The louse is (no longer) in the house

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Clinical question

What is the best treatment for head lice?

Bottom line

Dimeticone appears superior to traditional lice treatments, ridding 1 more in every 3 to 4 patients of lice with no increased adverse events. Dimeticone is a silicone-based product that suffocates lice.

Evidence

Trials found the following statistically significant results.

- Two RCTs compared dimeticone with permethrin.
  -A British RCT of 90 patients (aged 2 to 45)[1] compared 4% dimeticone once with 1% permethrin twice (1 week apart) and found more dimeticone patients were lice free at day 9 (80% vs 36%, number needed to treat [NNT]=3). Adverse events were similar and none were serious.
  -A Brazilian RCT of 145 children (aged 5 to 15)[2] compared 2 applications (1 week apart) of 92% dimeticone with 1% permethrin and found that more dimeticone patients were lice free at day 9 (97% vs 68%, NNT=4). Adverse events were 2 cases of ocular irritation from dimeticone.
- A British RCT of 73 patients (aged 1 to 48)[3] compared 2 applications (1 week apart) of 4% dimeticone with 0.5% malathion. Analysis (considering dropouts to have lice) found more dimeticone patients were lice free at day 9 (70% vs 33%, NNT=3).
- Other European dimeticone RCTs found cure rates of 83% to 92%[4] and 70% in patients predominantly with long-standing lice and previous failed treatments.[5]

Context

- Most lice in North America (99%) express genes associated with traditional pediculicide resistance.[6]
- Dimeticone is a silicone-based product that acts as an occlusive to suffocate lice and is applied to dry hair and left for 8 hours. It is often repeated after 1 week.[7] Other occlusive agents, such as isopropyl myristate, also appear more effective than traditional pediculicides.[8]
- In one study, less than 20% of children with nits developed active lice.[9]
- Wet combing is better than inspection for diagnosing lice.[10]
- Head lice are primarily transmitted from head-to-head contact in play and sharing beds, and occasionally by sharing objects like hats and combs.[11]
- To decrease reinfestation, wash clothes and linens used 2 days previously in hot water and dry with high heat. Put unwashable items in a sealed bag for 2 weeks.[12,13]
- Lice treatments cost about $30 and most are covered by drug plans.[14]

Implementation

Head lice are present throughout the world irrespective of socioeconomic climates, hair length, or hair cleanliness.[11,15] The typical presentation is scalp itch (often worse at night), but diagnosis should only be made by observing a living louse (normally within 4 mm of the scalp).[13] Lice treatment failures might be owing to retreatment before 8 to 10 days (ie, before eggs hatch); hair conditioner use, which prevents head lice medicine from adhering; reinfestation from another close contact; or pediculicide resistance.[13] If pediculicide resistance is suspected, try an alternative product. As only 20% of children with nits develop lice, no-nit school policies should be abolished.[11]

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Competing interests
The authors have no conflicts of interest to declare. **Dr Kolber's** kids have had lice, **Mr Nickonchuk's** kids have been spared (so far), and **Dr Pierse's** lack of hair is a natural defence against infestation.

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