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VITAMINS B1 AND B12 DEFICIENCY AS A PREDICTOR OF TUBERCULOSIS SEVERITY AND PERIPHERAL NERVOUS SYSTEM DAMAGE



O.S. Shevchenko, O.M. Shvets
Department of Phthiology and
Pulmonology
Kharkiv National Medical
University
Kharkiv, Ukraine



It is known that vitamin status plays one of the leading roles in the normal functioning of the immune system. Vitamin deficiency leads to weakening of immunity and can provoke occurrence of severe infectious diseases, including tuberculosis

Goal of the study

- We aimed to study the role of vitamins B1 and B12 deficiency as a predictor of tuberculosis severity and development of peripheral nervous system damage

Materials & Methods

- We examined 89 patients with pulmonary tuberculosis. Control group consisted of 12 healthy persons.
- The concentration of vitamins B1 and B12 was measured by ELISA in blood serum in all the patients at the treatment onset and in all healthy persons.
- To find the damage of peripheral nervous system we performed stimulation electroneuromyography of lower limbs.



Results

- The level of vitamin B12 was 0.19 ± 0.01 nmol/L (median – 0.19 nmol/L) in patients with destruction of the lung tissue and 0.22 ± 0.01 nmol/L (median – 0.21 nmol/L) in patients without destruction, $p < 0.05$.
- MNCV was 49.25 ± 0.80 mm/s (median – 49.40 mm/s) in patients with destruction of the lung tissue and 53.41 ± 0.99 mm/s (median – 53.10 mm/s) in patients without destruction, $p < 0.01$.
- SNCV was 43.41 ± 1.14 mm/s (median – 42.05 mm/s) in patients with destruction of the lung tissue and 45.91 ± 0.94 mm/s (median – 46.00 mm/s) in patients without destruction, $p < 0.05$



Conclusions

Pulmonary tuberculosis leads to the disturbances in the metabolism of vitamins B1 and B12, causing their deficiency and the associated violation of impulse conduction along peripheral nerve fibers.

More severe tuberculous lesions with destruction of lung tissue and massive bacterial excretion are associated with a more pronounced deficiency of vitamins B1 and B12, as well as decrease of motor and sensory conduction velocity

Thank you for your attention!