

Single Serum BNP Level at First Heart Failure Clinic is the Strongest Predictor for Two Years Mortality; A Call for Policy Change

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Background:

Natriuretic peptides (NP) are important tool in diagnosis of heart failure (HF) and re-stratification. However, in settings of out-patient HF clinic, current guidelines suggest to measure NP for diagnostic purposes rather than for survival prediction. The aim of the current study was to evaluate the prognostic predictive value of a single NP test, taken at first clinic visit, for prediction of death, comparing to other known prognostic parameters.

Methods:

The study included 291 successive symptomatic HF patients {mean age 64 ± 13 years, 212 (73%) were males} with either reduced or preserved systolic function (mean LVEF $35 \pm 16\%$). Each patient was tested once for serum BNP level taken at the first out-patient clinic visit. We evaluated the association between patients' mortality and the following parameters: age, gender, BMI, NYHA class, ischemic etiology, LVEF, hemoglobin levels, creatinine clearance and BNP levels.

Results:

Over average follow-up period of 24 ± 16 months, 56(19%) patients died. Using univariate and multivariate Cox regression analysis, the single BNP test taken at the first clinic visit was the strongest predictor for mortality in HF patients; 41(28%) HF patients with BNP above median died comparing to 15(10%) patients with BNP below median who died ($p < 0.001$). Increasing death rates correlated with higher quartiles BNP levels (Figure-1). Of note, the single test BNP levels were the strongest predictor for mortality in HF patients with either reduced or preserved systolic function.

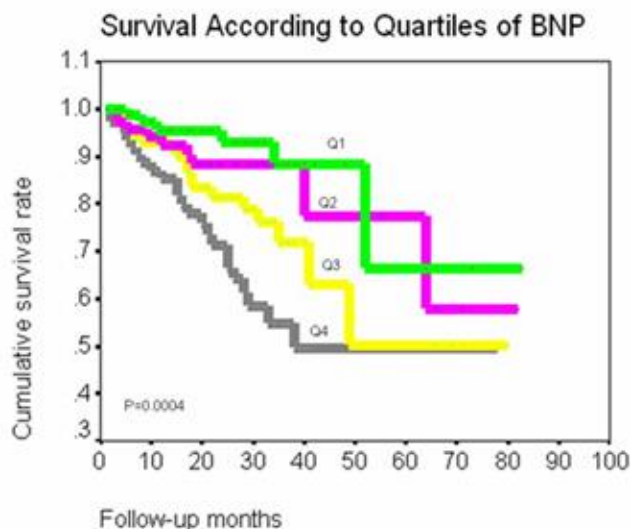


Figure-1:

The influence of NP levels (divided into quartiles) on the mortality during the follow-up months by Kaplan-Meier method. Q1: (≤ 594 pg/ml), Q2: ($594-1620$ pg/ml), Q3: ($1620-3613$ pg/ml), Q4: (>3613 pg/ml). P-value = 0.0004.

Conclusions:

A single serum BNP level, taken at the first out-patient HF clinic visit, was the strongest predictor for mortality even after an average follow-up period of two years; outstanding to many other traditional prognostic parameters for mortality. This data confirms the medical importance of NP measurements in HF centers, currently underused in Israel. The practical implementation of it requires allocating the financial resources for NP kits cost, at least in HF centers.