RECENT ADVANCES IN THE CONTROL OF BANCROFTIAN FILARIASIS

by

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Abstract :

Human filariasis due to *Wuchereria Bancrofti* is a disease endemic widely in tropical and subtropical regions of the World, and nearly ten thousand million of people in various countries, especially in Asia, are estimated to be residing in the areas where the disease is endemic. Furthermore, the disease is considered to be increasing in many countries along with the trend of urbanization.

In Japan, a number of endemic areas have been recorded from the main and some adjacent islands, with extremely high incidences especially in the Amami and the Ryukyu Islands, Southern Japan. A country-wide filariasis control program was initiated in 1962, based on basic studies and pilot experiments carried out by research workers in a filariasis control study group for about ten years prior to the control project. The program starts with the survey and designation of the endemic areas to be controlled, and the microfilarial examination of all the people in the target areas are aimed to be carried out at least once a year. The drug, diethylcarbamazine, is administered to all the positive cases at the daily dose of 6 mg per kg of the body weight for 12 successive days. The control of vector mosquito, usually the *Culex pipiens* complex, is also applied to these areas, by both environmental sanitation and the use of insecticides. As the results, remarkable reductions in the rates of microfilarial carriers and the clinical cases have been achieved in all the areas under the program.

The author has been engaged in the studies on filariasis and its vectors in Southeast Asian countries in cooperation with the local workers. Among various experiences, especially interesting result have been obtained in the use of American poeciliid fresh water fishes as the agents of biological control of larvae of the vector mosquitoes in highly polluted waters.

In this paper, it is intended to make a brief review of recent advances in the studies on filariasis and related diseases endemic in Southern Asia, with reference to the activity of international organizations, such as WHO, the Japan-United States Cooperative Medical Science Program, and the Colombo Plan.**

***The main text has, unfortunately, not reached us in time. Hence the full text may be published later. -Editor*

SMALL-POX INCIDENCE

by

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Introduction:

Since the beginning of the eradication program, the incidence of smallpox in Nepal has been declining steadily. The number of reported cases for 1968, 1969 and 1970 were 249, 163 and 78 respectively. For more than 3 years, smallpox has been restricted to the Terai region only and except for a single unconfirmed case in Syangja in 1969, there has been no other case in the hills. There has been no case in Kathmandu Valley for more than 4 years.

Seasonal Pattern:

No seasonal pattern for the incidence of smallpox has been observed (Fig. 1). During

Fig 1. Smallpox Incidence

the first 3 months of 1971, 17 cases have been reported to the Smallpox Eradication Project Headquarter (SEP HQ) and the corresponding figures for 1969 and 1970 were 52 and 30 respectively.

Outbreak in 1971:

On March 22, 1971 an outbreak of smallpox in Karmaiya Panchayat of Sarlahi District, Janakpur Zone was reported to the SEP HQ by its district office. Investigation was immediately undertaken. It was found that the index case was an 8 year old girl of neighboring Chhauria Village in India who came to Karmaiya on 22 Jan. 1971. She had fever soon after arrival and developed rash on 26 Jan. During the next two months the infection spread to others through 4 generation of disease transmissions. (Fig.2).

Fig 2 Smallpox by week of onset

There were in all 17 cases with 9 deaths (Table 1). Of these 4 adults, one of whom had also been vaccinated, had variolation scars. A 12 year old girl who died was reported to have been vaccinated 2 years ago but it is not known whether the vaccination was successful or not. One 1½ year old boy who was vaccinated successfully on 17 March, developed rash on 25 March and survived. The vaccination status of the index case who returned back to India was not known.

Table 1.

Cases by Age Group and Vaccination Status

Age group	Vaccinated ^a	Not vaccinated	Unknown	Total	Number dead
Under 1 yr	0 ^b	5	1	6	5
1-4 yr	1	1	0	2	1
5-14 yr	0	0	2	2	1
Above 14 yr	4	3	0	7	2
Total	5	9	3	17	9

^a includes variolation

^b successfully vaccinated during the outbreak

The total case fatality rate (CFR) was 53% (Table 2). None of the vaccinated or variolated cases died. The CFR for non-vaccinated and unknown groups was 77.7% and 66.6% respectively. The mortality rate was highest in infants who formed the least protected group.

Table 2.
Case Fatality Rate (CFR)

	No. of cases	No. dead	CFR (%)
Vaccinated ^a	5	0	0
Not vaccinated	9	7	77.7
Unknown	3	2	66.6
Total	17	9	53.0

^a includes variolation

Apart from the mass vaccination program for protection of a sizable proportion of the population, active surveillance and prompt reporting of any suspected case of smallpox by all sections of the particularly health personnel are necessary for the eradication of the disease from the country.

BCG Immunizations

BCG inoculations are being given as a mass campaign in the districts of Kathmandu Valley, Kabhrepalanchok and Koshi Zone (Table 3). In addition MCH clinics and public health programs of a few hospitals are also immunizing children against tuberculosis in other districts. The total number of inoculations during the first 3 months of 1971 was 31059.

Table 3.
BCG Inoculations by Districts

District	Under 1 yr	1 - 4 yr	5 - 14 yr	Above 14 yr	Total
Kath. Valley	175	186	57	1	959
Kabhrepalanchok	765	2434	5327	131	8657
Koshi Zone	2074	5487	11562	1211	20234
Others	406	337	442	24	1209
Total	3960	8344	17388	1367	31059

These inoculations were mostly given by Tuberculosis Control Pilot Project, Koshi Zonal Project, MCH clinics and Maternity hospitals (table 4). BCG is given direct to all children under 15 years including newborn babies in maternity wards of the hospitals. Among the inoculees, 5-14 yr. form the biggest group (56%) followed by 1-4 yr (26.8%) and under 1 yr (12.7%).

Table 4.

BCG Inoculations by Project

Project	Under 1 yr	1 - 4 yr	5 - 14 yr	Above 14 yr	Total
TB Control Pilot Project	1289	2454	5369	131	9243
Koshi Zonal Project	2074	5387	11562	1211	20234
MCH Clinics & Maternity hospitals	495	345	130	1	971
Others	102	158	327	24	611
Total	3960	8344	17388	1367	31059

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