

Earlier studies indicate that dietary fiber intake correlates negatively and fat intake positively with plasma estrone and estradiol (E2) levels in young women. Decreasing fat intake lowers plasma testosterone (T), free T(FT) and percentage FT in men. We have studied 27 postmenopausal women [9 vegetarians (VG), 10 omnivores (OG) and 8 healthy women with surgically removed breast cancer (BC)] 4 times during one year, with intervals of about 18 weeks. Each time, diet was recorded during 3 days and blood samples were drawn on all 3 days. Analysis of variance showed statistically significant differences between the groups for androstenedione (A), T, % FT, FT, % FE2 and sex hormone binding globulin binding capacity (SHBG). High protein and fat and low grain, carbohydrate, total and grain fiber intake were associated with high A, T, % FT, FT and % FE2 and low SHBG. All parameters showed this pattern in BC, but only two, SHBG and % FE2, differed significantly between BC, and OG and VG (non-paired t-test), the other differing significantly only from those of VG. It is concluded that a "Western type diet" is associated with high % FT and % FE2 and low SHBG and thus probably increases BC risk and risk for other sex hormone dependent cancers.

CORRELATIONS BETWEEN URINARY EXCRETION OF LIGNANS AND PHYTOESTROGENS AND PLASMA NON-PROTEIN BOUND SEX HORMONES AND SEX HORMONE BINDING GLOBULIN.

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During the last 7 years a number of biologically active compounds, belonging to the classes of lignans (Ligs) and isoflavonic phytoestrogens (Ph-ES), have been identified in human urine. These hormone-like compounds are products of intestinal bacterial action on dietary precursors. Urinary excretion of Ligs is particularly low in postmenopausal (pmp) breast cancer patients (BC) and correlates with fiber intake. It has been shown that the Ph-ES and Ligs are both estrogenic and antiestrogenic. Some are also moderate aromatase inhibitors. In the present study, the excretion of 2 Ligs and 3 Ph-ES was determined in the urine of 34 young women, including BC and in 20 pmp women. Preliminary results indicate that the lowest

mean excretion of these compounds occur in BC and the highest in vegetarians. Positive correlations were found between urinary excretion of the lignan enterolactone, total Ligs and Ligs+Ph-ES, and fiber intake and plasma SHBG, and negative correlations with percentage free (F) estradiol (E2), FE2 and free testosterone ($p < 0.05$ - < 0.001). It is concluded that intake of a fiber-rich food is associated with low non-protein bound sex hormone levels, probably due to stimulation of SHBG synthesis in the liver by these weak estrogens, entering portal circulation from the intestine.

ANTI-COLLAGENOLYTIC ACTIVITY OF TAMOXIFEN ON HUMAN K 562 CELLS

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Collagenolytic activity has been demonstrated in the human leukaemic cell line K 562 by employing Macartney's fluorescamine technique (FEBS Lett. 119: 327, 1980) with fibrillar collagen I as substrate. The enzymes are either free or membrane bound and the total activity is 0.60 ± 0.06 mU/ 10^6 cells. Main enzymatic parameters including optimum pH, Ca-dependence, trypsin activation have been defined. Among various effectors studied, tamoxifen (Txf), a well-known antiestrogenic compound, exhibited a strong inhibitory effect. After 3 days of culture in the presence of 10^{-6} M of Txf, 75% of the collagenolytic activity was inhibited. Hydroxy-Txf and N-demethyl-Txf are equally potent inhibitors though devoid of any direct cytotoxic effect.

K 562 cells have no binding sites for estrogens but they possess high affinity membrane-bound binding sites for H-Txf (31 femtomoles/mg protein). These findings have been evaluated with respect to their significance in the prevention of metastases.

KINETICS OF HYDROLYSIS OF NORNITROGEN MUSTARD, A METABOLITE OF PHOSPHORAMIDE MUSTARD AND CYCLOPHOSPHAMIDE

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Nornitrogen mustard (NOR) and phosphoramidate mustard (PAM) are important metabolites of cyclophosphamide. A gas chromatographic (GC) method was developed