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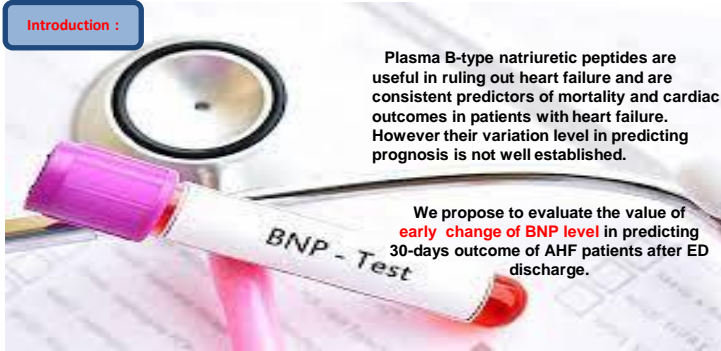
Early change BNP level as prognosis factor in acute heart failure after ED discharge.

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Introduction :

Plasma B-type natriuretic peptides are useful in ruling out heart failure and are consistent predictors of mortality and cardiac outcomes in patients with heart failure. However their variation level in predicting prognosis is not well established.

We propose to evaluate the value of early change of BNP level in predicting 30-days outcome of AHF patients after ED discharge.

Methods :

We enrolled patients aged more than 18 years who presented to the ED for acute dyspnea and who were diagnosed with AHF according to clinical, biologic and echocardiographic findings.

Exclusion criteria
• Patients with hemodynamic or neurologic compromise or immediate need for mechanical ventilation.
• Pregnant and breastfeeding women.
• Patients who refused to participate or to give consent to participate in the study.
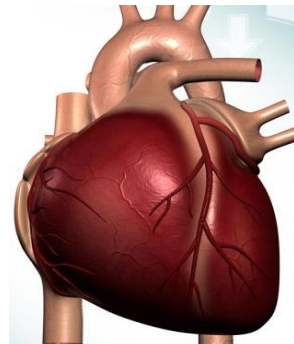
BNP was measured at baseline (BNP0) and 3 days after (BNP3).

Delta BNP was defined as (BNP0 –BNP3) / BNP0

A 30-day follow-up was performed to record death and hospital readmission.

The prognosis performance of BNP 0, BNP3 and delta BNP were compared.

Results :

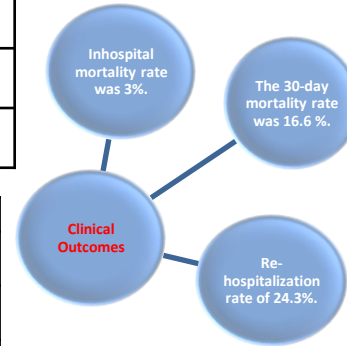Five hundred and forty-nine patients were were included, mean age was 70.2±9.7 years and 50% were male.

The most common comorbidities were
• Hypertension (74.4%) .
• Diabetes (63.2%) .
• Chronic heart failure (61.2%).

30-day follow-up prognosis

	Readmission+	Readmission -	p
BNP 0, median(IQR)	713.49 (245-814)	1035 (382-1450)	P<0.001
BNP3, median(IQR)	635.46 (245-814)	809.04 (280-1150)	0.033
DeltaBNP, median(IQR)	0.103 (-0.0087-0.237)	0.186 (0.038-0.350)	0.002

	Death	Survival	P
BNP 0, median(IQR)	1123.67 (480-1518)	951.13 (324-1300)	0.017
BNP 3, median(IQR)	854.65 (333-1185)	854.65(333.25-1518)	0.08
DeltaBNP, median(IQR)	0.101 (0.0011-0.396)	0.188 (0.038-0.346)	0.007

Inhospital mortality rate was 3%.

The 30-day mortality rate was 16.6 %.

Clinical Outcomes

Re-hospitalization rate of 24.3%.

Discussion:

• BNP is a well-established marker used in routine clinical practice for the diagnosis of heart failure and the evaluation of therapeutic response. Moreover, in patients with heart failure, BNP levels provide prognostic information.
• The principle findings can be summarized as follows.
  First, readmissions and deaths were lower when DeltaBNP values were higher.
  Secondly, that the variation in BNP levels added prognostic information to the clinical subjective impression of improvement

Conclusion:

Low delta BNP levels at baseline and before ED discharge were associated to a poor 30-day prognosis among patients admitted for AHF in EDs.

References:

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