

Guideline on the Management of Pediculosis pubis

Developed by the IUSTI-Europe Guideline Editorial Board

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European Guideline for the Management of Pediculosis pubis

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Guideline development

This guideline has been updated by reviewing the existing guidelines including European Guideline for the Management of Pediculosis pubis (2010) [1], CDC guideline (2011) [2], BASHH guideline (2007) [3]. A comprehensive literature search of publications from 2010 to April 2016 was also conducted (Annex 1. Search strategy).

New information in this guideline since 2010 edition:

- New treatment recommendations
- Changes in Partner management
- Audit standards added.

Epidemiology

Pediculosis pubis (*sin.* crab louse) is an infectious disease caused by the infestation with the parasite *Phthirus pubis*. The infection is transmitted by sexual contact, close body contact or, less common, by contact with objects (e.g. clothing, towels). *Phthirus pubis* infests the terminal hairs of the pubic and perianal areas. The parasite is not adapted for crawling but can be found on the hairs of the legs, forearms, chest or face (including the eyelashes). The

life time of the adult parasite is less than one month during which the female parasite lays eggs that need one week to hatch [4]. The incubation period is usually less than one week. The adult parasite is not able to survive more than 24 hours without blood-feeding [5].

Clinical features

Patients main complain is of itch in the pubic area. Nits and/or lice attached to hairs are visible with the naked eye or using a dermatoscope. Light blue macules (“maculae cerulae”) <1 cm or red papules can be seen at the site of bites. The affected skin area can contain crusts and rust-colored flecks of fecal material [6]. Adult lice infest the terminal hair of the genital area and can also be present on the body hair, facial terminal hair including the eyebrows and eyelashes (typical for children). Small blood stains can be observed on the underwear.

Diagnosis

Diagnosis is usually based on the typical clinical findings. The dermoscopic examination clearly exposes the nits / parasites if the diagnosis is not certain. Screening for other STI is strongly recommended in patients with pediculosis pubis as concomitant STIs are present in 30% of infested individuals [7].

General principles of treatment (figure 1)

There are few quality data comparing the available treatments of pediculosis pubis. Recent data are oriented for the treatment of pediculosis capitis, making difficult to extrapolate the results to pediculosis pubis [8], [9], [10], [11].

Throughout European countries there are numerous differences in the availability of certain pediculicide drugs on the market. In some East-European countries magistral formulations (made up locally) are in use (e.g. benzyl benzoate lotion 25%; lindane 1%).

The topical treatment is applied to all suspected infested regions: genital and anal areas, thighs, trunk, axillae, moustache and beard areas [1].

In order to minimize percutaneous absorption the skin must be cool and dry [12].

The nits must be removed from the hair (e.g. by combing, using fine tweezers).

Clothing, bedding, towels and other items should be machine washed (at 50°C or higher) or dry-cleaned or sealed and stored in a plastic bag for 3 days [3], [13]. When starting the treatment patients should wear clean underwear and clothing [2].

Shaving the pubic area is not necessary [14]. In the general population it is reported that the incidence of pubic lice is decreasing with the increase of pubic hair removal habit due to the destruction of the natural habitat of the parasite [15].

Topical medication must be applied as mentioned in the drug package insert leaflet or as indicated on the medication box. Insufficient application of the insecticide or poor compliance is frequent cause for treatment failure [16]. Resistance to topical and systemic pediculicide treatment has been reported. If the infestation persists, a different class of pediculicide should be applied [17].

Patients should be given a detailed explanation of their infestation together with clear written information {level of evidence IV; grade C recommendation} [1].

Persistent infestation is found in 40% of the patients 10 days after treatment and nit combing [18].

Reapply treatment systematically in 7-10 days (to kill adult lice from eggs existing at the initial treatment) {level of evidence IIa; grade B recommendation} [1], [18].

The infestation is considered cleared if one week after the end of treatment the follow-up examination shows no active infestation (presence of live lice).

First line therapy

- Permethrin 1% cream applied to the affected areas and washed off after 10 minutes. {evidence Ib; grade A recommendation} [19].
- Pyrethrins with piperonyl butoxide applied to the affected areas and washed off after 10 minutes {evidence Ib; grade A recommendation} [20].

Second line therapy

- Phenothrin 0.2% lotion on dry hair, wash out after 2 hours {level of evidence Ib; grade A recommendation} [21].
- Malathion 0.5% lotion on dry hair, wash out 12 hours after application (level of evidence IV; grade C recommendation). Instruct patient to avoid heat exposure (including electric hair dryer) as malathion products are potentially flammable {level of evidence Ib; grade A} [22].
- Ivermectin was reported as efficient but different dosages are used. In a series of pediculus pubis cases the dosage used was 250 micrograms/kg orally, repeated after one week {level of evidence IV; grade C} [23]. A randomized clinical trial demonstrated that in difficult-to-treat head lice the effective dosage of Ivermectin was 400 micrograms/kg orally, repeated after one week [24]. Ivermectin should not be used in children weighing less than 15 kg [25].

