Methods: Using a phenomenological framework, focus groups were conducted with primary care physicians/general practitioners (GPs) (n=39 in 8 groups), cardiologists (n=4), acute physicians (n=6) and heart failure nurses (n=7). Barriers and facilitators to diagnosis and treatment were explored. Derived themes informed a national survey of left ventricular systolic dysfunction (LVSD) and heart failure with preserved ejection fraction (HFpEF). Responses from 494 clinicians across the UK included GPs (50%), consultant cardiologists (20%), heart failure nurses (16%), and acute physicians (11%).
Results: From focus groups, three categories contributed to variations in diagnosis and care: uncertainty about appropriate clinical practice; the utility of clinical guidelines; individual preferences and local organisational factors - these replicated 2003 findings. Two new categories were: uncertainty about end-of-life care; uncertain lines of responsibility for care from diagnosis to end-of-life. Of those involved with heart failure diagnosis, there was variability between groups in the use of diagnostic tests. When diagnosing LVSD, 97% of cardiologists, 91% of acute physicians and 41% of GPs used echocardiographic findings. For diagnosing HFpEF, echocardiography use was broadly similarly, but cardiologists also used ECGs (65%) and chest x-rays (64%) more than other groups. Only 5% to 35% of respondents valued natriuretic peptides for LVSD or HFpEF. Confidence with test interpretation underpinned decisions about diagnostic test usage. 96% of nurses and 52%-68% of other groups found clinical guidelines helpful when diagnosing LVSD compared with just 18%-35% for HFpEF. Some GPs did not routinely initiate diuretics (23%), ACEi (22%) or β blockers (38%), based on historical teaching, risk of side effects and the burden of monitoring. There was no consensus about who held responsibility for heart failure diagnosis, management and end-of -life care.
Conclusions: Reasons for variability in heart failure diagnosis and management have changed little in the last decade. Issues of variable access to diagnostic tests, delivery of care and a lack of co-ordination persist. The current UK working environment may not to be conducive to greater ownership or engagement with these difficulties. The primary need may be for health services to promote coordinated care, responsibility and training.

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Pulmonary congestion evaluated by lung ultrasound predicts admission in patients with heart failure

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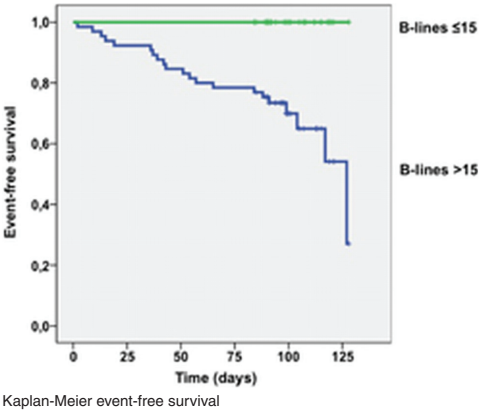
Purpose: Lung ultrasound (LUS) assessment of B-lines (also called ultrasound lung comets) has been recently proposed as a reliable and easy evaluation of pulmonary congestion in heart failure (HF) patients. Our aim was to determine the prognostic value of LUS to predict adverse events in a HF outpatient clinic.
Methods: Ninety-seven patients admitted to a heart failure clinic due to advanced systolic HF (61% men, mean age 53±13years, 27% post-ischaemic and 54% idiopathic cardiomyopathy) were enrolled. LUS evaluation was independently performed during the outpatient regular visit. B-lines number was obtained by summing the number of B-lines from 28 scanning sites, as previously described.
Results: LUS feasibility was 100%. Mean time to perform LUS was 8.7±2min. Significant pulmonary congestion at LUS (total B-lines number>15) was present in 68% patients. Patients were followed-up for a median period of 106±12days (interquartile range: 89-115days). During the follow-up, 21 hospitalization for acute pulmonary oedema occurred. Severity of pulmonary congestion at LUS was related to events (see figure). At multivariate analysis, pulmonary congestion degree assessed by LUS (Hazard Ratio 5.0, 95% Confidence Interval 1.8–13.8) was the strongest predictor of events compared to left ventricular ejection fraction (ns), E/e' (ns), systolic arterial pulmonary pressure (ns), NYHA class (HR 2.5, 95% C.I 1.2–5.3) and NT-proBNP values (ns). No acute pulmonary oedema occurred in patients without significant pulmonary congestion at LUS.



