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THE NEED FOR REVACCINATION IN NATIONAL SMALLPOX
ERADICATION PROGRAMME AND OF LABORATORY DIAGNOSIS

by

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Epidemiological studies of smallpox cases were carried out by the National Institute of Communicable Diseases during 1971 and 1972. All hospitalized cases were investigated and in course of which some non-hospitalized cases were also detected. During 1971 there were 376 cases, of which 88 (23.4%) were amongst the vaccinated and 288 cases (76.6%) were amongst the unvaccinated. The data were analysed to ascertain when the last vaccination was done in the cases amongst the vaccinated group. It was observed that the vaccinated cases had received primary vaccination during the first few months after birth and had never been revaccinated. The age-group of these cases, which incidentally also shows the period since they were last vaccinated, is compared with the age-group of unvaccinated cases in Table 1.

TABLE 1
Age group of vaccinated and unvaccinated cases of
smallpox detected in Delhi during 1971**

Age group in years	No. of unvaccinated cases	Percentage of the total unvaccinated cases	No. of vaccinated cases	Percentage of total vaccinated cases
< 1	49	17.0	4	4.5
1 - 4	92	32.0	16	18.2
5 - 14	92	32.0	31	35.3
15+	55	19.0	37	42.0
TOTAL	288	100.0	88	100.0

**Some of the clinically diagnosed and doubtful cases were subjected for laboratory test (P.I.G. test only).

During 1972, 114 cases were detected and studied. Twenty-five cases (21.9%) were vaccinated and 89 cases (78.1%) were unvaccinated. All the vaccinated cases detected had only received primary vaccination during the first few months of their lives and had not been revaccinated. The age-group of these cases (and also the period since they were last vaccinated) is given in Table 2.

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TABLE 2
Age group of vaccinated and unvaccinated cases of
smallpox detected in Delhi during 1972*

Age group in years	No. of unvaccinated cases	Percentage of the total unvaccinated cases	No. of vaccinated cases	Percentage of total vaccinated cases
<1	10	11.2	0	0.0
1 - 4	17	19.1	4	16.0
5 - 14	33	37.1	5	20.0
15+	29	32.6	16	64.0
TOTAL	89	100.0	25	100.0

* All cases were confirmed by laboratory test including virological isolation.

From the above data, it is seen that during 1971, 77.3% of the cases had received their vaccinations 5 years or more in the past. Similarly, during 1972, 84 per cent of the cases had received their vaccinations 5 years or more in the past. Hence in spite of the fact that these cases were vaccinated they got the disease because the immunity in them had decreased thereby indicating the need for revaccination.

Need for laboratory diagnosis

During 1972, all cases of smallpox admitted to I.D. Hospital and detected during investigation are being subjected to laboratory diagnosis including virological isolation at N.I.C.D. One hundred and eight samples received from suspected cases of smallpox were positive for smallpox virus in 77 samples. Thus 28.7 percent of clinically diagnosed cases of smallpox are not confirmed by laboratory test.

In Table no. 1 above, 4 investigated infants have been shown to have suffered from smallpox whereas in the continued study during 1972, when smallpox cases were subjected to laboratory diagnosis including virus isolation, no case among the vaccinated infants could be detected. It is rare to get smallpox amongst successfully vaccinated with primary vaccination within six months. Therefore, more useful information would have been obtained had laboratory tests been done on these four cases. It is, therefore, strongly felt that laboratory diagnosis of smallpox cases should be essential.