Other therapies

- Ivermectin topical was reported as effective and generally well-tolerated for pediculosis pubis {level of evidence IV; grade C recommendation} [26], [27].
- Benzyl benzoate lotion 25% {level of evidence IV; grade C recommendation} [28].
- Lindane licence was withdrawn by the European Medicines Agency in 2008 [29]. In some non-EU countries lindane shampoo 1% is used in the treatment of pediculosis pubis {level of evidence IIa; grade B recommendation} [18]. Lindane should not be applied a second time and should not be used in pregnant or lactating women or in children [30].

- Spinosad recommended for pediculosis capitis, was not yet evaluated for the treatment of pediculosis pubis [31].
- Carbaryl is carcinogenic and is no longer available [1].

Special situations

Pregnancy/lactation

- Permethrin is safe in pregnancy {level of evidence III; grade B recommendation} [1], [32].

Lice in the eyelashes

- Inert ophthalmic ointment with paraffin or yellow mercuric oxide applied as eye patch twice daily for 8-10 days is effective by suffocating the parasites {level of evidence IV; grade C recommendation} [27], [33]. Dead lice and nits can be removed with tweezers or fingernails.
 - Ivermectine oral 200 mcg/kg as two doses one week apart {level of evidence IV; grade C recommendation} [34].
 - Permethrin 1% lotion applied to the eyelashes and washed off after 10 minutes {level of evidence IV; grade C recommendation} [35].
- There are no specific recommendations for *solid organ transplant patients* or for *HIV patients* [2].

Follow-up

A follow-up visit one week after the treatment end will verify its efficacy searching for lice or nits {level of evidence IIa; grade B recommendation} [1], [18]. Patients will be instructed to remove the dead nits adherent to the hairs [1].

Partner management

The infested patient and their sexual contact(s) should avoid close contact and sexual contact until all contacts are cleared of infestation. Partner management for pediculosis pubis is required with a look-back period of time of three months [36].

Epidemiological treatment is recommended {level of evidence IV; grade C recommendation} [37].

The presence of pubic lice in children is not necessarily and indicator of sexual abuse or sexual activity as they can be transmitted by non-genital bodily contact between close living companions.

Human lice can be used as a forensic tool. A mixed DNA profile of 2 hosts can be detectable in blood meals of the lice that have had close contact between an assailant and a victim [38].

Prevention / health promotion

Patients with pediculosis pubis should not share their clothes, bedding and personal hygiene products. Transmission by sitting on toilet seats is not possible. The disease is not prevented by condom use. When dealing with populations groups living in crowded spaces as in time of war or disaster a special attention should be shown to the sanitary conditions.

Patients with pediculosis pubis should be screened for other sexually transmitted diseases.

Auditable Outcome Measures

- Patients with pediculosis pubis should be invited for follow-up visit: target 100%.
- Suspected cases of pediculosis pubis should be invited for screening: target 100%.
- Suspected cases of pediculosis pubis should have access to written information on the disease: target 100%.

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Appendices

- Composition of editorial board:
www.iusti.org/regions/Europe/pdf/2013/Editorial_Board.pdf
- List of contributing organisations:
www.iusti.org/regions/Europe/euroguidelines.htm
- Tables of levels of evidence and grading of recommendations:
www.iusti.org/regions/Europe/pdf/2013/Levels_of_Evidence.pdf

Statement on declarations of interest

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Annex. 1. Search strategy

Resources

- PubMed (<http://www.ncbi.nlm.nih.gov/pubmed>)
- Biomedical Reference Collection (via EBSCO Host - <http://web.ebscohost.com/ehost/>)
- Medline (via EBSCO Host - <http://web.ebscohost.com/ehost/>)

Keywords

pediculosis pubis	Combined with AND search	Clinical trial
<i>Phthirus pubis</i>		Diagnosis
Pyrethrins		Therapy
Permethrin		Resistance
Malathion		Large population
Ivermectine		Emigrants

Spinosad Lindane		
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Searches were performed in January – May 2016.

2017 European Guideline for the Management of Pediculosis pubis

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Conflicts of interests

The Work Under Consideration for Publication					
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5	Payment for writing or reviewing the manuscript	No	No	No	No
6	Provision of writing assistance, medicines, equipment, or administrative support	No	No	No	No
7	Other	no	No	No	no

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2	Consultancy	No	No	No	Pierre Fabre
3	Employment	No	No	No	No
4	Expert testimony	No	No	No	No
5	Grants/grants pending	No	MSD France	No	No
6	Payment for lectures including service on speakers bureaus	No	-MSD France -Sanofi (USA) -KCL		-Alfa Wassermann -Novartis Pharma Services
7	Payment for manuscript preparation	No	No	No	No
8	Patents (planned, pending or issued)	No	No	No	No
9	Royalties	No	No	No	no

10	Payment for development of educational presentations	no	No	No	
11	Stock/stock options	no	No	No	no
no 12	Travel/accommodations/meeting expenses unrelated to activities listed**	-Abbvie	-MSD France -KCL	No	
13	Other (err on the side of full disclosure)	no	Codexial: gift of drug for a RCT	No	no

* This means money that your institution received for your efforts.

** For example, if you report a consultancy above there is no need to report travel related to that consultancy on this line.

Other relationships					
		CM Salavastru	O Chosidow	M Janier	GS Tiplica
1	Are there other relationships or activities that readers could perceive to have influenced, or that give the appearance of potentially influencing, what you wrote in the submitted work?	No	no	no	no