

## CONFERENCE REPORT ON XI CONGRESS OF UKRAINIAN ONCOLOGISTS (SUDAK, CRIMEA, 2006)

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XI Congress of Ukrainian Oncologists took place on May 29 — June 2 in Sudak, Crimea. 1,300 participants from all regions of Ukraine and guests, including scientists from CIS countries (Russian Federation, Moldova, Belarus, Kazakstan), France, Finland, Poland, Israel, Canada, USA, representing 15 research institutes, 25 institutions of medical high education, 27 oncologic centers have participated in this forum. In Sudak prominent clinical oncologists, researchers and administrators of the Ukrainian system of Health met together.

In Ukraine, as in other developing countries, tendency to steady increase of malignant neoplasia cases was registered. According to database of National Cancer Register, cancer incidence and morbidity exceeds 160,000 and 335.6 cases on 100,000 of population respectively.

In the context of the Congress, the most important strategies for diagnostics and therapy of oncologic diseases were discussed, and issues of organization of cancer prevention were raised. It was stated that the progress in solving mentioned problems is possible only on the base of achievements of advanced experimental oncology creating theoretical bases for modern clinical oncology.

In a large part the plenary reports were dedicated exactly to theoretical aspects of oncological science, in particular, these of molecular oncology.

In a number of reports it has been concluded that malignant transformation of cells appears as a result of independent accumulation of mutations and epigenomic modifications, leading to the aberration of cell cycle regulation and apoptosis, immortalization, genetic instability, changes in cell morphology, cell differentiation and cell "social behavior". Mutant cell selection upon dysfunction of system controlling stability of genome, is favoring tumor progression. Oncogenes and genes-suppressors of tumor growth, as regulators of cell cycle, are playing the leading role in carcinogenesis.

Therefore, forum stressed an exclusively important role of characteristics of molecular profile of neoplasia in solving modern oncologic problems — identification of tumor markers and creation of test-systems for cancer diagnosis and prognosis. Such test-systems are based on the use of monoclonal antibodies, which may recognize not only separate proteins, their structural and functional domains, but posttranslational modifications of these proteins as well. Just molecular genetic features of neoplasia allow perform specification of pathogenesis of solid tumors and may serve as

criteria for early diagnosis and individual prognosis for the course of the disease, and can be used for optimization of antitumor therapy.

Detection of hidden disseminated tumor cells is an essential aspect of the diagnosis and early detection of metastasis. Presently, sensitive immunocytochemical analysis and RT-PCR method allow identifying one tumor cell among  $10^5$ – $10^7$  nuclei-containing hematopoietic cells. Detection of single tumor cells (micrometastasis) offer an opportunity not only for prognosis but as well is serving for prescription of effective antitumor therapy.

In a number of the reports, the development of new generation of drugs, based on the knowledge of molecular targets, using vectors and nanotechnology approach were highlighted. Investigators are supposing that further studies of structural-functional patterns of receptors, enzymes, hormones, ion channels and other components of transduction signaling pathway, will allow define from 3,000 to 10,000 novel targets for chemotherapy.

Novel original antisense and other regulatory factors will be modeled and established by bioinformatics methods. Modeling *in silico* allow not only predicting structure of single bioactive molecules, their interaction, but as well functioning of biological network in cells, which provide signaling pathways, regulating processes of differentiation, proliferation and apoptosis. Stimulation of the functioning of such metabolic network allows determine their key regulatory components, choose the target and establish biological substances with specific activity.

Significant attention was devoted to novel ideology and strategy for the treatment of oncological patients, according to which prolongation of the patient's life and improvement of its quality are of exceptional priority. Antiangiogenic therapy and vaccinotherapy (specific immunotherapy) belong to such strategies. Development of antitumor vaccines became possible because of improvement of the biotechnology methods and genetic engineering. At present time, a wide spectrum of antitumor vaccines was established: vaccines on the base of tumor cells, dendritic cells, heat shock proteins, synthetic peptides, DNAs. Some of these vaccines successfully passed experimental trials and may be used in clinic.

In conclusion, the participants of the Congress have commemorated, that presently all knowledge on functional genomics could be applied on solving modern problems in struggle against cancer.