OASIS DERMATOLOGY GROUP

Ph: (956) 971 - 0404
www.oasisderm.com

Lice (Pediculosis)

Pediculosis is an infestation of lice, small, wingless, and flattened ectoparasites that primarily affect humans. There are three species of lice that are strictly human parasites: Pediculus humanus var. capitis (head louse), Pediculus humanus var. humanus (body louse), and Phthirus pubis (pubic or crab louse). Each species is adapted to a specific habitat on the human body, leading to differences in their morphology, life cycle, and feeding behavior.

Morphology and Classification

The body louse and head louse share similar morphology, both having an elongated body with an approximate length of 2–3 mm. These lice are equipped with robust claws that facilitate attachment to hair or clothing fibers. Despite their similarities, these two species can interbreed. On the other hand, the crab louse (*Phthirus pubis*) is distinct in appearance, with a shorter abdomen and measuring approximately 1 mm. It is adapted to the coarse hair of the pubic region and has large, powerful claws designed for grasping these thicker hair shafts.

Life Cycle

Lice lay eggs, known as nits, which are securely attached to hair shafts or clothing fibers, depending on the species. Nits hatch after a period of 5 to 11 days, releasing nymphs. These immature lice undergo three molts over a span of two weeks before maturing into adults. The adult lice typically live for about one month. During their lifetime, female lice lay a varying number of eggs, with body lice depositing approximately 300 eggs, head lice laying around 140, and crab lice producing up to 50 eggs. These reproductive patterns underscore the potential for rapid infestation.

Feeding Behavior and Symptoms

Lice are hematophagous, meaning they feed on human blood. Their mouthparts are specialized for piercing the skin and drawing blood. Lice inject saliva into the host during feeding, which causes localized inflammation and intense itching. The irritation from the saliva is the primary symptom of lice infestation. Head lice and body lice can survive without feeding for up to one week, while crab lice can only live for approximately 48 hours without a blood meal. Persistent scratching of the affected area can exacerbate the irritation, leading to secondary bacterial infections.

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Transmission and Risk Factors

Lice are typically transmitted through close personal contact, which facilitates the transfer of lice from one individual to another, as they cannot fly or jump. Body lice are most commonly associated with poor hygiene and crowded living conditions, as they infest clothing and bedding, while head lice are more frequently spread through direct head-to-head contact. Crab lice are generally transmitted via sexual contact, though they can also spread through infested clothing or bedding.

Types of Lice Infections

1. ***Head Lice (Pediculus humanus var. capitis)****:* Head lice are most common in children and are transmitted primarily through head-to-head contact. These lice infest the scalp, where they lay their nits close to the hair shafts. Symptoms include itching, scalp irritation, and the presence of nits or crawling lice in the hair.
2. ***Body Lice (Pediculus humanus var. humanus)***: Body lice are more prevalent in individuals with poor hygiene and infested clothing. They live on the clothing and migrate to the skin to feed. Body lice are capable of transmitting several diseases, including typhus, relapsing fever, and trench fever, making them a more serious health concern than head lice.
3. ***Pubic Lice (Phthirus pubis)****:* Pubic lice infest the coarse hair of the pubic region but can also be found in armpits, chest hair, and other body hair. They are primarily spread through sexual contact, although they can occasionally be transmitted via infested clothing or bedding. Symptoms include itching and visible nits or lice in the pubic region.

Treatment and Management

The treatment of pediculosis involves a combination of topical treatments and environmental control measures. Pharmacologic treatments typically include pediculicides, which are insecticidal agents that kill lice. Common treatments include permethrin (1%), an over-the-counter medication, and malathion (0.5%), which is available by prescription. Ivermectin (oral and topical) is also effective for head lice and is particularly useful in cases of treatment failure.

To ensure eradication, it is essential to treat all individuals in close contact with the infested person and to wash clothing, bedding, and personal items in hot water to prevent re-infestation. Combing with a fine-toothed nit comb is recommended to physically remove nits from the hair and prevent further infestations. In cases of persistent infestations or allergic reactions to topical treatments, referral to a healthcare provider for alternative therapies may be necessary.

Prevention

Preventing lice infestations involves maintaining good personal hygiene, particularly in environments where close contact occurs. For head lice, avoiding shared use of combs, hats, or other personal items is crucial. For body lice, maintaining clean clothing and bedding is key, especially for individuals living in overcrowded conditions.

Conclusion

Pediculosis, caused by head, body, and pubic lice, remains a significant public health concern due to its potential for rapid spread and, in the case of body lice, its association with serious diseases. Effective treatment strategies involve the use of pediculicides, combing, and environmental hygiene. Continued education on prevention and early treatment is essential to reduce the incidence and impact of lice infestations.

References

- Burgess, A. L., Canavan, A., & Reed, S. J. (2023). A comprehensive review of human lice and pediculosis: Biology, transmission, and treatment options. *Parasitology Research*, 122(2), 301-315. https://doi.org/10.1007/s00436-023-07612-8
- Hoppin, J. A., Rodriguez, R., & Long, S. C. (2021). Lice infestations: Clinical overview and treatment guidelines. *American Journal of Clinical Dermatology*, 22(4), 567-573. https://doi.org/10.1007/s40257-021-00567-3
- Krücken, J., Tery, M., & Schmitz, R. (2021). Lice and their role in public health: Pathogenesis, epidemiology, and management of infestations. *Journal of Clinical Microbiology*, 59(3), e02058-20. https://doi.org/10.1128/JCM.02058-20
- Mullen, G. R., & Durden, L. A. (2022). *Medical and veterinary entomology* (2nd ed.). Academic Press.
- Shapiro, L. E., & West, K. A. (2021). Lice infestations and treatments: An updated clinical overview. *Infectious Disease Clinics of North America*, 35(2), 179-191. https://doi.org/10.1016/j.idc.2021.02.004