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제 목	국문	p53 단백질 과발현에 따른 혈청 항산화비타민과 지방압과의 관련성			
	영문	p53 protein overexpression in relation to serum antioxidant vitamins for breast cancer			
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Background/Purpose : Although it is not known which stage of cancer development does the mutation of p53 gene participates, the fact that the mutation of p53 has a close relationship with the development of cancer is true. And also it is of interest to examine whether subtype of breast cancer can be identified that bear a stronger relation to specific risk factors. To investigate whether breast tumors developing through a pathway with p53 protein overexpression(p53+) show different antioxidant vitamins associations compared with breast tumors without p53 overexpression(p53-), the authors determined p53 overexpression in tissue sections of 92 patients with breast cancer by using immunohistochemistry.

Materials & Methods : Information on a wide range of life styles has been collected from all of the outpatients from 1993 to 1994 in Breast Cancer Clinic of Asan Medical Center, Seoul, Korea. A questionnaire was administered by a trained interviewer to all participants who were waiting to be examined by a physician. Among these interviewees, cancer patients had been identified as having a histologically confirmed diagnosis with a first primary breast cancer by a diagnostic procedure for cancer detection. Cancer cases were eligible if they gave no history of other previous cancer(at either the same site or a different site) and if they are 80 years or less. Potential controls were women free of any malignancy neoplasms and also free of any clinical, biochemical, or hematological manifestations of cardiovascular, hepatic, renal, or endocrinologic disorders. Among total eligible population, women whose tumor tissue sampling were possible, were taken as the case group(n=92). One hundred twenty two controls were diagnosed during the same period of time with cases.

The concentrations of α -tocopherol, carotenoids, and retinol in serum were measured simultaneously by a reverse-phase, gradient high performance liquid chromatography (HPLC) system. Representative sections were examined by the labeled streptavidin-biotin method with appropriate use of positive and negative controls throughout. Pathologists reviewed the slides and determined the positivity if more than 10% of nuclei was clearly stained without staining of normal epithelium and stromal cells. The affects of breast cancer development according to the level of serum antioxidant vitamins were determined by performing multiple logistic regression using PC-SAS 6.12 statistical program. After

analyzing all groups, the groups were reanalyzed after dividing the groups according to the presence of p53 mutation.

Results : The serum antioxidant vitamin concentrations of α -tocopherol, retinol, β -carotene, and zeaxanthin+lutein were statistically lower ($p < 0.001$) in the breast cancer group than normal control group, and also the concentration of serum cryptoxanthin was tended to be lower in the breast cancer group. Odds ratio was used to compare serum antioxidant vitamin concentrations in each p53 gene mutation positive and negative group. Most antioxidant vitamins did not show different associations with p53+ and p53- tumors. But for zeaxanthin+lutein and cryptoxanthin, risk factor associations with p53- breast cancer tended to be stronger than those with p53+ breast cancer. In case of zeaxanthin+lutein, the odds ratios were 0.19(95% CI: 0.05~0.70) and 0.05(95% CI: 0.01~0.19) in the positive group and negative group, respectively. In case of cryptoxanthin, the odds ratios were 0.94(95% CI: 0.26~3.36) and 0.54(95% CI: 0.20~1.41) in the positive group and negative group, respectively.

Conclusion : Although serum antioxidant vitamins in Koreans work as a factor that suppresses the development of breast cancer, the results of odds ratio showed that the relationship of antioxidant vitamins with breast cancer did not differ according to the presence of p53 gene mutation when breast cancer patients were divided into p53 gene mutation positive and negative groups. However for zeaxanthin+lutein and cryptoxanthin, risk factor associations with p53- breast cancer tended to be stronger than those with p53+ breast cancer.

Key words : Breast cancer, p53 overexpression, serum antioxidant vitamins