Kaplan-Meier event-free survival

Conclusion: In a HF outpatient setting, B-lines assessment by LUS may help to identify patients most likely to develop acute pulmonary oedema. This simple evaluation could help in identifying decompensated patients, whose treatment should be intensified.

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Breathless catastrophizing score in heart failure patients: development and validation

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Purpose: Despite delivering optimal care there are still some heart failure patients which continue to have a worse quality of life, increased levels of depression and access health care providers more frequently. These patients have a psychological trait termed neuroticism which has no correlation to underlying pathology. Neuroticism shares characteristics with catastrophization which is a behavioural pattern identified in chronic pain patients, who exhibit extreme negative thoughts, always thinking of the worse possible outcomes. We hypothesized that this behavioural pattern exists in heart failure patients, resulting in the feeling of increased breathlessness resulting in a worse quality of life, depression and hospital admission.
Methods: 49 patients in either a primary or secondary care setting who had a confirmed diagnosis of heart failure according to NICE guidelines and whose symptoms were classified as NYHA II-III were enrolled in the study. They completed the Breathless Catastrophizing Score (BCS) questionnaire which consisted of 13 questions which explored their feelings in relation to breathlessness. A score above 30 indicated catastrophization. Each patient performed a breath hold exercise and completed a Likert scale pre and post breath hold to rate their level of breathlessness. The purpose of this exercise was to induce a safe level of breathlessness, the hypothesis being that catastrophizers will rate both their pre and post level of breathlessness higher than non-catastrophizers. Baseline data for each patient consisted of ejection fraction, age, gender, Minnesota Living with Heart Failure (MLHF), Hospital and Anxiety Depression (HAD), number of hospital admission within the previous year.
Results: Catastrophizers scored significantly higher on the MLHF (P=0.01), HAD Anxiety (P=<0.01), HAD Depression (P=<0.01). Patients who scored higher on the BCS questionnaire were also more likely to rate their breathlessness higher on both the pre breath hold (0.626 p=<0.01) and post breath hold exercise (0.670 p=<0.01). Catastrophization was not associated with increased rate of hospital admission.
Conclusion: Catastrophization is a behavioural pattern that exists in heart failure patients. The Breathless Catastrophization Score (BCS) is a valid tool to identify this pattern. The results from this study could provide a new focus for treatment to reduce the morbidity of heart failure patients.

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Development of a European heart failure risk score in the general population

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Introduction: Heart failure has emerged as a major global health problem. The aim of the study was to develop a simple European risk score for predicting incident heart failure based on clinical variables.
Methods: The risk algorithm was developed in 8,239 individuals of the population-based prospective FINRISK study aged 25-74 years. We performed multivariable model selection via LASSO penalized Cox regression to obtain 12-year absolute risk of heart failure considering classical cardiovascular risk factors and clinical variables. The score was validated in Glostrup (Denmark), an independent middle-aged European cohort (N=7,276).
Results: We developed two models. For the simple score we identified age, sex, body mass index and pulse pressure as variables central to risk prediction. The more extensive risk algorithm further comprised information on heart rate, antihypertensive treatment, diabetes, current smoking, coronary artery disease, renal function, and lipid variables.
Both models performed well with a C-statistic of 0.85 (95% confidence interval (CI) 0.84 to 0.87) and 0.84 (95% CI 0.83 to 0.86), respectively and good calibration (P>0.05). Both models were recalibrated and validated in the Danish cohort with good model fit (0.85 (95% CI 0.83 to 0.87)).
Conclusions: We present a heart failure risk score based on easily available clinical variables with good model fit in population-based cohorts in Europe. It may serve as a benchmark for preventive efforts and analysis of additional risk factors and biomarkers.