

SESSION 8

S24. Prevention of Prostate Cancer: The Role of Diet and Nutrition

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Chemoprevention is the administration of drugs or other agents to prevent, inhibit or delay progression of cancer. Because of its long latency and high incidence, prostate cancer is an important target for chemoprevention. As with other cancers, development of rational chemopreventive strategies requires knowledge of major mechanisms of carcinogenesis in the prostate and identification of agents that interfere with these mechanisms. Also, to identify suitable populations for evaluation of potential chemopreventive agents and for future chemopreventive intervention, risk factors such as the presence of early premalignant lesions and genetic predisposition should be well characterized. Because of the long time period for carcinogenesis and large cohort required for an evaluable study, cancer incidence is not usually a feasible endpoint for chemoprevention clinical trials. Thus, identification and characterization of intermediate biomarkers and their validation as surrogate endpoints for cancer incidence in clinical chemoprevention trial are significant components in the development of chemoprevention agents. Prostate cancer represents a prime target for chemoprevention studies because known risk factors, hormonal dependency and precursor lesions are well documented.

Promising chemopreventive drugs of the prostate include retinoids, antiandrogens, antioestrogens, steroid aromatase inhibitors, 5 α -reductase inhibitors, vitamins D and E, selenium, lycopene and 2-difluoromethylomithine.

Several biomarkers can be used to monitor carcinogenesis in the prostate such as prostate-specific antigen (PSA), prostatic intraepithelial neoplasia (PIN), nuclear and nucleolar morphometry.

Epidemiological and clinical studies allow to risk factors for prostate cancer incidence and progression (e.g. genetic polymorphisms in steroid 5 α -reductase, increasing PSA levels following surgery). These studies are important for identifying cohorts suitable for chemoprevention intervention. Clinical trials range from evaluation of the effects of promising agents on intermediate biomarkers in men scheduled for prostatectomy, to Phase II and Phase III studies on reduction of PIN, and large, Phase III trials on inhibition of prostate carcinoma.

The concept of chemoprevention in prostate cancer is new and should in future have a significant impact on the incidence and mortality of this leading cancer threat in men.