

BCG Vaccination and Tuberculous Meningitis

Tuberculosis continues to be prevalent in developing countries. We see quite significant number of cases of its serious complications like tuberculous meningitis with high morbidity and mortality. There is enough documented evidence that BCG vaccine significantly prevents serious complication of tuberculosis like TBM.

Unfortunately, immunization coverage is very low in state of Bihar.

I would like to add that recent booklet by IAP on immunization does not consider BCG revaccination necessary if child has been BCG vaccinated in absence of scar.

As a consulting pediatrician I need your expert opinion on certain issues

1. Children without BCG scar with history of BCG vaccine being given.
2. Children without BCG scar without definite history of BCG vaccine given.
3. Children with no history of BCG vaccine being given.

I need the clarification under which circumstance BCG revaccination should be considered and up to what age BCG vaccine can be given in unprotected child.

Arun Shah,
(Organizing Secretary)
XVIIIth Bihar Pedicon,
Child Clinic,
Juran Corapra Chowk,
Mazaffarpur 842 001,
Bihar, India.
E-mail: drarunshah@hotmail.com

Reply

When there is no BCG scar it is not possible to know by any simple tests about presence of immunity in those infants which is due to persistence of 'memory T cell' population. For knowing immunity invitro studies carried out in infants who had received BCG with or without scar showed significant positive results in lymphocyte transformation test (LTT) and in lymphocyte migration inhibition test (LMIT) suggesting that all the infants had positive immunity(4). This suggests that those infants, who have definitely received BCG will have positive immunity. On the other hand repeat BCG vaccination do not give any serious adverse reaction.

UIP program of GoI recommends that any child not having BCG scar after 3 months of vaccination should receive repeat BCG vaccination. There is no mention of age in the recommendation, but UIP targets only infants so automatically age is up to one year.

Last booklet by IAP on Immunization of 2003-2004 states that "It is not necessary to repeat BCG vaccination in children who do not develop a scar(5). Scientifically this is a correct statement but in public health it is not possible to take and get correct history of vaccination. So it would be wiser to follow GoI recommendation of repeating BCG in all the infants who do not develop scar. BCG vaccination can be given up to any age. In certain countries (Mongolia, China) boosters of BCG is still practiced. But as hematological complications of tuberculosis are usually more common till 5 years of age, it may be given till 5 years of age.

So for all the following three issues BCG can be repeated:

1. Infants without BCG scar with history of BCG vaccine being given.
2. Children without BCG scar without definite history of BCG vaccine given. (upto 5 years of age).

3. Children with no history of BCG vaccine being given (upto 5 years of age).

BCG vaccine can be given up to 5 years of age in unprotected child.

Raju Shah,

*Ankur Neonatal Nursery and Children Hospital,
"SHARAD" Near Dipali Cinema,
Ashram Road,
Navarangpura,
Ahmedabad 380 009
Gujarat,
India.
E-mail: rajucshah@lycos.com*

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