Holamov A. I., Mirzomogomedova V. G.

THE ROLE OF NATURAL KILLER CELLS IN ANTITUBERCULOUS IMMUNITY

Scientific supervisor senior teacher Babchuk O. V.
Department of Foreign Languages
Belarusian State Medical University, Minsk

Tuberculosis is an infectious disease caused by various specious of Mycobacteria (*Mycobacterium tuberculosis*, *M. bovis* and *M. africanum*), which typically affects the lungs. Infection with *Mycobacterium tuberculosis* (MTB) is spread most commonly through the air. MTB is phagocytized in the pulmonary alveoli. It blocks the work of lyzosomes and phagosomes with the help of sulfatide and cord factor. Next phase is the latent microbiosis during which macrophages accumulate around *Mycobacteria*. During obligate bacteremia MTB moves from lymphatic system into the bloodstream and settle in the internal organs.

Cellular reactions play great role in the antituberculosis immunity. T-helper cells and Natural killer cells (NK) produce interleukin-2, chemokine and interferon-gamma. With the help of these cells the bactericidal potential of macrophages is increased and phagocytosis completes.

The role of NK-cells in the early stages of antituberculous immunity is particularly important because they can destroy infected cells immediately and stimulate cellular immune responses. Increase of the number of NK-cells in the lungs of animals during the first 3 weeks after infection was described in experimental studies of antituberculous immunity in mice. NK are the cells of innate immunity, which have anti-tumor and anti-viral immunity. They are capable to destroy cells which were infected with microorganisms (bacteria, protozoa, etc.) by excretion of proteins perforin and granzymes, that trigger a cycle of caspases reactions and lead to cell apoptosis. NK-cells secrete large amounts of cytokine gamma intereferon, which promotes activation of cellular immunity. They play a major role in the early stages of infection and in the trigger of antituberculous immunity.