation, health education is important to avoid resistance events to the first-line treatment medications. Parasite resistance to medications is significant when there is no adequate guidance regarding the correct usage and treatment regimen; therefore, the pharmacist's role is essential in clarifying guidelines and improving patient adherence to the treatment regimen. [40–43,50,52]

It is important to emphasize that although permethrin is an initial choice option for both scabies and pediculosis, the dosage form and concentration are not the same. A series of cases from the United Kingdom reported treatment failure when 1% permethrin lotion and shampoo formulations were erroneously prescribed for scabies instead of 5% permethrin cream. [40–43,50,52,53]

The complementary use of emollients (with or without mild topical corticosteroids) may be useful for skin irritation caused by topical medications for scabies or for contact dermatitis. Similarly, antihistamines may be helpful for itching that persists for several days after treatment with scabicides. [40,41,54]

The treatment of contacts in cases of ectoparasitoses is not consolidated. A Cochrane review attempted to evaluate interventions to prevent the spread of infestation in close contacts of patients with scabies, but no quality randomized trials were found. Some guidelines recommended, for close contacts without clinical infestation, administering a topical agent as prophylaxis; however, no specific recommendations from the Brazilian Ministry of Health were located. In the event of an outbreak, it is recommended that healthcare professionals notify local health authorities. [52,54,55]

Warning Signs and Referrals

If the patient shows any type of sensitivity to medications with neurotoxic action on parasites, treatment should be reassessed. In these cases, the adoption of additional non-pharmacological strategies is recommended, allowing for the reduction of the dose or even the suspension of the medication without compromising treatment effectiveness. Additionally, patients showing signs of infection – such as yellowish, brownish, or greenish secretions, with or without the presence of blood, and with foul or non-foul odor – should be referred to another level of healthcare that has the appropriate specialty. The objective is to ensure the continuity of primary treatment, integrated with the care of secondary infections, promoting symptom relief and patient recovery. [35–37]

In immunocompromised and elderly patients, care should be heightened due to the greater vulnerability of the immune system to ectoparasitic infestations. The lesions caused by intense itching and burrowing in the skin expose the organism to bacteria present both in the dermis and the environment, which can favor the emergence of local infections. When there is no adequate approach in primary care, these infections may evolve into more severe conditions or clinical conditions directly related to ectoparasitosis, such as crusted scabies. [35–37,45,54]

Quadro 3 - Summary of Pharmacological Interventions for Pediculosis and Scabies. [2,3,5,8,9,13,14,18,19,29,30,32–34]

MEDICATION	STANDARD USE	PATIENT GUIDELINES	GRADE	
			Level of Evidence	Degree of Recomendation
Permethrin MIP/SUS Cream lotion 5% (50mg/mL); Shampoo 1% (10mg/mL))	**ADULTS AND CHILDREN: For pediculosis:** apply 1% permethrin to hair and scalp, leaving it on for 10 minutes before rinsing. For scabies: apply 5% permethrin at night, from neck down to soles of the feet, and wash after 8-14 hours. If necessary, repeat in 1 to 2 weeks.	"In scabies, massage particularly between the fingers, under the nails, wrists, armpits, buttocks, and external genitalia." "In pediculosis, with wet hair, pay attention to the napeZ and behind the ears." "Itching and irritation may persist even with treatment effectiveness."	High	Strong
Ivermectin SUS (Tablets 6mg)	**ADULTS AND CHILDREN (OVER 5 YEARS OR 15KG):** Take in a single dose, according to body weight (200mcg/kg), and at an interval of 1-2 weeks after the first dose (for both ectoparasitoses).	"Avoid alcohol consumption during treatment." "Treatment repetition will depend on medical evaluation and effectiveness."	High	Strong
Benzyl Benzoate MIP Topical emulsion 25% (250mg/mL))	**ADULTS AND CHILDREN:** For pediculosis: moisten hair with lotion after bathing and leave for 5 minutes. For scabies: apply to the most common areas of lesions after bathing with cold water. If necessary, repeat the process after 24 hours (dilution for children).	"Advise the patient to change clothing and bedding." "Guide on the appropriate dilution for pediatric use and perform a patch test on a small area of skin before application. If burning or redness occurs, the product should not be used.""	High	Weak

Quadro 4 - Warning Signs for Referral of Patients with Pediculosis and Scabies. [35-37, 45,54]

KEYWORD	WARNING SIGNS
Systemic Symptoms	Scabies and pediculosis with nonspecific systemic symptoms or purulent exudate should be referred to another level of healthcare, as they represent secondary infections resulting from the infestations of their respective ectoparasites.
Immunocompromised Patients	In scabies and pediculosis, the clinical condition of the patient may evolve due to the spread of other pathogenic microorganisms carried by the ectoparasite or the presence of lesions, particularly in elderly patients and immunocompromised patients (people living with HIV/AIDS, for example).
Crusted Scabies	In immunocompromised and elderly patients, there may be a more acute infestation of ectoparasites, generating more severe allergic reactions and deeper lesions. These conditions are conducive to high transmission and secondary infections by bacteria present in the skin.

Monitoring of Results:

Successful management of scabies and pediculosis occurs when the infestation is resolved. Additionally, it is essential to conduct epidemiological monitoring of the community in which affected individuals are situated to prevent the spread of ectoparasites to others. For those who come into contact with patients with scabies and/or pediculosis, the adoption of prophylactic treatment is recommended, along with reinforcing hygiene measures, especially avoiding the sharing of potentially contaminated personal items. [35–37,45,54]

The patient should be advised that even with the persistence of itching or some symptoms for a time, treatment may have been effective, as the inflammatory and irritative process may last longer. [35–37,45,54]

For most patients, treatment is with a single dose, but in some cases, repetition may be indicated in one or two weeks, considering both oral and topical formulations. Therefore, it is important to verify during and after this period the patient's adherence to treatment and whether the proposed treatment is responsive according to the degree of infestation and reduction of lesions caused by the infestation, as there may be resistance of ectoparasites to pharmacological interventions. [3,5,6,8,9,13,14,19,29– 33,35,37]

Contributions of the Authors:
NSCG, STS, APOB, FAPF, FBAS, GPC, RFL, TMR e RSS: Project conception, data analysis, and manuscript writing; RFL, TMR e RSS: Review and approval of the manuscript.

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