

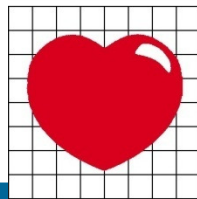
Assessment of Breathless Patient in Primary Care

Associate Professor Rob Doughty



THE UNIVERSITY
OF AUCKLAND

FACULTY OF MEDICAL
AND HEALTH SCIENCES



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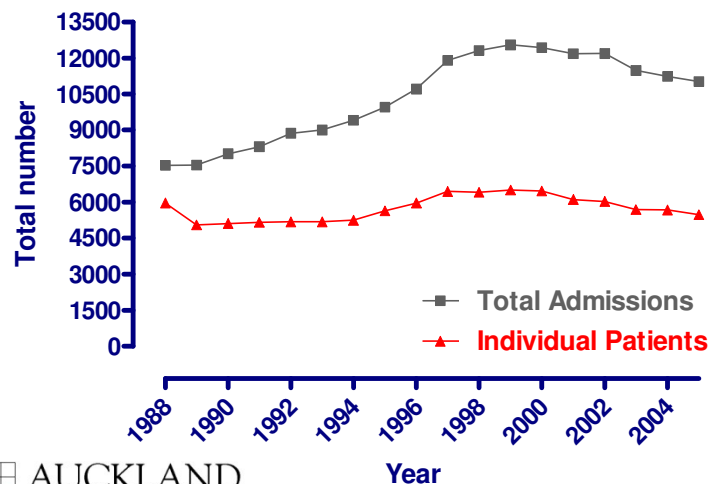


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Research and Education*

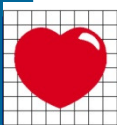
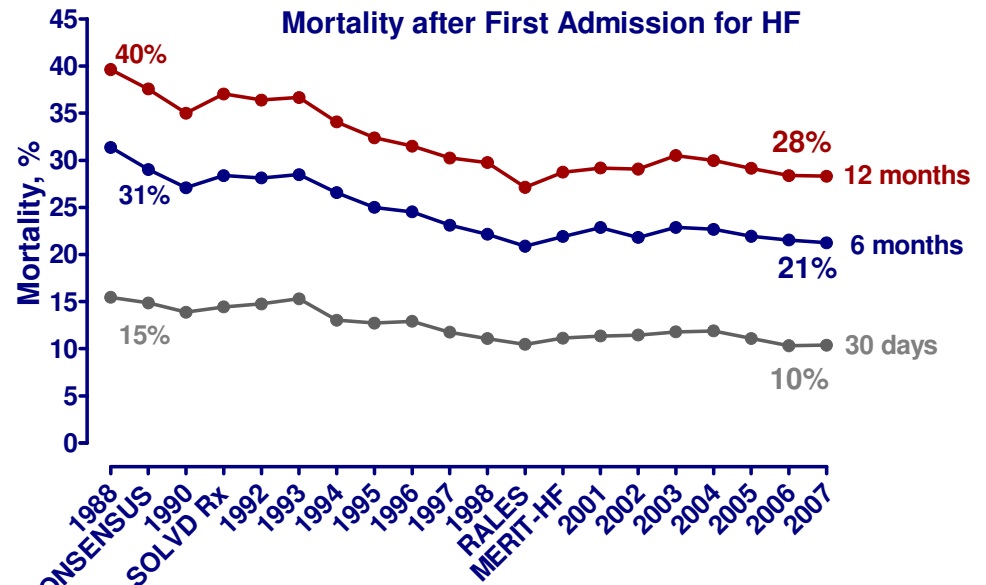
Heart Failure in New Zealand

- 1988 – 2008 221,471 hospital admissions for HF
- 10,892 admissions in 2008
- Increase in patients > 75yrs: 48% to 59%
- Casemix index increased: 2.41 to 3.01
- Median length of stay: 8 to 5 days

Admissions and Patients 1988-2005



Mortality after First Admission for HF



2009 NHF HF Guidelines: Update

www.nhf.org.nz

- **Diagnosis**
- **Pharmacotherapy**
- **Device-based therapies**
- **Healthcare delivery**
- **Exercise**
- **Palliative care**
- **Patient resources**

