THE USEFULNESS OF THE QUANTIFERON-TB GOLD IN TUBE TEST TO DETECT MYCOBACTERIUM TUBERCULOSIS INFECTION IN CHILDREN WITH TB CONTACT OR TUBERCULIN TEST CONVERSION IN BELARUS

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Currently, the diagnosis of tuberculosis is frequently based on a release of interferon-gamma test (IGRA). Its advantage, compared to the tuberculin test, is high specificity in BCG vaccinated population, the need for a single visit to a doctor, and short turn-around time.

Purpose: To compare the results of tuberculin and QuantiFERON-TB Gold In ?ube tests in children and adolescents from families affected with tuberculosis in pulmonary practice in Grodno (Belarus).

Materials and methods: 36 children aged 3-18 years under phthisiologist's care were examined. Statistical analysis was performed with a Statistica 6.0 software package using nonparametric methods.

Results: In the study group, 10 (28%) children had a history of contact with TB patients and another 26 (72%) had conversion of the tuberculin skin test without known contact. A positive result for the QuantiFERON-TB Gold In ?ube was found in 9 children, representing 25% of the subjects. In the group of TB contact children, a positive result was reported in 2 cases (22%), while among children with conversion of tuberculin reaction - in 7 (26%). There was no significant difference in the size of induration in TB contact children (the average size of induration = 6.6mm) compared to children with conversion Mantoux tuberculin skin test - 9.1 mm. In the children with a positive QuantiFERON test, an average size of induration (8.4 mm) did not differ from the group of children with a negative test result - 8.4 mm. In assessing the level of INF-gamma in the children with positive and negative tuberculin test results, it was found that children with a negative Mantoux test (infiltration smaller than 5 mm) had the mean level of INF-gamma of 0.81 IU/ml (0.44-1.10), which was significantly lower ($p = 0.03$) than in those with positive tuberculin test - 1.54 IU/ml (1.34-1.93). There were no differences in the average level of INF-gamma in the children with BCG scar of a small size (3-4 mm, $n = 24$) compared to children with scar measuring 5 mm or more ($n = 12$).

Conclusions: The results confirm that the usefulness of the tuberculin test is lower compared with the QuantiFERON test in the diagnosis of latent TB infection. Of the 36 children who were referred to chemoprofilaxis, only nine had a positive result of the QuantiFERON-TB test.