



APPLICATION OF SKIN IMMUNOLOGICAL TESTS FOR DIAGNOSTICS OF TUBERCULAR INFECTION IN CHILDREN FROM HIGH-RISK GROUPS FOR TUBERCULOSIS

Kolisnyk N.¹, Bilogortseva O.².

Dnipropetrovsk Medical Academy of Health Ministry of Ukraine¹,
National Institute of Phthisiology and Pulmonology named after FG Yanovsky²

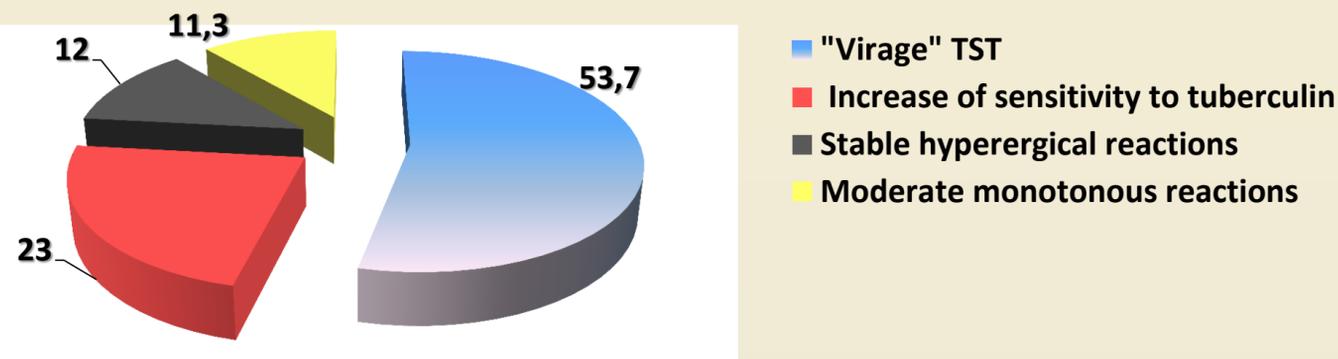


INTRODUCTION. The search for accessible (cheap) and informative tests for early diagnosis of latent tuberculosis infection and local forms of tuberculosis in children remains an actual problem for phthisiopaediatrics in Ukraine, especially in difficult economic conditions and the unfavorable epidemiological situation of children TB.

TNE AIM was comparing of efficiency of application of skin tests with the standard tuberculin (Mantoux test) and with an allergen tubercular recombinant (ATR, Diaskintest) in children with established and unidentified contact with tuberculosis patients.

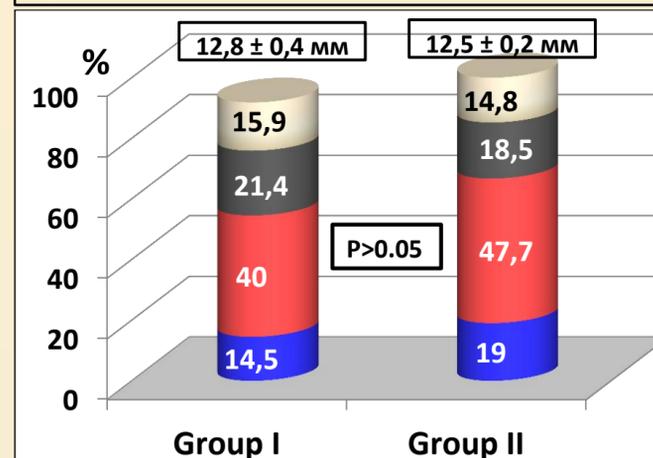
MATERIALS AND METHODS OF RESEARCH: An inspection of 1,765 children aged 1 to 17 years old was carried out. In addition to the standard clinical (Mantoux test) and radiologic methods, we included the test with Allergen Tubercular Recombinant (ATR, Diaskintest) and computed tomography of the chest organs and mediastinum. All the children were divided into 2 groups: I group consisted of 759 children infected by Mycobacterium tuberculosis (due to result of Mantoux test), who lived in families with tuberculosis patients. The second group comprised 1006 children who were also infected by Mycobacterium tuberculosis, from epidemiological safe family surroundings (unknown contact). Figure 1 shows the types of tuberculin sensitivity in group II.

Fig.1 Types of Mantoux test in group II (in dynamics)



RESULTS. Analysis of the results of tuberculin skin tests (TST) in contact members and children from a healthy environment showed no significant differences in the intensity of tuberculin sensitivity. Most often in the compared groups reactions registered oneself with a weak (5-9 mm) and moderate sensitiveness to the tuberculin (10-14 mm), here the middle size of infiltration was (12,8±0,4) mm and (12,5±0,2) mm, accordingly in groups, p>0,05. (Figure 2).

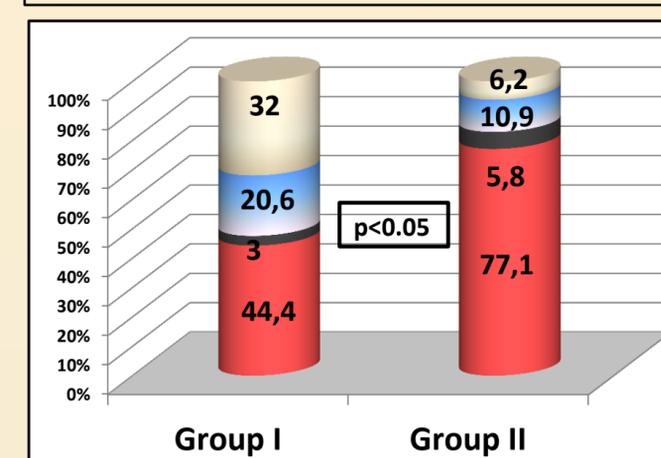
Fig.2 Results of Mantoux test in groups (size)



■ 5-9 mm ■ 10-14 mm ■ 15-16 mm ■ >17 mm ■ Negative ■ Doubtful ■ Positive ■ Hyperergical

However, the results of tests with allergen tubercular recombinant (ATR) significantly different between groups observation: among contact three times more positive responses were recorded - in 422 (55.6%) than children with a healthy environment - in 172 (17,1%), p<0,05. The degree of intensity sensitivity to ATR in contact children was significantly higher than children with a healthy environment, which the average size of infiltration also shows - (15,7 ± 0,3) mm (13,4 ± 0,3) mm, respectively, p<0,05

Fig.3 Results of Diaskintest in groups



Computed tomography of the chest was performed in 306 children with positive and doubtful reactions to an allergen tubercular recombinant (ATR, Diaskintest). Different changes in the lungs or intrathoracic lymph nodes were detected additionally in 213 individuals (12.0%), while using standard methods beam changes registered only in 43 children (2,4%), p <0,05.

The following changes in lung and intrathoracic lymph nodes were revealed: signs of active tuberculous process in 43.4% of the examined, first detected changes in the calcification stage - in 29.2%, in 2.6% of children with post-tuberculosis healed changes, reactivation of the process was diagnosed. Significantly more often, pathological changes were diagnosed in children with hyperergic results to ATR and among contact members.

CONCLUSIONS Comparative analysis of two skin tests showed that test with an allergen tubercular recombinant is more informative for revealing of tuberculosis in children who had contact with tuberculosis patients. The use of modern immunological tests and CT scan of chest allowed increase in the identification of local changes in the lungs, intrathoracic lymph nodes more than on 12%