The Cardiac Society
of Australia
and New Zealand



Heart
Foundation



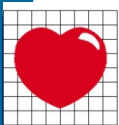
New Zealand

[Guideline]

for the
Management of
Chronic Heart Failure

2009 Update

Evidence-based, best practice New Zealand Guideline for the Management of Chronic Heart Failure



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Diagnosis of Heart Failure

Recommendations

Evaluation for heart failure should be undertaken in all patients who complain of new-onset shortness of breath on exertion, orthopnoea or paroxysmal nocturnal shortness of breath unless history and physical examination clearly indicate a non-cardiac cause for their symptoms.

The most specific signs of heart failure are elevated jugular venous pressure, a third heart sound and a laterally displaced apical impulse, and these are virtually diagnostic in a patient with compatible symptoms.

Level of Evidence IV: Grade of Recommendation D

Clinical Practice Points

- Diagnosis of the clinical syndrome of heart failure can be difficult, especially in patients who are elderly, obese or have co-morbidities, and when a patient presents with milder symptoms in the community.
- Careful attention should be given to obtaining history of causative factors for heart failure, including any of the following:
 - hypertension;
 - myocardial infarction;
 - valvular heart disease;
 - atrial fibrillation (AF).
- Exertional shortness of breath and ankle swelling are common symptoms which can be due to a variety of conditions and, alone, have low specificity for heart failure.
- Orthopnoea and paroxysmal nocturnal shortness of breath are features of more marked decompensation and are more specific for heart failure.
- The presence of more than one physical sign, such as an elevated jugular venous pressure, third heart sound and pulmonary crepitations, increases the likelihood of heart failure.



BNP in Diagnosis of Heart Failure

Recommendations

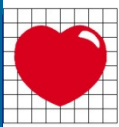
Brain natriuretic peptide assists in the diagnosis of patients presenting with symptoms of suspected heart failure.

Level of evidence II: Grade of Recommendation A

Clinical Practice Points

- BNP-32 and NT-proBNP are both useful tests to aid clinical decision-making in patients presenting with symptoms of suspected heart failure. Suggested values for BNP are as follows:

	Heart failure unlikely (<i>Rule out</i> test)	Heart failure likely (<i>Rule in</i> or confirm test)
BNP-32	<100 pg/mL (approx. 30 pmol/L)	>500 pg/mL (approx. 145 pmol/L)
NT-proBNP	<300 pg/mL (approx. 35 pmol/L)	Recommended age-adjusted optimal cut points: Age <50yrs: 450 pg/mL (~ 50 pmol/L) Age 50-75 yrs: 900 pg/mL (~ 100 pmol/L) Age >75 yrs: 800 pg/mL (~ 210 pmol/L)



