PREDICTING THE RISK OF LOCAL TUBERCULOSIS IN CHILDREN WITH LATENT TUBERCULOSIS INFECTION

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Abstract

Children with LTBI represent a large risk group for reactivation of the tuberculosis process at any time. The available diagnostic methods do not answer the question regarding the risk of local TB formation in them.

Aim: to present a model for predicting the risk of developing localized tuberculosis (TB) in children with latent tuberculosis infection (LTBI).

Materials and methods: 275 children with LTBI and 116 children with newly diagnosed TB were examined. After ranking 57 clinical signs and risk factors, the most significant of them were identified and their diagnostic coefficients (DC) were determined. The essence of the model is to calculate DCs with further calculation of their sum, based on the numerical value of which it is possible to predict a low and high risk of developing a local form of TB in children with LTBI.

Results: The effectiveness of the prognosis model was confirmed by the results of observation of 228 children with LTBI. Using this model, it is possible to predict the low and high risk of developing localized TB in children with LTBI. The values of the diagnostic coefficients can independently predict the course of LTBI in a child.

Conclusions: The use of the proposed prognosis model increases the accuracy of predicting the risk of developing a local form of tuberculosis in children with latent tuberculosis infection by 29.4%, compared with the Mantoux test, and to determine the contingents that need additional examination, preventive treatment and dynamic observation by a pediatric phthisiatrician in order to prevent the progression of LTBI into active tuberculosis. In conditions of quarantine and limited access of patients to medical services, the proposed model for predicting the risk of developing localized TB in children with LTBI can serve as an additional tool in the practice of a pediatric phthisiatrician.

Key words: children, latent tuberculosis infection, predicting the risk

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