Head Lice in Children

A Real Head Scratcher for the Community

A Presentation by the National Association School of Nurses
Head Lice: Pediculosis (“Cooties”)

◆ Blood-feeding insect parasites
◆ Attach to head and neck hairs to feed from human hosts
◆ Do not transmit disease, but do cause other negative effects, such as itching and loss of sleep
◆ Most serious consequences of lice include the social cost of missed school days and associated cost of lost productivity and wages of parents who must care for children sent home from school.

Head Lice

◆ 6 to 12 million cases/year in the U.S.
◆ Organism: Pediculus capitis
◆ Signs
  – Presence of live lice
  – Pruritus (itching)
  – Tickling sensation
  – Irritability and sleeplessness
  – Scalp sores and, rarely, secondary infection

Pediculosis: Epidemiology

- Highest incidence among children 3 to 12 years old
- About 1 in every 100 U.S. elementary school children will be infested each year
- More frequent in girls
- Not a sign of uncleanliness
- All ages, socioeconomic, ethnic groups affected
- Less frequent in African Americans
  - Oval-shaped hair shaft
  - Lice in U.S. adapted to grasp round hair shaft

Photo credit: TL Meinke PhD

Life Cycle of Head Louse

- 20 to 25 days as a nymph
- 5 days as an adult
- Eggs laid close to the scalp; 5-10 eggs per day
- Mate every 3-4 hours
- Survive 23-30 days
  - Nits can survive 6–20 hours away from the host
- Require a warm environment and blood meal to survive

Life Cycle of the Head Louse
The Louse Family

Photo courtesy of TL Meinking
Keys to Effective Management of Head Lice

- Community approach to education
  - School professionals
  - Healthcare providers
  - Caregivers
  - Health departments, etc

- Accurate diagnosis
  - Prevents unnecessary treatment

- Effective treatment
  - Good efficacy to reduce re-treatment, resistance

Diagnosis

- Definitive diagnostic standard: presence of live louse on the head, or nit within 1 cm of scalp. In warmer climates, viable nits may be present >1 cm away from the scalp.
- Inspect in a well-lit area using a magnifying glass
- Some studies conclude that “wet combing” increases visual diagnosis
- Examine the entire scalp, with special focus behind the ears and nape of neck
- Itching may or may not be present
- Scabs on scalp

Relative Size of Louse

Photo credit CDC
Transmission

◆ The primary mode of transmission is “head:head” direct personal contact
◆ Secondary transmission is through sharing of personal items
  - Brushes, combs
  - Headgear
  - Bedding
◆ Lice do not jump, fly, or crawl long distances
  Infestation can occur throughout the year
  - Peaks during summer and back to school

Treatment Challenges

- Improper use of treatment (overuse/underuse)
  - Can result in resistance
  - Treatment failure
  - Safety issues
- Misdiagnosis
  - Results in unnecessary treatment
- Failure to treat

Consider the following:

- Clinical expertise of the provider
- Evidence from all sources
  - Evidence from research and theory
  - Clinical expertise
  - Assessment of the patient history, condition, available resources
- Patient preferences and values

Melnyk BM. Chapter 1: Evidence-Based Practice (3-17) and Chapter 2: Asking Compelling Clinical Questions (25-29). In: Evidence-Based Practice in Nursing & Healthcare, A Guide to Best Practice; Lippincott Williams & Wilkins; 2005.
Merging the Art with the Science

All within the context of caring

Leads to:
  Shared clinical decision-making between the family and provider

Resulting in:
  Quality patient care and outcomes

MeINyk BM. Chapter 1: Evidence-Based Practice (3-17) and Chapter 2: Asking Compelling Clinical Questions (25-29). In: Evidence-Based Practice in Nursing & Healthcare, A Guide to Best Practice; Lippincott Williams & Wilkins; 2005.
Common Treatment Overview

◆ Over-the-counter (OTC) products
  – pyrethrin (RID®, Pronto® Plus, A200®, generics)
  – permethrin (Nix®)

◆ Prescription treatments
  – benzyl alcohol lotion 5% (Ulesfia Lotion 5%)
  – malathion (Ovide® Lotion, 0.5%)
  – lindane (Lindane Shampoo)
    • Banned in California

◆ Alternative treatments (natural and home remedies)

Meinking TL. The Clinical Trials Supporting Benzyl Alcohol Lotion 5% (Ulesfia™): A Safe and Effective Topical Treatment for Head Lice (Pediculus Humanus Capitus). Ped Derm 2010; 27(1);19-24.
# Treatment Comparison

