Topical treatments for head lice

Review’s weaknesses may undermine its conclusions

EDITORS.—Robert H Vander Stichele and colleagues’ review of topical treatments for head lice has three major weaknesses, which, by introducing bias, may undermine the conclusions.1 2

Firstly, one third of all identified trials were not included because of Wellcome’s concerns about confidentiality. All 11 of these unpublished studies compared two of the most promising treatments—namely, malathion and permethrin (a Wellcome product). Inclusion of these studies might have challenged the conclusion that only permethrin had sufficient evidence to show efficacy. Failure to make these results available is unethical.3 4

Furthermore, the fact that the authors knowingly omitted them means that this review can hardly be described as systematic.5

Secondly, bias may also have been introduced by the fact that the 18 criteria of quality specific to the treatments were developed after the identified trials had been published. Because the authors were not blind to the studies’ results when these criteria were established their selection may have been influenced by the likely effect on decisions to include and exclude studies. The size of this potential bias is impossible to judge because the results of those trials deemed to be of unacceptable quality are not reported.6

Finally, because studies with a follow up of over 14 days were excluded, trials of other promising treatments were not given proper consideration. For example, the three trials of phenothrin with follow up of at least 21 days reported similar cure rates to those reported in permethrin.7 This challenges the conclusion that permethrin is the only treatment that has sufficient published evidence to show efficacy in eradicating head lice.

Authors’ reply

EDITORS.—Rumona Dixon and colleagues comment on the fact that we knowingly omitted from our review 11 unpublished trials, sponsored by Wellcome, comparing permethrin with malathion. We found abstracts of these trials by tracking the trial of references in advertising material. These small trials apparently showed optimal results both for the drug under investigation (permethrin, a Wellcome product) and for malathion, the comparator. As the abstracts did not permit thorough evaluation of the quality of the trials we were not able to include them in our review, and the full details have still not been released. Further obstruction to disclosure by Wellcome would indeed be unethical.

Our criteria for quality were developed post hoc and not a priori. In this first approach to a therapeutic field it was not possible to separate establishing criteria from applying them, as we explain in the method section of our publication. We have agreed to a second round of evaluation, in collaboration with the Parasitic Disease Group of the Cochrane Collaboration, after a priori determination of revised criteria and after a search for missed trials (none have been found so far) and trial results that have not been released.

We do not agree that the exclusion of trials evaluating clinical efficacy at day 21 or later meant that phenothrin, for example, was not properly considered, as these trials were small and inconclusive.

The main problem in this therapeutic field, which is riddled with ineffective products that are inadequately marketed in the developed world, is that companies uncontest the marketing of products, and their recommendations for treatments, that do not have a solid evidence base.

We agree with Gert M Laekeman that, besides effective and cost should be elements in the evaluation of products. However, we see no use for cheap products that are ineffective. So, unlike Laekeman, we think that the Belgian government’s modest investment in this review was well spent, even from a domestic viewpoint, as it will result in information campaigns to general practitioners, doctors working in the school health service, and pharmacists. The control of lice is a major issue in community pharmacy, and the principles of rational treatment should be translated into professional standards. Most of all, we hope that our review will trigger more clinical investigation by the pharmaceutical companies in this segment of the market.

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4 Several questions remain

EDITORS.—What is new in Robert H Vander Stichele and colleagues’ article about topical treatments for head lice? It serves as a literature review and does not tell more than Wellcome told two years ago about phenothrin (Nix) creme rinse. This literature search cost Belgian taxpayers about £40,000, and many questions remain.

What about concentrations? According to the conclusions, natural pyrethrum are not sufficient effective to justify their use.6 Phenothrin and bioallethrin (plus piperonyl butoxide) are semisynthetic pyrethrins mentioned in tables III and IV but mostly not quoted. As all pyrethrines are structurally related they should be compared in equal concentrations.

What about galenics? The creme rinse (permethrin) should not be taken for a shampoo as the addition of tensioactive agents can facilitate penetration into lice and nits. The galenic formulation has not been made better than creme rinse with 0.3% permethrin lacked efficacy, as shown in the figure.

What about toxicity? The authors admit that they did not take malathion into account, but is that acceptable? Let us take malathion as an example. To be effective the treatment lotion has to stay in contact with the head skin for eight hours. Some of the agent will be spread on the bedclothes after an evening treatment, so that there is a risk of ingestion, especially by children. For lindane (which is considered being ineffective) the acceptable daily intake is 10 µg/kg; that for malathion is 20 µg/kg and that for pyrethrine 40 µg/kg. No direct toxicity has been reported during normal use of pyrethrine.

What about the price of the products? This is an important factor, affecting patients’ adherence to therapeutic recommendations.

What about resistance? It is advisable to support double blind randomised studies by carrying out fundamental parasitological investigations in France various criteria are used in the study of pediculocidal efficacy and resistance.3 They need consideration.

I would ask why the Belgian Ministry of Health did not support a multicentre field study in addition to this basic literature review. Such a study could take into account the factors mentioned above. Maybe this is still to come.

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