HLA Alleles in Breast Cancer

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Dear Editor,

In a recent study by Mahmoodi et al. [1] in which they investigated the association between Human leukocyte antigens (HLA) class II alleles and breast cancer, they found that HLA-DQA1*0301 allele is mainly associated with increased risk of breast cancer including early-onset of the cancer. In addition, they found significant association of HLA-DRB1*1303 allele with susceptibility and the significant participation of HLA-DQA1*0505, HLA-DQB1*0602, HLA-DQA1*0101, HLA-DRB1*1301 and HLA-DRB1*0101 alleles in protection in entire patients. The results support the hypothesis of “variation of the inherited HLA alleles play a key role in regulating the cytotoxic T lymphocytes against breast tumor antigens”.

In one of our study [2], according to the results of HLA class II allele analyses in 69 breast cancer patients, we proposed that HLA-DRB1*03, HLA-DQB1*02, HLA-DRB1*13, and HLA-DQB1*06 alleles might be involved in protection against breast cancer and good prognosis. According to results of both studies, it is thought that those

who have HLA-DRB1*13, and HLA-DQB1*06 alleles might be resistant to breast cancer development.

Taken together, it is thought that typing these special HLA class II alleles could carry a prognostic importance and consequently these protective alleles could have a potential use in either prophylaxis or treatment. In future by determining allele types a systematical screening and follow-up systems can be developed for patients who are at high risk. Furthermore, this knowledge could be used for the development of individual immunotherapeutic treatment modalities.

References

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