International Journal of PharmTech Research
CODEN (USA): IJPRIF, ISSN: 0974-4304, ISSN(Online): 2455-9563
Vol.9, No.12, pp 223-229, 2016

Effect of natriuretic peptides (BNP) gene T-381C polymorphism on the levels of BNP and NT-proBNP in patients with cardiovascular disease

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Abstract : Objectives: The study was designed to consider the impact of BNP gene T-381C polymorphism on the plasma human level of BNP and NT-proBNP and compare the results that will obtain with healthy control.
Design and methods: The present study was performed on (70) patients, (35) of them with ACS and the other (35) with HF. The study also included (22) subjects have been taken as control group. Whole blood samples received from study subjects had been used to extract DNA for the study of polymorphism in BNP gene by way of PCR-RFLP technique.
Results: The BNP gene T-381C polymorphism was detecting by using PCR-RFLP. The alleles were designated as TT, TC and CC. There was statistically no significant difference in each the genotyping distribution and allelic frequency between each patient corporations and healthy control group ($P > 0.05$). The current study showed that subjects with TC and CC genotype had the highest level of BNP and NT-proBNP in all study groups than TT genotype, also, all patients (N=70) with C allele had significant high level of natriuretic peptides than T allele.
Conclusion: T-381C polymorphism in the BNP gene affects the level of natriuretic peptides where CC genotype and C allele is associated with greater levels of BNP and NT-proBNP in cardiac patients.
Key words: Acute coronary syndrome, heart failure, B-type natriuretic peptide, N-terminal pro-B-type natriuretic peptide, polymerase chain reaction, and polymorphism.

Alaa S. Al-Ibrahimi *et al* /International Journal of PharmTech Research**,** 2016,9(12): 223-229.

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