Review of Pediculus Humanus Capitis (Head Lice)

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Background:

The head lice also commonly referred to as Pediculus humans capitis is a parasitic insect that affects literally millions of people especially children globally. Consequently, lice infestations pose serious health risks that are social and psychological in nature.

Objectives: This review aims to sum up the epilated human louse Pediculus humans capitis including its frequencies, circulation, and spread . Moreover, we describe the biological and morphological aspects of head lice, the prevalence of head lice infestations, various diagnostic and therapeutic processes in this context. Last of all, we discuss the measures for prevention and control of head lice and the implication of this parasitic disease for population's health.

Conclusions: Head lice are one of the enormously prevalent parasitic species that present a great deal of threat and impact on public health in terms of social and economical consequences. To resolve this problem and improve population and communities' health, correct identification and management, including prevention and control measures provision, are necessary.

Keywords: Pediculus Humanus Capitis

Introduction

Human pediculosis is an infection by a parasite which is common in all countries, both industrialized and those developing. Pediculosis human's humans (Linnaeus 1758) and Pediculosis human's capitis (De Geer 1767) are two obligatory ectoparasites that infest the body or head of their hosts, scalp, and skin. It is rare for this symptom to occur with others: when it develops without any other related symptoms, it usually means that there is no serious problem even though it can be annoying(1) . The parasites primarily affect children between 3 and 11 years old; these small parasitic insects that cannot fly sustain themselves only on human blood(2) . They are transmitted through direct physical contact or sharing personal belongings such as hats, combs, or hairbrushes. Notably, those are the only mode of transmission (3). The body of a head louse is flat and elongated, about the size of a sesame seed. It has six legs with hooks that help it hold onto hair. The female louse lays small eggs (nits) on the hair shaft; these can be seen near the ears or at the back of the neck. Head lice can also be found on eyebrows and eyelashes(4).


Fig. (1): Pediculus humanus capitis

Morphology :

Head lice have a distinct morphology that may be utilized to differentiate them from other forms of lice. Adult head lice are petite, wingless insects measuring between 2 and 3 millimeters in length. They have six legs with claws that enable them to attach to hair shafts. Their bodies are flattened and elongated, and their heads contain two huge complex eyes and two antennae (5). Head lice are typically light brown or gray in appearance, but if they have recently dined on blood, they may seem darker. The existence of head lice can be divided into three distinct phases: egg (commonly referred to as nit), nymph, and adult(3). Adult female head lice lay their eggs near the scalp; this location provides the right temperature for hatching. The nits are oval in shape and stick firmly to the hair shafts with a sticky substance

produced by the female head lice. The life cycle of head lice consists of three stages: egg, nymph, and adult — laid near the scalp that makes them ideal for incubation due to proximity with proper temperature on hair shafts(6). Around eight to ten days afterward, the eggs hatch into nymphs, which are miniature versions of the adult head lice. Nymphs molt thrice before reaching adulthood and the duration is about nine to twelve days. An adult head louse can sustain itself on a human host for 30 days at most— where they lay eggs post mating to reproduce (7).

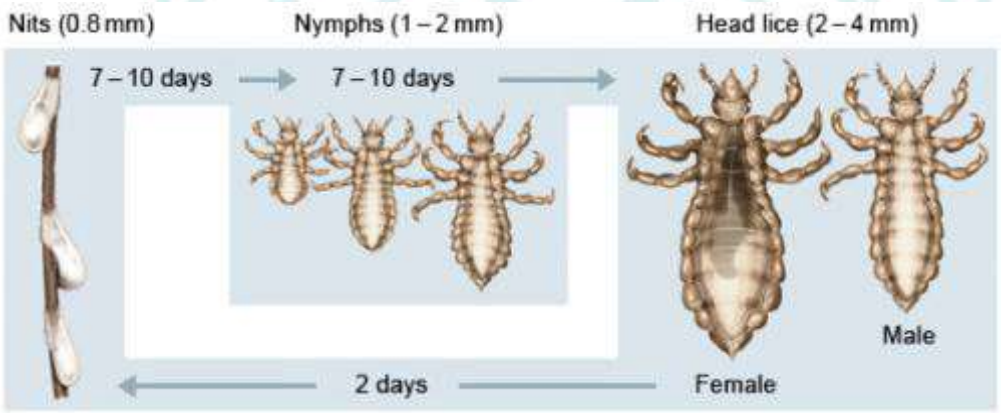

Fig (2): head lice life cycle

Diagnosis and treatment:

Typically, a visual check of the scalp and hair is used to determine the presence of adult lice or their eggs when diagnosing a head lice infestation (nits). This may be accomplished by combing the hair with a comb with fine teeth and checking the strands and scalp for lice or nits(8). After a diagnosis

of a head lice infestation, numerous treatment methods are available. Common treatments for head lice infestations include pyrethrin and permethrin-based over-the-counter (OTC) drugs. These medications act by disrupting the central nervous system of lice and are lethal(5).Aside from head lice infestation, malathion and ivermectin can be acquired through prescription. Malathion is a topical pesticide used to kill lice while ivermectin is an oral drug that kills lice (6). Alongside medication-based therapies, manual removal of lice and nits can be helpful. This involves combing the hair with a fine-toothed comb and physically getting rid of the lice and nits—an effective method which does not involve potentially dangerous chemicals even though it is labor-intensive (7).

Epidemiology:

It should be noted that the prevalence of overweight depends on the demographic, geographic, and socio-economic characteristics. Infections with head lice are found more frequently among school children between three to eleven years old in developed nations, and among girls more than boys. Studies show that head lice are prevalent in poor countries; 60% of population of the affected age group in a specific country have the infestation (7). Sexual contact, sharing of such items as comb, hair brush, and poor on personal cleanliness are some of the bondage that enhance the spread of this sickness. Homeless people and refugees are especially prone

to get head lice because of the crowded accommodation in shelters and camps (9).

Prevention and control:

1. Avoiding close physical contact with someone who is ill and not touching things which the hair of an infected person has come into contact with like combs, hats, towels, scarves, brushes as well as pillow cases. (10).
2. Head lice screening programs have not shown any evidence of bringing down the number of head lice cases in schools significantly over a long period. In addition to this, they lack cost-effectiveness. The large part of the infestations that are found to be active contain only a few lice and regular inspections do not help identify them (11).
3. A possible reminder for the parents might be the need to ensure a child's head is checked both before and after they have been allowed to experience a sleepover (12).
4. The guidance for individuals is that they should avoid resting on a bed, sofa, cushion or rug if there is likelihood of its having been in contact with an infected person (13).
5. Any relative, or the parents/guardians of the child's playmates should be informed by the parent/guardian of the infected child of the head lice infestation. Any head of a family who is infected by has to check all

the other members of the family that may also be infected, and treat them (14).

6. Immerse all combs and brushes that have been used on someone with a case of head lice in isopropyl alcohol or 2% Lysol® solution or hot water (that is not less than 130°F [55°C]) for 5 to 10 minutes (15).
7. Clothing and articles that an infected person has come into contact with within 48 hours prior to treatment should be laundered at a high temperature and exposed to high heat for at least 15 minutes. (11)

Conclusion:

Lice infestations are a widespread concern, especially among youngsters. This article examined the epidemiology, morphology, diagnosis and treatment, prevention and control, as well as the public health consequences of head lice infestations , head lice infestations are a major public health problem with considerable social and economic ramifications. To address this problem and promote the health and well-being of individuals and communities, a comprehensive approach that combines effective diagnosis and treatment with preventative and control techniques is required.

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