

## Biochemical analysis of the natriuretic peptides BNP and NT-proBNP in patients with cardiovascular disease

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**Abstract : Objectives:** The study was designed to assess the serum concentrations of BNP and NT-proBNP in patients with ACS and HF and compare the results that will obtain with healthy control. In addition, we chose almost equal number of males and females to control the effect of age and gender on the levels of BNP and NT-proBNP.

**Design and methods:** The study was comprised of (70) patients, (35) of them with ACS and other (35) with HF. The study also included (22) subjects were taken as control group. The sera obtained from the blood of patients and healthy control subjects were used to measure the concentrations of natriuretic peptides (BNP and NT-proBNP) by ELISA method.

**Results:** Both the ACS and HF patients had significantly higher mean levels of BNP and NT-proBNP than control group, also HF patients had higher mean level of both parameters than ACS patients, in all comparison  $p < 0.001$ . The receiver operating characteristics (ROC) curve showed that both BNP and NT-proBNP were valid in prediction of ACS and HF with high sensitivity and high specificity, the differences in validity rates between both parameters were statistically nonsignificant, ( $P > 0.05$ ). There was a statistically significant positive correlation between the level of BNP and NT-proBNP with the age, in addition, its mean levels was higher in female than male patients with ACS and HF.

**Conclusion:** the two parameters are good predictors, highly sensitive and highly specific and accurate in prediction of ACS and HF with relatively high accuracy in NT-proBNP than BNP. Both parameters levels are elevated with progressing age of patients, in addition, its mean levels are higher in women than men patients.

**Key words :** Acute coronary syndrome, heart failure, B-type natriuretic peptide, and N-terminal pro-B-type natriuretic peptide.