



Polymorphisms in promoter regions of IL-6 and IL-10 genes in breast cancer: a case-control study

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ABSTRACT. Polymorphisms in interleukin genes (*IL-6* and *IL-10*) are involved in the pathogenesis of breast cancer. This study investigated polymorphisms in the promoter regions of *IL-6* (-174G/C) and *IL-10* (-1082G/A) through a case-control study employing 80 female subjects who were pathologically diagnosed with breast cancer. All patients received follow-up care at the Mansoura University Hospital, Mansoura, Egypt. We included another 80 females (controls) from the same population, showing no signs of malignancy. Clinicopathological features were examined in the

patient groups, including the expression of estrogen and progesterone receptors, involvement of the lymph node, tumor morphology, and tumor grades. Genotyping of the promoter polymorphisms was performed using allele-specific polymerase chain reaction method. There was a significant decrease in the mean age of menarche in the patient group than that in the normal individuals. For the *IL-6* -174G/C polymorphism, there was a significantly higher frequency of the CC genotype in the patients than that in the controls (odds ratio = 5.49). Furthermore, the CC genotype was significantly more prevalent among the patients who had lymph node involvement. For the *IL-10* -1082G/A polymorphism, there was no difference in the distribution of genotypes among the patients and the control subjects. However, the tumor size was significantly larger in patients who were harboring the AA genotype than that in the patients who had AG or GG genotypes.

Key words: Interleukin; IL-6; IL-10; Promoter polymorphisms; Allele specific PCR; Breast cancer