TITLE: Mefloquine for the Prevention and Treatment of Malaria: Safety

DATE: 12 September 2016

RESEARCH QUESTION

What is the evidence regarding the neurotoxicity of mefloquine for the prevention and treatment of malaria?

KEY FINDINGS

One systematic review, two randomized controlled trials, and one non-randomized study were identified regarding the neurotoxicity of mefloquine for the prevention and treatment of malaria.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published up to September 1, 2016. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.
Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Any adult (including pregnant women) who has received mefloquine</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Mefloquine (Lariam – but it is no longer branded) for the prevention and treatment of malaria</td>
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<tr>
<td>Comparator</td>
<td>No active comparator; Any other antimalarial</td>
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<tr>
<td>Outcomes</td>
<td>Acute neurotoxicity (while or shortly after the person has taken mefloquine); Long-term neurotoxicity (any neurologic/neurotoxic effect that could be traced back to past mefloquine use)</td>
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<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies</td>
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</table>

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials and non-randomized studies.

One systematic review, two randomized controlled trials, and one non-randomized study were identified regarding the neurotoxicity of mefloquine for the prevention and treatment of malaria. No relevant health technology assessments or meta-analyses were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

One systematic review\(^1\), two randomized controlled trials\(^2-3\) and one non-randomized study\(^4\) were identified regarding the neurotoxicity of mefloquine for the prevention and treatment of malaria. The authors of the systematic review\(^1\) observed that mefloquine was associated with adverse neuropsychiatric outcomes, especially when compared to other antimalarials, including atovaquone-proguanil and doxycycline. One randomized controlled trial\(^2\) reported that patients who received atovaquone-proguanil had fewer treatment-related neuropsychiatric adverse events than patients receiving mefloquine. The authors of the study\(^2\) concluded that atovaquone-proguanil was better tolerated than mefloquine. Another randomized controlled trial\(^3\) reported that mefloquine was no more toxic than chloroquine-proguanil. The authors of the non-randomized study\(^4\) observed that the use of mefloquine was associated with neuropsychiatric adverse events and that this was more common in first-time users of mefloquine.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature found.

Systematic Reviews and Meta-analyses

   PubMed: PM19821371

Randomized Controlled Trials

   PubMed: PM11528574

   PubMed: PM9196769

Non-Randomized Studies

   PubMed: PM12242605

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APPENDIX – FURTHER INFORMATION:

Review Articles – Neuropsychiatric and Neurotoxic Effects


