Evaluating Heartfelt’s predictive utility in heart failure: insights from the FOOT multicentre trial

Authors: Matthew Dewhurst⁷, Karen Harr¹, Iain Matthews⁶, Lisa Gallagher⁶, Gemma McCafferty⁶, Hayley McKe¹, Sara Pick⁶, Debbie Hughes⁵, Louise Clayton³, William Nicolson², Susan Gent⁶, Ganesan Kumar⁶, Philip Keeling⁶
A: North Tees and Hartlepool NHS Foundation Trust, B: Northumbria Healthcare NHS Foundation Trust, C: Torbay and South Devon NHS Foundation Trust, D: University Hospitals of Leicester, E: Bedfordshire Hospitals NHS Foundation Trust

Introduction

Methods cont.

Methods

31 patients were recruited to the study and 26 provided with connected weighing scales and the Heartfelt device (+IG internet dongle if required) from 5 hospital trusts in the UK. Many patients lived in areas with high deprivation levels. We looked at the acceptability and usage of the devices during the 6-month observational study.

Inclusion criteria: Patients aged 18 years or older; Patient with any HF diagnosis; Patient with one prolonged inpatient stay; Patient with significant peripheral oedema at admission; Patient with significant weight loss following admission (at least 5kg; weight loss); Patient has been discharged on at least Furosemide 80mg or Bumetanide 2mg/d.

Exclusion criteria: Patient has bandages every day; Patient has an amputation of the foot; Patient lacks capacity to consent; Patient is of no fixed abode; Patient has plans for intervention (CRT, Valves). Patient taking part in another study.

Health Deprivation and Disability Index:

Distribution of the locations of study participants: from 10% most deprived areas (Decile 1) to the least deprived areas (Decile 10) in the UK.

Consort Diagram

31 patients recruited

1 withdrew: “patient feeling depressed, not wanting commitment of a trial”
1 end of life: relative against trial participation
1 died before discharge
1 died before installation
1 could not have device installed due to prolonged use of large leg bandage

Results

Weighing Scales: Median patient has 1.1 day/week of data [0.3-4.1]

Heartfelt Device: Median patient has 5.9 day/week of data [4.9-6.6]

Data leading up to hospitalisation for one of the trial participants

Conclusion

The Heartfelt device can directly detect the increase in peripheral oedema associated with heart failure (HF) decompensation and provides significantly more days with data than weighing scales, thus predicting more HF events.


Hypothesis

Our hypothesis is that the Heartfelt device can directly detect the increase in peripheral oedema associated with heart failure (HF) decompensation and that, on average, the number of days with missing data collected by the Heartfelt device will be lower than that of the weighing scales.

Methods

31 patients were recruited to the study and 26 provided with connected weighing scales and the Heartfelt device (+IG internet dongle if required) from 5 hospital trusts in the UK. Many patients lived in areas with high deprivation levels. We looked at the acceptability and usage of the devices during the 6-month observational study.

Is there a missed opportunity for clinicians to respond rapidly to early changes in congestion?

Standard care recommendations include the monitoring of symptoms and daily weighing at home. Of patients do not weigh themselves or monitor symptoms in the 2 weeks prior to admission of admission are associated with peripheral oedema. Oedema is strongly associated with subsequent prognosis. Is there a missed opportunity for clinicians to respond rapidly to early changes in congestion?

Distribution of the locations of study participants: from 10% most deprived areas (Decile 1) to the least deprived areas (Decile 10) in the UK.