MODELLING HUMAN FILARIASIS

CLINICAL STUDY OF THE OCULAR LESIONS INDUCED BY Monanema martini IN ITS MURID HOSTS

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KEYWORDS: ocular lesions, ophthalmology, murids, filaria, Monanema, onchocerciasis.

The filaria Monanema martini with skin-dwelling microfilariae induces in its natural murid hosts lesions similar to those in human onchocerciasis. This was demonstrated by histo-pathological studies (Vuong et al., 1991) but it appeared useful to evaluate the model by a clinical study. An ophthalmological analysis (Aimard et al., 1993) was performed on the two species of hosts, inoculated by one, two or multiple doses of larvae, with patent infections since at least one year. A total of 140 eyes was examined (anterior and posterior segments); a system of values was established for the different types and intensities of lesions; a file was prepared for each eye and an attempt at quantification was performed. The significant lesions were different in the two host species. In Arvicanthis niloticus, in which motile microfilariae were seen in the anterior segment, punctate keratitis was predominant. In Lemniscomys striatus, the posterior segment showed complete chorioretinal atrophy, similar to the ultimate stage of onchocercal chorio-retinitis.

The pathogenic mechanism is probably not unique and it may vary according to the species or individuals. It is noted for example that L. striatus has levels of skin microfilariae much higher than A. niloticus. M. martini represents in its natural hosts two complementary models for the study of pathogenesis and treatment of human onchocerciasis.

ACKNOWLEDGEMENTS

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REFERENCES


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Table I. - Scores of significant ocular lesions in L. striatus and A. niloticus infected with Monanema martini.

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Mono-inoc</th>
<th>Bi-inoc</th>
</tr>
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<tbody>
<tr>
<td>Ls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>19</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Mf/mm²</td>
<td>0</td>
<td>78</td>
<td>101</td>
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<td>Chor-ret atrophy Sc.</td>
<td>0.2</td>
<td>1.5</td>
<td>2.1</td>
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<tr>
<td>A.n</td>
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<td></td>
</tr>
<tr>
<td>n</td>
<td>7</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Mf/mm²</td>
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<td>3.6</td>
<td>13.60</td>
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<td>SPK-IPK Sc.</td>
<td>1.4</td>
<td>2.3</td>
<td>2.2</td>
</tr>
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</table>

Table 1. - Scores of significant ocular lesions in L. striatus and A. niloticus infected with Monanema martini.

DRUG TRIALS WITH Monanema martini: EFFECT ON THE ADULT WORMS, THE DERMAL MICROFILARIAE AND THE NATURAL MURID HOST

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KEYWORDS: macrolaricides, side-effects, histopathology, filariasis with dermal microfilariae, onchocerciasis, murids.

SUMMARY:

The filaria Monanema martini, with skin-dwelling microfilariae, which induces onchocercal-like lesions, is well appropriate for drug trials. These are performed together with a histopathological study of side-effects on the murid host.

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