A Multi-sensor Algorithm Predicts Heart Failure Events in Patients with Implanted Devices: Results from the MultiSENSE Study

Discussion

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The cost of heart failure is driven by hospitalisation

Primary Care: 17% (11-13 visits per year)
Inpatient care: 60%
Outpatient care: 8%
Outpatient investigation: 6%
Drugs: 9%

Total cost > GBP 980 million (1% of annual NHS budget)

British Heart Foundation, 2002 (updated to 2014)
Number of Hospitalizations Per Person After HF Diagnosis

Strategies to predict hospitalizations

LACE Index

- LACE score (LOS, Acuity, Comorb, ED 6 mo)
  - Derivation 4812 Canadian med/surg discharges
  - 8.0% died or readmitted in 30 days
  - 2.44% expected risk; c-stat 0.684 in validation

30-day readmission rate (percent)

- 30-day all-cause readmission
- 30-day heart failure readmission
- 30-day readmission for other causes
Technologies to predict events
Multivariable Predictors of Hospitalization After HF Diagnosis

Daily weight change before heart failure hospitalization: cases vs controls.

The percentage of patients with preserved ejection fraction (EF) has gradually increased (Get With The Guidelines–Heart Failure) registry

Ambrosy et al. J Am Coll Cardiol 2014;63:1123–33
A small minority of HF patients are candidates for CRT

Self-Care of Heart Failure Model

- Self-Care Maintenance
  - Symptom monitoring and treatment adherence
- Self-Care Management
  - Symptom Recognition
  - Symptom Evaluation
  - Treatment Implementation
  - Treatment Evaluation

Self-Care Confidence