

BCG-A DIAGNOSTIC TOOL IN CHILDHOOD TUBERCULOSIS

Pages with reference to book, From 295 To 296

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Abstract

Comparison of mantoux test and BCG in 114 cases of tuberculosis is described. BCG positivity (70.02%) was significantly higher than mantoux (49.12%). The use of BCG is recommended in suspected cases of tuberculosis with negative mantoux (JPMA 37:295 1987).

INTRODUCTION

BCG has been in use for prophylaxis against tuberculosis for many years. Its use amongst children from birth to adolescence is well established¹. It has also been used on immunotherapy in some malignancies with varying results².

In 'the last decade some workers in India have drawn attention to the use of BCG as a diagnostic tool for tuberculosis in children.^{3,4} Western workers had also emphasized the diagnostic value of BCG. ^{5,6} This study was conducted to see the value of BCG as a diagnostic test amongst Pakistani children and to compare with similar studies in India.

MATERIAL AND METHODS

One hundred and fourteen Children ranging from 4 to 11 years with tuberculosis were included in the study. Tuberculosis was diagnosed on the basis of history, clinical examination, investigations which included sputum or gastric aspirate CSF and pleural fluid for AFB examination. Lymph node and bone biopsy was done where indicated. X-rays Chest were done in every case and other parts when indicated.

BCG and mantoux test were done concurrently in each patient. 0.1 ml freshly prepared, freeze dried BCG was injected in left deltoid region. Tuberculosis 0.1 ml. of 5 T.U. PPD was injected intradermally in the right forearm. 10 T.U. was used in severely malnourished child who had negative response to 5 T.U. ⁴

American Academy of Paediatrics criteria for use of mantoux positivity' and for BCG positive result meant an accelerated reaction to complete healing in 10-15 days as opposed to a normal reaction of 7-10 weeks.

The following criteria was used as at various intervals:

- 48-72 hours 5-9 mm Mild(+)
- 48-72 hours 10-20 mm Moderate (++)
- 48-72 hours 21-30 mm Severe (+++)
- 5-8days Pustule formation
- 10-15days Healing with scab formation.

RESULTS

One hundred and fourteen cases, 66 male (57.7%) and 48 female (42.3%), of all forms of tuberculosis are included. Over 1/3rd of total (35.08%) were due to tubercular meningitis. The other major group

was pulmonary tuberculosis, pleural effusion and consolidation (35.5%).

Other forms included were tuberculosis of lymph node, abdomen) bone and joints miliary T.B. was seen in 2.8%. The ages ranged from 4 months to 11 years. Majority were of pre-school age (61.4%) 1-6 years.

Fifty Six (49.12%) children had positive mantoux and also BCG. Amongst remaining 58 tuberculosis negative) 24 (21.05%) showed positive BCG. Hence 80 (70.02%) were BCG positive as compared to 56 (49.12%) who were mantoux positive. In 34 (29.82%) both mantoux and BCG were negative, indicating complete suppression of hypersensitivity inspite of active tuberculosis. Complications were rare. Slight enlargement of axifiary lymph nodes was seen in 2 cases and one case developed marked hypertrophy of axillary lymph glands.

DISCUSSION

This study shows BCG skin test to be more sensitive than mantoux in the detection of tuberculosis allergy. Similar result has been reported from India.^{3,4,7} Adverse reactions were minimum, as in WHO⁸ and Indian publications.^{4,9}

We have found the following interpretation of Udani⁹ very helpful. Positivity of 5 -9 mm or more in unvaccinated children of .under 5 years means infection, compared to 10- 20 mm or more in vaccinated children of under 5 years. This was observed in children (1-6 years) who showed induration of 10-15 mm, presence or absence of pustule/vesicle and completion of the whole process in 10-15 days. BCG was more often positive in malnourished and severely diseased children.

BCG is more helpful than mantoux as a diagnostic test and can safely be given at any age, even amongst malnourished severely infected and previously vaccinated children.

REPERENCES

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