

Vaccination with the CHAT Strain of Type 1 Attenuated Poliomyelitis Virus in Léopoldville, Belgian Congo *

2. Studies of the Safety and Efficacy of Vaccination

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In the course of the attenuated live poliovirus vaccination trial described in the preceding paper, an estimated 46 000 African children were given CHAT strain. Among the 3400 children followed up by home visits, none developed paralytic poliomyelitis or aseptic meningitis. When bled 2-3 months after vaccination, 60 % of previously type-1 negative children had antibodies; interference by wild enteric viruses is suggested in explanation of this low figure.

Two months after the beginning of vaccination, a type-1 poliomyelitis epidemic broke out, largely concentrated in a district in which no vaccination had yet been done. No geographical, chronological or family association between vaccination and poliomyelitis cases could be found. Of a total of 99 cases, 10 were in vaccinated children; but the intervals between vaccination and onset and identification of viruses from patients indicated that no case was caused by the vaccine.

Previous vaccination with CHAT virus appeared to confer significant protection (60 %) against the epidemic type 1 strain.

A campaign of vaccination with the CHAT type 1 attenuated poliovirus of Koprowski (1957) was begun in Léopoldville, Belgian Congo, on 18 August 1958. The history of poliomyelitis in Léopoldville, the considerations which led to the use of living virus, and the development and design of the vaccination campaign have been presented in the preceding article (see page 203). The present paper is concerned with the progress of the trial up to 30 April 1959, by which date over 45 000 children had been vaccinated. The results of serological studies and of post-vaccination health inquiries are given, and cases of paralytic poliomyelitis occurring in Léopoldville after the beginning of the campaign are analysed with regard to the safety and efficacy of the vaccine.

MATERIALS AND METHODS

These are described in the first paper of this series (see page 204) and will not be further considered.

THE RESULTS OF THE VACCINATION CAMPAIGN

As discussed in the preceding paper, vaccination was limited to children under 5 years of age, as the morbidity data showed that paralytic poliomyelitis was concentrated in this age-group. The numbers of such children, according to the medical census, are given for the seven districts of the city in Table 1. There was a total of approximately 76 200 African children eligible for vaccination in metropolitan Léopoldville, 40 000 of whom were 6 months to 3 years old.

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