NT-proBNP interpretation

- **Heart failure unlikely – “rule out test”**
 - **NT-proBNP < 35pmol/l**

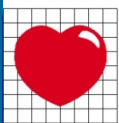
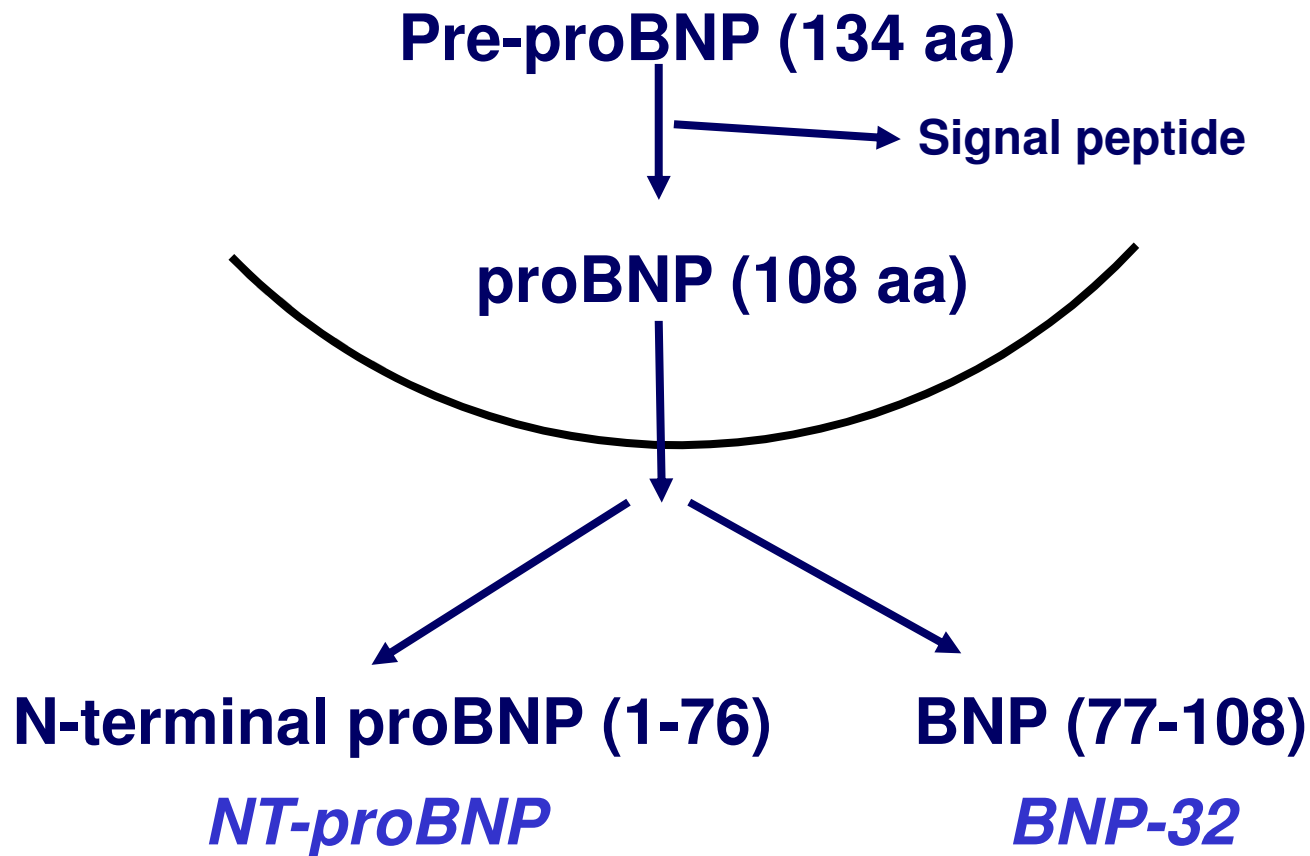
- **Consider age cut-offs**

< 50 years NT-proBNP 50 pmol/l

50-75 years NT-proBNP <100 pmol/l

>75yrs NT-proBNP <210pmol/l

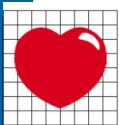
Brain Natriuretic Peptide (BNP)



Diagnostic Accuracy of Natriuretic Peptides in Heart Failure

JA Doust et al. Arch Intern Med 2004;164:1978

- **Systematic review, 20 studies assessing diagnostic accuracy of peptides in HF**
- **Pooled diagnostic odds ratio 30.9 against clinical criteria**
- **BNP is a useful first line test for the diagnosis of HF: “rule out test”**



Optimal Use of BNP

- **Single test in primary care**
 - **Assessment of patient with breathlessness of uncertain cause**
 - **Consider age-related cut-off values for interpretation**
- **No indication currently for routine repeat testing**

Case Study – Clinical Syndrome

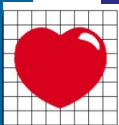
35 yr old man

- Presents with dyspnoea over 1 month
- Signs of basal crackles, elevated jvp and peripheral oedema
- Atrial fibrillation
- Echo
 - LVEDD 8cm (N<5.7cm)
 - LVEF 15%

80 yr old woman

- Presents with dyspnoea over 1 month
- Signs of basal crackles, elevated jvp and peripheral oedema
- Atrial fibrillation
- Echo
 - LVEDD 5.0cm (N<5.7cm)
 - LVEF 60%
 - LV hypertrophy

Both patients have the clinical syndrome of heart failure



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