# SUMMARY

People with latent tuberculosis infection (LTBI) are infected with the bacteria that cause tuberculosis, but have not developed active disease. Yet they are at higher risk of developing the disease. For this reason, it is important to analyze both the prevalence and the risk of infection in a population.

TB will not be controlled as long as we neglect childhood TB infection. Active search for childhood TB infection are necessary to increase the sensitivity of case detection in communities.

The main aim of this study has been to estimate the annual risk of tuberculosis infection among school children in two villages (Kafr Saad and Meit Radi) in Qaluobia governorate from April 2009 to April 2010, in order to measure the magnitude of tuberculosis problem in school children of rural population.

The study included 950 primary school children. The age of studied children varied from 6-14 years. The survey included all children regardless the history of previous BCG vaccination or the BCG status.

For the subjects included in this study, the following steps were done: examination for the presence of BCG scar and tuberculin skin testing to all children, using Mantoux technique, to calculate the infection rate. For positive reactors; history taking, physical examination and chest X-ray was done to exclude active tuberculosis.

Tuberculin retesting to the prior negative children was done at 12 months interval and the percentage of the convertors was estimated to calculate the annual risk of infection.

The data obtained were tabulated and analyzed statistically and geographically. The following results were obtained:

Regarding the BCG status; the percentage of BCG coverage among studied children was 41.8%. The differences in BCG coverage rates with sex and age were statistically insignificant (P>0.05).

BCG vaccination does not interfere with tuberculin surveys for estimating the annual risk of tuberculosis infection. The accumulated evidence is that the BCG vaccination with or without scar can be ignored in tuberculin survey for determining point prevalence of tuberculosis infection.

The prevalence of tuberculosis infection in school children, 6-14 years, under study was found to be about 48.6% using a tuberculin reaction of 10 mm as a cut off point between reactors and non reactors.

The prevalence of infection at the age 6-8 years was 54.9% while at 8-10 years it was 54.8% and at 10-14 years it was 51.1%. Yet, these differences were statistically insignificant.

At all age groups the prevalence of infection was higher in males (55.9%) than in females (51.4%).

The prevalence of tuberculosis infection was insignificantly higher in BCG vaccinated children (55%) than in non-vaccinated (52.6%).

The estimated annual risk of tuberculosis infection (ARI) in rural school children (6-14 years) in Kafr Saad and Meit Radi Villages, Benha, Qaluobia governorate was found to be about 1%.

In our study, the annual risk of infection was found to differ with different age groups, being 0% for children 6-8 years, 1%for children 8-10 years and 3.6% for children 10-14 years.

The rates of tuberculin conversion varied with sex, being in males higher than that in females. For males the ARI was 2.2% while the corresponding for females was 0%.

Finally, regarding BCG vaccination, in our study the percent of tuberculin convertors (ARI) is higher in the group without BCG scar (1.3%) than in the vaccinated group (0%).

From the annual risk of tuberculosis infection very valuable data about tuberculosis trends as case load, prevalence of infection and incidence of smear positive and culture positive cases can be predicted.