

Intra-ocular pressure in onchocerciasis

Some preliminary results of a field evaluation

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Preliminary data are presented on the relationship between intra-ocular pressure and onchocerciasis. There was no significant difference in the mean ocular pressure between persons with no ocular onchocerciasis and those with microfilariae in the eye, but a significantly lower mean tension was observed in those with severe ocular onchocerciasis.

There has been much discussion about the intra-ocular pressure distribution in onchocerciasis and the role of secondary glaucomas, especially in the younger age groups (1-4). A clinical impression shared by other workers in this field (J. Anderson, personal communication, 1975) is that long-standing and severe cases of ocular onchocerciasis often show remarkably low pressure with the exception of cases of high-tension glaucoma.

The introduction of applanation tonometry in ophthalmological field surveys of the WHO Onchocerciasis Control Programme in the Volta River Basin Area, makes it possible to estimate the physiological intra-ocular pressure range in African populations and the importance of glaucomas of different origin.

Results from 11 villages situated mainly in onchocerciasis hyperendemic areas in northern Ivory Coast, Ghana, and Upper Volta have been preliminarily analysed with respect to intra-ocular pressure. All persons ten years of age or over were examined and divided into the following three groups: (a) those without any sign of ocular onchocerciasis regardless of skin snip results; (b) those with microfilariae present in the eye; and (c) those with ocular onchocerciasis where sclerosing keratitis and/or post-neuritic optic atrophy and/or an onchocerciasis retinal lesion of any degree was present.

Each eye was correlated separately, and the distribution of intra-ocular pressure (IOP) for eyes

with IOP < 25 mmHg is shown in Fig. 1. The statistical analysis is not yet complete and must be based on the number of cases, as the data may be considered "coupled".

There seems to be no significant difference between the first and the second groups concerning the arithmetic mean of the intra-ocular pressure or its distribution. The group with severe ocular onchocerciasis, on the other hand, shows a curve that is flattened out and has a significantly lower mean tension.

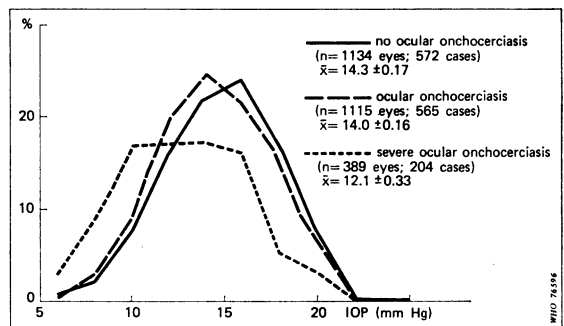


Fig. 1. Intra-ocular pressure distribution.

Fig. 2 shows the relationship between the intra-ocular pressure distributions (< 50 mmHg) on a logarithmic scale of the population without signs of ocular onchocerciasis and the group with severe ocular onchocerciasis. The tendency of the latter group seems to be to develop either low tension or glaucoma which, in the sample under study, was about four times more prevalent in this group.

There are many questions to be answered concerning the results shown here. The age distribution is certainly different in the groups and there is a male dominance in the onchocerciasis population. Probably an important factor is the presence of torpid iritis, which has been demonstrated to be far more prevalent in cases of ocular onchocerciasis,

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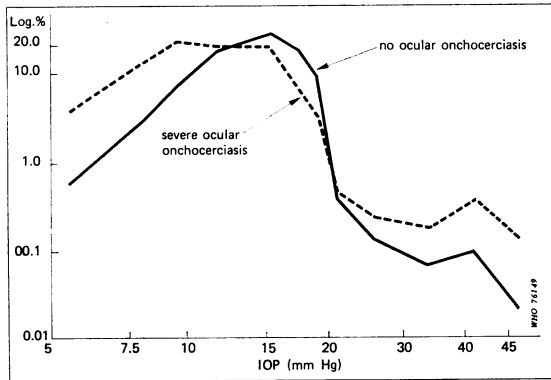


Fig. 2. Intra-ocular pressure distribution, logarithmic scales.

especially of the savanna type (5). Iritis may well explain a tendency for low tension for several years, followed later by a secondary glaucoma caused by numerous anterior synechiae in the chamber angle (3). In order to elucidate this, gonioscopy is performed when possible in cases of glaucoma. The prevalence of simple glaucomas may also be of great importance (6) and an analysis of

the age and sex distribution of patients with glaucoma would be of interest.

The data presented here are preliminary and incomplete, but they indicate the need for further investigations on the role of glaucoma as a blinding condition in populations where onchocerciasis is dominant.

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