

---

**SCIENTIFIC RESEARCH GROUP:**

**Bodnia Kateryna Igorivna** 

doctor of medical sciences, professor  
head of the department of infectious and pediatric infectious diseases,  
parasitology, phthisiology and pulmonology  
*Kharkiv National Medical University of the Ministry of Health of Ukraine, Ukraine*

**Zosimov Anatoly Mykolayovych**

doctor of medical sciences, professor  
professor of the department of infectious and pediatric infectious diseases,  
parasitology, phthisiology and pulmonology  
*Kharkiv National Medical University of the Ministry of Health of Ukraine, Ukraine*

**Asoyan Iryna Nikolaevna** 

docent of the department of infectious and pediatric infectious diseases,  
parasitology, phthisiology and pulmonology  
*Kharkiv National Medical University of the Ministry of Health of Ukraine, Ukraine*

**Kondratyuk Vadim Valentinovych** 

docent of the department of infectious and pediatric infectious diseases,  
parasitology, phthisiology and pulmonology  
*Kharkiv National Medical University of the Ministry of Health of Ukraine, Ukraine*

---

## **PROGNOSTIC SIGNIFICANCE OF SOME PHENOTYPIC FACTORS IN THE EFFECTIVENESS OF CHEMOPROPHYLAXIS OF TUBERCULOSIS IN CHILDREN**

**Objective** – to study the prognostic of some phenotypic factors in the effectiveness of the prevention of tuberculosis in children with isoniazid.

**Materials and methods.** To study the role of phenotypic factors in predicting the effectiveness of isoniazid tuberculosis prophylaxis an analysis of dermatoglyphic indicators the child's gender and the inactivation phenotype of isonicotinic acid hydrazide (IAH) was performed. The examines were divided into two groups: the first consisted of children (n=52) in whom the size of the papule decreased after the end course of by 4 mm or more (effective prevention); the second (n=24) increased after the end course whether the papules remained at the previous level or decreased in size by 3 mm or less (ineffective prevention).

**Results and discussion.** In children with effective prevention, in comparison with the alternative group, the following were more often found: the following values of the angle atd (39-48 degrees) on the left palm ( $p < 0,001$ ), a small (20-40 %) of ulnar loops on the right hand ( $p < 0,01$ ), the presence of curls on the right hand ( $p < 0,1$ ), a moderate or high frequency of curls ( $> 40\%$ ) on the left hand ( $p < 0,05$ ), the total number of curls 30 % and more ( $p < 0,05$ ), moderate (33-48 degrees) value of the atd angle on the right palm ( $p < 0,05$ ) and medium or fast ( $p < 0,01$ ) type of inactivation IAH. Using the sequential procedure of Wald A.; 1947 (Gubler E., 1978), prognostic coefficients of gradations of indicator values and general prognostic informativeness (J) were determined. The rating of prognostic informativeness of indicators was determined, namely: the value of the angle atd on the left palm ( $J=1,7$ ), the number of ulnar loops

on the right hand (J=1,4), the type of IAH inactivation (J=1,3), the number of curls on the right hand (J=1,2), the total number of curls (J=1,1), the value of the angle atd on the right palm (J=0,7), the number of curls on the left hand (J=0,5). A correlation analysis was performed between the type of IAH inactivation and dermatoglyphics indicators showed that there are reliable connections between them, but their number differs between groups. In the group with ineffective prevention, the number of significant correlations (n=13) was 6 times higher than in the alternative group (n=2). This indicates significant structural phenotypic differences in the groups.

**Conclusions.** Such phenotypic factors as dermatoglyphics and type of IAH inactivation have a significant but insignificant effect on the effectiveness of the prevention of tuberculosis in children with isoniazid. In this regard, phenotypic criteria should not be taken into account independently, but in combination with others. The developed algorithm for predicting the effectiveness of the prevention of tuberculosis with Isoniazid allows, with a reliability level of 95%, to obtain correct forecasts in 55% of cases, uncertain forecasts in 40% and false forecasts in 5%.

Between the type of inactivation IAH and indicators of dermatoglyphics, but in children with ineffective prevention of such connections 6 times more than in the alternative group. This indicates that a more pronounced integration of dermatoglyphic genes and the ability to neutralize IAH is a favorable moment in general, but negative in relation to the effectiveness of tuberculosis prevention.

### References:

1. Chesnakova M.M. Genetic features of the "host-pathogen" system in the pathogenesis of the tuberculosis process / M. M. Chesnakova, 03.14.04 – pathological physiology. – Abstract of thesis. Ph.D. honey. Sciences, Odessa, 2012. 21 p. [Published in Russian language].
2. Filatova O.V., Boyko M.G. The role of genetic research in the treatment of tuberculosis. Bulletin of problems of biology and medicine. 2013. Issue 1, volume 2 (99). P. 221-223. [Published in Ukrainian language].
3. Raznatovska O.M. Physiology. Zaporizhzhia, 2014. 242 p. [Published in Ukrainian language].
4. Casart Y, Turcios L, Florez I., et al. IS6110 in oriC affects the morphology growth and growth of Mycobacterium tuberculosis and attenuates virulence in mice. Tuberculosis. 2008. V 88. N 6. P. 545-552.
5. Hladkova T.D. Skin patterns of hands and feet of monkeys and humans. M.: Nauka, 1966. 149 p. [Published in Russian language].
6. Mintser O.P., Ugarov B.N., Vlasov V.V. Methods of processing medical information. Kyiv: Higher School, 1982. 160 p. [Published in Russian language].
7. Gubler E.V. Computational methods of analysis and recognition of pathological processes. Leningrad: Medicine, 1978. 294 p. [Published in Russian language].