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Tuberculosis in Children with Reference to their Immunization Status: A Hospital Based Study

Various school studies have shown that BCG has a protective effect against many forms of tuberculosis especially hematogenous. BCG vaccination does not offer absolute protection(1). The present study was undertaken to determine the efficacy of BCG vaccination among children admitted to a hospital with tuberculosis.

A total of 530 children with tuberculosis between 0-6 years admitted from 1986-1988 in the Children's Hospital of G.S.V.M. Medical College, Kanpur were studied. A detailed history was obtained from each of the cases. The presence of BCG scar was taken as confirmation of immunization. The patients were clinically examined and categorized as to the type of tuberculosis. All the cases were closely followed during their stay in the hospital and ultimate outcome.

Boys comprised of 61.1% of the cases with M : F ratio of 1.5 : 1. The age group 1-3 years had maximum incidence (46.5%). Tuberculous meningitis (TBM) was the commonest cause (68.7%) for admission among both immunized and unimmunized cases.

About 27% of BCG immunized patients suffering from tuberculosis expired whereas comparatively a smaller percentage, *i.e.* 24.1% of the unimmunized patients expired due to the disease. Nearly 51% of the unimmunized cases were relieved while only 44.2% of immunized cases were relieved of their disease.

As both BCG immunized and unimmunized cases suffered from tuberculosis including TBM it appears that BCG is not effective even in protecting one of the severe forms of tuberculosis and one of the most disabling forms as it leads to mental and

TABLE—*Relationship of Disease Type with Immunization Status (n = 530)*

Type of tuberculosis	BCG immunized		Unimmunized		Total	
	No.	%	No.	%	No.	%
Thoracic TB	21	24.4	100	22.5	121	22.8
Tuberculous meningitis	59	68.6	305	68.7	364	68.7
Tuberculoma	2	2.3	2	0.5	4	0.7
Abdominal	2	2.3	19	4.3	21	4.0
Miliary	—	—	4	0.9	4	0.7
Others	2	2.3	14	3.1	16	3.0
Total	86	100.0	444	100.0	530	100.0

physical handicaps in the majority of children. This disproves the various studies which confirmed the protective value of BCG against severe hematogenous forms of tuberculosis(2,3). Various other workers(4,5) had also reported tuberculous meningitis in BCG immunized children.

Thus this study raises the question whether the morbidity and mortality in BCG vaccinated cases are due to the BCG vaccine itself, and if so, there is a need to further study the efficacy of BCG vaccine and its complications.

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