More than 180 international experts from 30 countries met for the fifth time in St. Gallen, Switzerland for a three day conference to discuss the important issue of cancer prevention. The meeting was organized and cosponsored by St. Gallen Oncology Conferences (SONK), the European School of Oncology (Milano/Italy), the International Society of Cancer Chemoprevention (New York/USA), the European Society for Medical Oncology (Lugano), Cancer Research UK (CRUK/London, UK), the Union Internationale Contre le Cancer (UICC, Geneva), the European Association of Cancer Research (EACR), the American Cancer Society (ACS/Atlanta, GA, USA) and the Swiss Cancer League (KLS/Bern, Switzerland). No support was received from the pharmaceutical industry. The local organizers were Prof. Hans-Jörg Senn, MD, Prof. Ursula Kapp, MD and Prof. Florian Otto, MD from the Tumor Center ZeTuP St. Gallen and Chur.

The first session traditionally was focussed on health politics, because the international health care systems still do not spend enough money on the important goal of cancer prevention. As Hans Jörg Senn pointed out in his welcome lecture, our health systems are still completely „treatment-oriented“! In Switzerland – and in many other countries – we spend more than 98% of our national health budget of >50 billions Swiss Francs for „cure and care“. In contrast, less than 2% are reserved for disease prevention, and only a small part of it to prevention of cancer! He even predicted that it might turn worse: As money gets short for „cure and care“. From his point of view this is short-sighted in the long run – but cheaper at present time – at least for our politicians!

Peter Greenwald (NCI, Bethesda, USA) asked the question if we make optimal use of the potential of cancer prevention. He emphasized the importance of public health policies and education, especially concerning smoking prevention and cessation as well as the fight against obesity. He strongly recommended expansion of chemoprevention research, to develop risk assessment models using new technologies and build prevention into mainstream!

The keynote lecture was held by Scott M. Lippman (MD Anderson Research Center, Houston, Texas). As opposed to Hans Jörg Senn, who emphasized the prevention versus “cure
and care” divergence he raised the possibility of a “cancer prevention-therapy convergence”. From his point of view the real target of prevention should be the status of microneoplasia that can be eradicated and detected by markers or molecular risk assessment. In his talk he focused on oral premalignancies and the incidence of head and neck squamous cell carcinoma (HNSCC). A genetic test was developed that applies a sensitive PCR technique and uses highly polymorphic microsatellite markers to determine loss of heterocigycocity (LOH) in chromosome regions containing critical tumor suppressor genes like p53. He reported that leukoplaikia lesions with LOH carried a higher risk of HNSCC. However prospective studies are still needed. Also other biomarkers for early cancer development were discussed as David Sidransky (Johns Hopkins University, Baltimore, USA) gave insights into his investigation of hypermethylation as an early marker for HNSCC, lung, prostate or bladder cancer. Ugur Sahin (Johannes Gutenberg University, Mainz, Germany) gave an interesting talk on cancer specific gene products that give rise to cancer associated autoantibodies, which are possible diagnostic markers. He found these autoantibodies can be detectable several years before cancer diagnosis. The relevance of this finding is currently unclear, but might be a diagnostic marker in the future.

Very interesting recent developments were presented on the topic of nutrition, diet and food compounds. Michael Pollak (General Jewish Hospital, Montreal, Canada) gave insights into the effect of energy metabolism on cancer risk. Risk is influenced by BMI, caloric intake, birthweight and exercise. All these factors influence serum levels of insulin and IGF-I, that mediate at least in part the effects of energy balance on risk. Anti-IGF-I-receptor drugs are in development and phase I/II trials ongoing. Anthony Howell (University of Manchester, UK) also presented a paper dealing with metabolic aspects of cancer prevention. It has been shown that continuous energy restriction (CER) or exercise reduce risk, especially in postmenopausal breast cancer. Howell could demonstrate intermittent energy restriction (IER, 650kcal on 2 days per week) may be superior or at least as effective as continuous energy restriction (CER, 1500kcal/day). Interestingly the insulin serum level was more reduced with IER. Wanda Baer-Dubowska (University of Medical Sciences, Poznan, Poland) investigated the effect of chemopreventive isothiocyanates that are present in cabbage juice and modulate the expression and activity of phase 1 and 2 enzymes like CYP1A P450 in a Wistar rat model. Also new data were presented concerning chalcones present in cloudy apple juice or in Kawa tea. Clarissa Gerhäuser (German Cancer Research Center, Heidelberg, Germany) demonstrated that polyphenols may reach the colon after oral intake in an active status and still might be capable to prevent adenoma formation. Functional studies with recovered
ileostomy effluents from patients treated with apple juice showed a transient increase in radical scavenging activity with a maximum at 4h after apple juice consumption. This suggests that polyphenols may reach the colon and exert a local antioxidant effect. Kava is a traditional beverage in the South Pacific Island region. Epidemiological information implies that kava might be chemopreventive against lung tumorigenesis. Chengguo Xing (University of Minnesota, Minneapolis, USA) presented data about a mouse model for lung tumorigenesis showing that 30 weeks of oral kava intake significantly lowered lung tumor multiplicities to a 56% tumor reduction, due to inhibited proliferation and enhanced apoptosis mediated by reduced NF-κB activation.

Chemoprevention by aspirin and NSAIDs was discussed for the first time by a panel of international experts in cancer prevention on the third and last day of the conference. The attempt was made to find an international consensus recommendation for the use of aspirin in cancer prevention. The evidence that NSAIDs interfere with carcinogenesis in the large bowel is clear. Only slight or even no evidence could be shown for reduction of breast cancer, but maybe for other cancers, e.g. lung. Toxicity and cost also was discussed by the experts. Coloscopy for example is more cost effective compared to daily aspirin. No general recommendation for the regular intake of aspirin was made by the experts. More research has to be done investigating which risk groups qualify for cancer prevention with aspirin, which dose might be the best and what could be the best duration of aspirin use. The discussion is ongoing and a consensus paper is going to be published.

The organizers plan to invite dedicated scientists, epidemiologists and clinicians, interested in primary and secondary cancer prevention already now to the next conference, which will be held in St. Gallen in early 2010.

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