

CONFERENCE REPORT

13TH EUROPEAN STUDENT'S CONFERENCE (ESC) AT CHARITE CLINIC*October 29th to November 2nd 2002, Berlin, Germany*

The 13th European Students' Conference (ESC) was held at Charite Clinic, Medical Faculty of Humboldt University in Berlin, Germany from October 29th to November 2nd, 2002. Charite aims on the contribution to good education of promising young scientists and future doctors. Hereby it's wish is to strengthen the European network.

The ESC is meant to be a platform for the promotion of scientific off-spring in the fields of biomedical research. Young scientists from over 40 countries, mainly from Eastern and Western Europe, have been invited to present the findings of the research projects to an international audience and to discuss their results with an interdisciplinary approach.

The ESC was organized in cooperation with several organisations such as International Federation of Medical Students' Association (IFMSA), German Medical Students' Association (GeMSA), Berlin Biomedical Exchange Office (BBEO). It was supported by the Dean of the Charite Clinic, Prof. Dr. J.W. Dudenhausen as well as by the Federal Ministry of Education and Research. The planned location of the 13th European Students' Conference was chosen at the Charite Clinic in Berlin. It was fully approved and supported by the government of Berlin and by the Federal Government. Many established scientists were invited to the conference: distinguished Professors, Chairpersons, Nobel Prize Winners and ambassadors, members of non profit making organizations providing feedback.

Several key-note lectures by well-known scientists and doctors were organized for the 13th ESC.

In lecture "How to map a gene? Impact of the Human genome project on identification of disease related genes" presented by Dr. Silvia Bähring (Germany), the short overview of the methods used in genetic studies like linkage analysis and association studies was given and also was presented the classical way of positional cloning on the basis of the rare monogenic form of hypertension and brachydactyly. It was shown how the human genome project facilitates the finding of disease related genes and mutations, what problems are still to be solved.

Dr. Juergen Eisermann (USA) presented the lecture "Reproductive medicine, so many choices, so little guidance". The practicing specialist has to combine the best therapeutic option with what's medically safe, legal, ethical, genetically sound, psychologically and socially acceptable and economically feasible.

Prof. Dr. M. Dietel (Germany) in lecture "Modern tumor pathology as a basis for cancer therapy" told about histopathologic diagnosis. Accurate and extensive histopathologic diagnosis with the use of microscopy is an essential requirement for adequate patient-

orientated tumor therapy. Within the last decade the methodical possibilities and also the significance of the pathology department have increased enormously. Not only high-resolution microscopes with internet connection but also immunologic and molecular technics with precise detection of protein and gene alteration are used. With this precision it is now possible to raise the diagnostic level from Virchow's Cellular Pathology to nowadays Molecular Pathology.

In the lecture "Induced inhibition of tumor suppressor function reveals down-stream effectors that mediate proliferation and invasion" by Dr. Anke Klippel, a novel experimental approach to investigation of molecular changes which occurred after loss of tumor suppressor function was presented. It may be induced by GeneBloc antisense or siRNA molecules in order to identify key mediators for proliferative and invasive response in cells with increased tumorigenic potential.

The 13th ESC also included workshops. We would like to say about some of them: "How to get a patient's feeling" (Margareta Kampmann, Germany), "Fundraising" (Yunus Emre Kocabasoglu, Netherlands), "Workshop on active ageing" (Dr. Krech, Germany), "Future medicine and ethics want to know what others think about medical ethics?".

Poster and oral presentations in such sections as "Neurology", "Hypertension", "Bioinformatics", "Radiology", "Tumor biology", "Oncology", "Medical education", "Mutation/polimorphism and mutagenesis" and other were held in front of a prestigious jury. The prizes were given to the authors of the best presentations.

The special attention was paid to both Tumor biology and Oncology sessions. It is very difficult to say about all oral and poster presentations. The best Tumor biology presentations were "Rationally designed hydrolytically activated prodrugs of etoposide, a promising strategy for the treatment of resistant malignancies", reported by Bjorn Lange from Germany, "Cytostatic/cytotoxic effect of ubiquitination inhibitor and proteasome inhibitor on transformed cell lines", presented by Andrzej Boszczyk (Poland), "Enhancement of the anti-cancer activity of all-trans retinoic acid by carnosic acid in NB4 human leukemia cells is associated with the induction of retinoic acid receptor beta (RARβ)", reported by Michael Steiner (Israel), "Glutathion-S-transferase thiol-related response on initial stage of hormonal carcinogenesis", presented by Polish researcher Jarek Kobiela.

