

JOURNAL WATCH

Our panel of experts highlight the most important research articles across the spectrum of topics relevant to the field of clinical practice

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Maisel A, Barnard D, Jaski B *et al.* Primary results of the HABIT trial (Heart Failure Assessment with BNP in the Home). *J. Am. Coll. Cardiol.* 61(16), 1726–1735 (2013).

Blood B-type natriuretic peptide (BNP), N-terminal pro-BNP, galectin-3 and ST2 are all commercially available blood tests to aid in the assessment and prognosis of patients with heart failure (HF). Whole blood BNP is the first marker being developed as a home test to be used by patients themselves, similar to blood glucose.

This was a prospective, single-blind observational study of BNP measured in the home by patients who were blinded to the results. The other important measure was bodyweight, a traditional variable used in HF care management.

A total of 163 patients with HF discharged from the hospital measured their weight and BNP levels daily for 60 days. The median number of BNP measures was 46 measures over 65 days. A total of 40 patients had 56 primary events (cardiovascular death, admission for decompensated HF or HF decompensation) requiring either intravenous treatment or changes in oral medications. The hazard ratio per unit increase per natural log of BNP was 1.84, and the hazard ratio per day of weight gain (which occurred on 5% of the days) was 3.63. There were 18.4% intervals of upward trending BNP corresponding to a risk increase of 59.8% along with 30.2% declining BNP periods corresponding to a

reduced risk decrease of 39.0%. There were 44.3% intervals of weight gain corresponding to increase in risk of the primary event of 26.1%.

Weight gain appears to be a more powerful monitoring measure than BNP. However, the two appear to be complementary, and hence, may be used in care management programs to anticipate decompensation and adjust medications to hopefully avoid hospital admission. The variability of BNP, like that of blood sugar, will have to be understood by clinicians and patients in order for this home test to become useful. In general, a doubling of BNP and a 50% reduction are both important clinical signals. Data from this study should be organized as such so that the clinical community can better interpret the results.

– Written by Peter A McCullough

Pandharipande PP, Girard TD, Jackson JC *et al.*; BRAIN-ICU Study Investigators. Long-term cognitive impairment after critical illness. *N. Engl. J. Med.* 369(14), 1306–1316 (2013).

It has long been suspected that patients who have been critically ill in the ICU setting have a prolonged recovery even once out of the ICU. The prolonged recovery was primarily thought to be secondary to deconditioning from a physical standpoint. However, the impact of cognitive impairment had not been adequately examined. In this study, comprising patients who had been in the ICU,



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investigators found that 74% developed acute delirium and at 3 months, 40% still had evidence of global cognitive dysfunction (1.5 standard deviations below the mean) and 26% had a score two standard deviations below the mean. Three-month and 12-month decline was independent of the use of sedatives or analgesics, but was associated with a longer duration of initial delirium.

– Written by Robert S Dieter

Financial & competing interests disclosure

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No writing assistance was utilized in the production of this manuscript.