

New modalities of greater celandine preparations (ukrain, amitozyn) application for complex treatment of cancer

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The aim of chemotherapy is to achieve the maximum anti-tumor effect and not to damage the living functions of the organism. The most of chemotherapeutical drugs possess pronounced hemato-, cardio- and nephrotoxicity. Ukrain and amitozyn are compounds that belong to a new group of antiproliferative substances, greater celandine alkaloids and thiophosphoric acid derivatives, that have no immunosuppressive action, but they are capable to modulate immune response. The results of National Cancer Institute have shown malignocytolytic action of Ukrain against tumor lines tested. The mechanism of Ukrain action was defined on tumor cell lines AsPcC1, MIAPaCa2 and BxPC3. The drug was found to cause G2/M arrest and apoptosis in tumor cells. The analysis of cellular cycle of peripheral lymphocytes in healthy volunteers revealed no differences in the level of apoptosis cells, which explains the selective action of the drug. *In vivo* experiments proved that even long-time administration (6 months and more) of ukrain and amitozyn caused no severe toxic effects.

Up to date pancreatic cancer remains one of the most aggressive and resistant to chemotherapy cancer diseases. Median survival time is 4,6 months, less than 10 % of pancreatic cancer patients survive up to 1 year after being diagnosed. The results obtained in controlled randomized clinical studies, carried out at university clinics of Kyiv and Ulm, have shown the efficiency of Ukrain application for pancreatic cancer patients. These results are also presented in Langenbeck's Archives of Surgery. Median survival time was 5,2 months had the patients, treated with gemcitabin (1000 mg/m²), 7,9 months, patients treated with Ukrain (20mg) and 10,4 months patients, who received ukrain and gemcitabin. In studies performed in Kyiv on 21 patients, who received Ukrain, life quality (evaluated according to pain syndrome intensity, analgesics intake and Karnovsky index) remained higher throughout the study.

Colorectal cancer with liver metastases is currently considered to be incurable disease. However, new intraarterial therapy protocols have allowed to prolong the survival of such patients up to 25,7 months. At the Department of General Surgery (Bohomolets National Medical University) headed by Prof. Zemskov we started innovative methods for cancer treatment using greater celandine preparations: intra-arterial administration of ukrain and amitozyn, including intraoperative administration. Also, we optimized the schemes of neo-adjuvant and adjuvant therapy with greater celandine preparations. Considering pronounced malignotoxic action of both preparations, the possibility of their administration during operation, when there is a high probability of cancer cells spread, is the real breakthrough in cancer treatment. The data concerning the survival of patients with metastatic liver cancer with initial localization in bowels, kidney, and mammary gland, when they were treated intraarterially with ukrain and amitozyn, is partially presented at international congresses.

The data concerning the combination of ukrain with intermittent androgenic blockade in prostate cancer arouse considerable interest at the International Anticancer Congress, conducted in 2005 in Paris. This mode of treatment resulted in objective tumor response in 85% of patients and median value of PSA reduction was 84% one month after a course of treatment and 95 % in 3 months.

Modern oncology has only a few anticancer drugs with low toxicity. The data on clinical application of ukrain and amitozyn give grounds to confirm their efficiency in the treatment of some cancers with minimal damaging action on healthy organs and issues.

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