

Summary

Changes in cell immune parameters with focus on NK cells in patients with pancreatic cancer in relation to therapy and depression

Pancreatic cancer (further PC) is one of the diseases with the greatest malignant potential. Most of patients die within 1 year from diagnosis, and only 2-5 % of patients survive more than 5 years. A major cause of late diagnosis of PC and so his insufficient therapeutic management is due to the late clinical signs of PC.

Despite of progress in understanding of the molecular and biological basis of tumor genesis, the prognosis of patients with PC stays during the years unchanged. One of the often clinical signs related with PC is the presence of depressive symptoms or already developed clinically depression. The association of depression and cancer constitutes an important factor affecting the quality of life and can lead to increased morbidity. Even when the relationship between the function of subcortical centers of the brain, immune and endocrine system is known, the role of long-term stress and depression in the homeostasis is often overlooked.

The mental health has a great importance for the proper functioning of the immune system from the long term. During the tumor genesis there are activated cytotoxic cells (cytotoxic T lymphocytes and NK cells) and other cell populations (macrophages, dendritic cells, B lymphocytes), which together with tumor cells have significant final effect on the character of anti-tumor immune responses. But the presence of activated immunocompetent cells itself does not prove an effective antitumor response.

Another factor affecting the homeostasis of the organism, including immune system in patients with PC is own cancer treatment. Long time accepted thesis that the cytostatic therapy can induce only immunosuppression is not completely true, but in the minds of the general public and even among experts still persists. In experimental studies, it is shown that some antineoplastic agents selectively suppress the population of immunosuppressive cells and potentiate the antitumor immune response. These findings have still no or only marginal use in clinical practice. But the knowledge of immune changes induced by both cancer and anticancer treatment is a prerequisite for understanding and further progression in new therapeutic approaches and methods in the treatment of PC.