The best Oncology presentations were "Cisplatin-induced peripheral neuropathy is result of vascular injury to the *vasa nervorum* and benefits from therapeutic angiogenesis by vascular endothelial growth factor (VEGF) gene therapy", reported by Ms. Anne Barbara

Tietz (Germany), “Expression of high mobility group protein HMGI-C mRNA in the peripheral blood is an independent poor prognostic indicator for survival in metastatic breast cancer”, presented by Ms. Corinna Langelotz (Germany), “Role of Fas and FasL expression at the thyroid papillary cancer at children and young adults”, reported by Dr. Anna Portyanko (Belarus), “Different sialylation patterns in tumors of salivary glands”, reported by Ms. Jana Rolincova (Slovakia) and “The prognostic value of quantitative assessment of choroidal malignant melanomas”, presented by Mr. Murgulet Jan Cosmin from Romania. Also two research projects, which were carried out at R.E. Kavetsky IEPOR, NAS of Ukraine, were presented at the 13th ESC. Their titles are “Alteration of fibrinogen levels in plasma of mice with Lewis lung carcinoma”, and “Melatonin. A possible preventive role against resistance to cisplatin”. Let us introduce our presentations.

The haemostasis system is one of the most reactive systems, which reacts on changes with high sensitivity. Fibrinogen is a central protein in the blood coagulation system. The fibrinogen level is known to be an informative indicator of the haemostasis system state.

The purpose of the work is to investigate the plasma concentration of fibrinogen in the dynamics of Lewis lung carcinoma growth. As it has been shown, the considerable increase of the plasma concentration of fibrinogen, which accompanies the tumor growth, is observed on 7th day after the inoculation, on the 13th day (when tumors became visually detected), as well as on 17th day (responding to the phase of the logarithmic tumor growth and metastasis initiation). The periods of active primary and secondary dissemination of the Lewis lung carcinoma cells related to 17–21 days and 28th days after tumor inoculation respectively, were characterized by the abrupt decrease of the fibrinogen plasma concentration. 24th day is characterized by the increased fibrinogen content. In conclusion, the dynamic changes of the level of blood plasma fibrinogen are observed during growth and progression of Lewis lung carcinoma and is related to metastasis.

The another presentation was named “Melatonin. A possible preventive role against resistance to cisplatin”. Cisplatin is widely used chemotherapeutic agent.

Cisplatin-based combination chemotherapy displays significant antitumor activity against different types of tumors, but intrinsic or acquired resistance to cisplatin is major limitation in the use of this drug. An improved understanding of resistance to cisplatin and modification of the resistance will identify targets for intervention and may facilitate prediction of clinical response. We previously reported (12th ESC at Charite Clinic, Berlin, Nov. 21–25, 2001) that melatonin, the main pineal hormone, exerts protective effect against secondary therapy-induced tumors. We have studied whether melatonin may or may not play a role in sensitivity to CP *in vitro* and *in vivo* with the use of CP-resistant human breast cancer cell line MCF-7(MCF-7/S; MCF-7/R) and mice metastatic Lewis lung carcinoma respectively.

We demonstrated that upon short-term incubation (48^h) of both sensitive and resistant MCF-7 cells with melatonin, antiproliferative activity of the hormone was not detected. On the contrary, upon long incubation (5 days) with melatonin in a concentration range 1–100 nM, an inhibition of the growth of the resistant human cell line was registered; the growth of parental MCF-7/S cells was inhibited only at the highest dose of hormone (1 nM). Moreover, the incubation of MCF-7/S & MCF-7/R cells with melatonin simultaneously with cisplatin significantly increased the cytotoxic index, compared to cisplatin applied alone. The cytotoxic effect was more clearly indicated in MCF-7/R cells upon long-termed incubation. In conclusion, melatonin enhanced the sensitivity of cancer cells to cisplatin and could exert its oncostatic action toward CP-resistant tumor cells.

ACKNOWLEDGEMENT

We would like to thank Schering AG, Bioglan, Amgen and Mathys for the kindly given financial support. Moreover, we are grateful to Organizing Committee for the unique chance to get in contact with young scientists. We would like to say, that the ESC is very successfully organized.

Kovtonyuk Oksana, Lyniv Liliana

PhD students, R.E. Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology, NAS of Ukraine