<table>
<thead>
<tr>
<th>OTC</th>
<th>Prescription</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited controlled clinical data</td>
<td>Requires definitive evidence of efficacy and safety</td>
<td>Not regulated by FDA</td>
</tr>
<tr>
<td>Affordable</td>
<td>FDA approval</td>
<td>Manual removal (combing)</td>
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<tr>
<td>Generally safe</td>
<td>Possible coverage by insurance</td>
<td>“Natural” products</td>
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<tr>
<td>Not 100% ovicidal</td>
<td>Not 100% ovicidal</td>
<td>Tea tree oil</td>
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<tr>
<td>Widespread resistance</td>
<td></td>
<td>Anise oil</td>
</tr>
<tr>
<td>Repeated treatments necessary</td>
<td></td>
<td>Not required to meet FDA efficacy and safety standards</td>
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</tbody>
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Treatment Failure

- Presence of live lice after two treatments with OTC products
- Patient cannot tolerate product
- Usually requires a prescription pediculicide

Resistance

- A concern with many head lice treatments
- Like bacteria to antibiotics, lice have shown themselves to adapt to many treatments, thus leading to resistance
- Documented resistance to:
  - OTC permethrin/pyrethrins
  - Lindane
  - Malathion – in the UK, not in US

For Any Product

◆ Evaluate the peer-reviewed literature
  – Efficacy
  – Level of evidence
◆ Understand the product information and safety
  – Use of any product should follow manufacturer’s directions
  – Rinse hair over the sink to avoid total body exposure to product
  – Cover eyes
◆ Collaborate with healthcare providers
  – Avoid diagnostic confusion
  – Seek help for treatment failure
Environmental Considerations for Head Lice Treatment
Environmental Control

- Screen others in direct contact with person who has head lice
- Launder clothes, bedding, towels and items used by infested person in the past 48 hours (130°)
- Wash and dry all items on bed, exposing to hot temperatures
- Do not share items such as grooming aids, hats, towels, clothing, pillows
- Vacuum floors, carpets, and furniture
- For items that cannot be washed, seal in a plastic bag for 2 weeks or dry clean

Preventing Head Lice

- Very difficult
- Avoid head-head contact
- Encourage children not to share personal items such as hats, brushes, pillows, etc
- Employ weekly screening of children and family members if exposure suspected

Challenges and Issues with Head Lice

◆ Misdiagnosis
  – Results in unnecessary treatment
  – “No nit” policies keep children out of classroom
  – Embarrassment
  – Negative effects on learning
◆ Improper use of treatment (overuse/underuse)
  – Can result in resistance
  – Treatment failure
  – Safety issues
◆ Indirect costs: childcare expenses, lost wages
◆ Direct costs: pediculicides, office visits
◆ Caregiver strain

Impact of Head Lice on the Community

- Annually, millions of dollars spent on
  - Treatments and lice combs
  - Physician visits
  - Parental time away from work
- Study of attendance records found 12 to 24 million school days are lost annually in U.S. due to exclusion of students for lice and nits
- Embarrassment and social stigma accompany diagnosis of head lice

Consequences

**Social**
- Entire family affected
- School head lice policies (exclusion)
  - Need for alternate childcare
  - Negative effects on learning
  - Embarrassment, social stigma

**Psychological**
- Caregiver strain
- Shared vulnerability
  - Ostracized
  - Lose integrity of self
  - Struggling with persistence
  - Managing strain

**Financial**
- Indirect costs
  - Childcare expenses
  - Lost wages
- Direct costs
  - Pediculicides/treatment
  - Doctor visits

1. Hansen AJMC 2004
NASN Position: NO to “no nits” Policies

- Pediculosis should not disrupt the education process
- Children found with live head lice should be referred to parents for treatment
- Data does not support school exclusion for nits
- Further monitoring of reinfection is appropriate
- Collaboration with healthcare providers and the community is an important role of the school nurse
School Nurse

**Pivotal role** in diagnosis, education, and referral

- Educate and support treatment attempts
- Help alleviate caregiver strain
- Understand and validate struggles
- Use rational and evidence-based approach to treatment and evaluation
- Discourage adversarial, ostracizing policies
- Encourage use of community healthcare resources
- Safeguard the education and privacy of every child while managing head lice in schools
- Participate in research

Summary of Head Lice Treatment

- Accurate diagnosis
- Product safety
- Evidence-based product efficacy
- Lack of resistance
- Ease of use
- Caregiver education
- Environmental considerations
- Healthcare provider collaboration

Conclusions

- Head lice are not a medical hazard, but a “pesky” situation with social, psychological, and financial consequences.
- It takes a village to cure a head lice infestation!
- The model of a managed, well-controlled approach to head lice treatment requires a “tool box” of resources aimed at:
  - Accurate diagnosis
  - Safe and effective treatment
  - A solid foundation of community education and assistance
"I think some parents are getting fed up with nit-picking."
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