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Effects of the adaptogenic preparation "ADMAX" on cell-mediated and humoral immunity in patients with advanced ovarian cancer.

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As is known, white blood cell lymphocytes carry out the body's immune responses. These responses come from two major groups of lymphocytes T-cells and B-cells. The T-cells provide cell-mediated immune response, while B-cells are involved in antibody-mediated or humoral immune response. Existing in the blood stream, both types of lymphocytes find and attack foreign matter: microorganisms, transformed body cells, various antigens and toxic substances. Although each type of immune response specializes in dealing with certain invaders, a pathogen often evokes both types of response. Such combined response of T and B cells more effectively keeps the body free from toxins and infections.

Data indicate that cellular immunodeficiency is associated with human cancer, and that the initiation of cancer is triggered, to some extent, by a lowering of the activity of the immune system [1]. In addition, patients with cancer are in a condition of constant psycho-emotional stress, which is a strong suppressor of the immune system. Furthermore, cancer chemotherapy, especially with cyclophosphamide, is a common cause of the decrease of the number of T-cell in peripheral blood [2].

There is evidence that extracts from some plants possess adaptogenic properties and are able to increase the nonspecific resistance of the human organism to stress [3, 4]. Extracts from adaptogenic plants are usually used as illness-preventive, fatigue-eliminating and generally fortifying remedies [5]. In this study we have used a combined preparation from adaptogenic plants called ADMAX (manufactured by Nulab, Inc. of Clearwater, Florida) in patients with severe pathology—advanced ovarian cancer.

The preparation is a combination of dried ethanol/water extracts from roots of *Leuzea carthamoides*, *Rhodiola rosea* and *Eleutherococcus senticosus*, and fruits of *Schizandra chinensis*. Twenty-eight patients with stage III - IV epithelial ovarian cancer took part in the study. All patients had been previously undergone surgical operations. Ten to twelve days following the operation, the patients were treated once with 75 mg/m² cisplatin and 600 mg/m² cyclophosphamide. Samples of peripheral blood were collected from the patients before the chemotherapy and four weeks following. The blood samples were

tested for 14 various subclasses of T, B and NK lymphocytes: CD3, CD4, CD5, CD7, CD8, CD11B, CD16, CD20, CD25, CD38, CD45RA, CD50, CD71 and CD95. Concentrations of immunoglobulins G, A and M were also determined.

The count of most lymphocyte subclasses remained unchanged upon the completion of one cycle of chemotherapy. However, changes were observed in the following T-cell subclasses: CD3, CD4, CD5 and CD8. In the control group (19 women who did not take ADMAX), the mean number of the four T-cell subclasses decreased by six percent four weeks after the chemotherapy. In nine women who took ADMAX (270 mg a day) during four weeks following the chemotherapy, the mean number of T cell subclasses CD3, CD4, CD5 and CD8 increased by 19 percent in comparison with the number in the control group. In the same nine patients, the mean amounts of IgG and IgM increased by 18 percent. It is worth mentioning that side effects such as vomiting, fatigue and emotional depression, which are usually observed in patients with advanced ovarian cancer after chemotherapy, were mitigated in the patients who were taking the preparation following the treatment.

The results suggest that the combination of extracts from these adaptogenic plants may boost the suppressed immunity in ovarian cancer patients. Further studies will enable us to explore this possibility in greater detail.

It should be noted that this study describes the influence of only one cycle of the chemotherapy on immunity of ovarian cancer patients. Patients with stage III-IV of ovarian cancer are usually subjected to six or more cycles of chemotherapy. It is possible that the effect of the extract combination on restoration of the immunity will increase with the continuation of chemotherapy.

References

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