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Abstract

important for the transmembrane transition of various other common therapeutic drugs. Recently, a polymorphism of MDR1 gene at cDNA position 3435 located in exon 26 has been shown to be correlated with clinical response to chemotherapy in cancer patients. The Anthracycline therapy, which is related to Her-2 expression in breast cancer patients, has better survival, although the mechanism of cancer cell sensitivity which expressed Her-2 to Anthracycline in its relation to P-glycoprotein expression is still unclear. The purpose of this study was to reveal those mechanisms mentioned above, which in the future could be used as the basic of Anthracycline application in breast cancer patients.

An analytical observational research in nineteen patients diagnosed between January until December 2005 with locally advanced breast cancer treated by preoperative Anthracycline chemotherapy to evaluate its predictive outcome was performed. All samples were performed immunohistochemistry, PCR, and sequencing methodology of the MDR1 target gene. The results of this study showed that the polymorphism of MDR1 gene at cDNA position 3435 located in exon 26 has been shown to be correlated with clinical response to Anthracycline chemotherapy in breast cancer patients, without affected by positive or negative Her-2 expression. Patient with T/T genotype developed clinical response, while patient with C/T genotype did not develop clinical response. Thus, our study showed that the Breast cancer patients with positive Her-2 expression is not always responsive to Anthracycline application. It means that only patients with T/T genotype at position 3435 located in exon 26 of MDR1 gene that have clinical response, while patients who do not show clinical response having C/T genotype. MDR-1 polymorphism C3435T in exon 26 may co-determine resistance to chemotherapy and provide useful information to individualize therapy.

Keyword : Polymorphism, C3435T, MDR-1, Her-2, Anthracycline, breast, cancer,

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