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Further results on dapsone-resistant leprosy in Bamako (Mali)

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Summary Between 1979 and 1981 a yearly survey of dapsone resistance was performed among two groups of leprosy patients in Bamako. In a first group of patients the yearly incidence was 5.7%, 3% and 4.1%, with a mean of 4.1% per year. In the second group the yearly incidence was 3.4, 0.8 and 2.8% with a mean of 2.3%. Our results confirm research carried out in Addis Ababa (Ethiopia), where a yearly incidence of 3% was found.

The need for the use of combined therapy including bactericidal drugs is emphasized.

Introduction

In a previous publication[1] the results were presented on the prevalence of dapsone-resistant leprosy among a population of 105 originally multibacillary patients discharged over the years from the Institut Marchoux and living in a village near the Institute.

In 1980 and 1981 the same population was re-examined and biopsies inoculated into mouse foot pads for detection of dapsone resistance. From 1979 another population of leprosy patients living in and around the city, and treated by the 'Service des Grandes Endémies', the traditional diagnostic and treatment service for the endemic diseases, was also investigated. These results allow us to arrive at an estimate of the yearly incidence of dapsone resistance.

Materials and methods

These were as described previously.[1] A yearly bacteriological examination was

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performed and from those patients showing a BI $\geqslant 2$, a biopsy on ice was sent by air to Antwerp.

Results

Thirty-nine biopsies were taken. Bacilli from 10 patients did not multiply in mice, 4 strains were fully sensitive to dapsone, again illustrating that some patients had not been taking their drug recently.

As shown in Table 1 the yearly incidence of dapsone resistance during 1980 and 1981 was 3% and 4.1% respectively among the Institut Marchoux village population and 0.8 and 2.8% among the Grandes Endémies population, leading to a mean of 4.3% per year and 2.3% per year respectively.

Degree of dapsone resistance was generally less important among the latter population, as shown in Table 2. As previously found[1] there were again cases of mixed populations of sensitive and resistant organisms versus the different concentrations of dapsone tested.

Discussion

Secondary dapsone-resistant leprosy has now been found in all countries where it has been sought[3] and cases of primary dapsone resistance, multibacillary as well as paucibacillary, are being diagnosed.

Data on the incidence of dapsone resistance are scarce. The first data from Addis Ababa[2] found an alarming 3% per year leading to an overall prevalence of 30% within a decade.

Table 1. Yearly incidence of dapsone resistance of the two populations studied

	I. Marchoux Village		Grandes Endémies	
		%		%
1979	6/105(*)	5.7	9/258	3.4
1980	3/99	3	2/249	0.8
1981	4/96	4.1	7/247	2.8
	13/300	4.3/y	18/754	2.3/y

(*)as previously published

Table 2. Degrees of dapsone resistance

	I. Marchoux Village	Grandes Endémies
Resists DDS 10^{-2} g% in diet	6	6
Resists DDS 10^{-3} g% in diet	–	6
Resists DDS 10^{-4} g% in diet	1	6

Our results confirm the data,[2] since we found a yearly incidence of 4.3% and 2.3% respectively in two different populations of Bamako, with a mean of 3% per year. The difference in incidence between the two populations studied is statistically significant ($0.025 < p < 0.05$). What the reasons for this difference are remain unknown.

As shown in Table 2, 7/25 strains are of low-grade and 6/25 of median-grade dapsone resistace, meaning that at least for some time the strains might be inhibited by full dapsone dosage in man. The overall situation, however, clearly points to the necessity for combined antileprosy treatment including potent bactericidal drugs.

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