18 ONE PAGE USER FRIENDLY PROFORMA DELIVERS DRAMATIC IMPROVEMENTS IN HEART FAILURE MANAGEMENT IN A BUSY DISTRICT GENERAL HOSPITAL

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Background Heart failure affects almost one million people in the UK with survival rates comparable to or worse than many cancers. Recent publications of the NICOR National Heart Failure Audit have focused attention on the need for improvement. This challenge is particularly acute in busy district general hospitals in London such as Whipps Cross University Hospital.

Objective We aimed to investigate if the implementation of a simple one-page user friendly Whipps Cross Heart Failure Improvement Proforma- the 'WHIP form' in all medical wards could help improve the management of patients admitted with heart failure against standard quality measures.

Methods The 'WHIP form' was introduced and implemented in all medical wards supported with a one-day educational seminar and a new dedicated heart failure email service.

Results Between June to September 2015, 106 patients with a primary admission diagnosis of heart failure were enrolled and managed using the 'WHIP form'. Inpatient mortality remained stable at 11.3% with an average hospital stay of 13.5 days. The 30-day readmission rate halved from 14% to 7%. Patients with documented left ventricular systolic dysfunction on Echocardiogram had significant improvements in the prescription of prognostic medication on discharge: ACEi/ARBs prescription increased from 78% from 88% [10% improvement]. B-Blockers prescription increased from 68% to 95% [27% improvement].

Conclusion The initiation of an "easy to use" one page heart failure management proforma led to a dramatic reduction in 30-day readmission rates and significant increase in the prescription of prognostically important ACE inhibitors and B-blockers. If the reductions in 30-day readmissions are sustained, we estimate that our cost neutral intervention could translate to yearly savings of nearly £80K for Whipps Cross University Hospital alone.

19 TIME FROM SYMPTOMS ONSET TO DIAGNOSIS AND OPTIMUM THERAPY; DOES IT RELATE TO OUTCOME IN HEART FAILURE PATIENTS?

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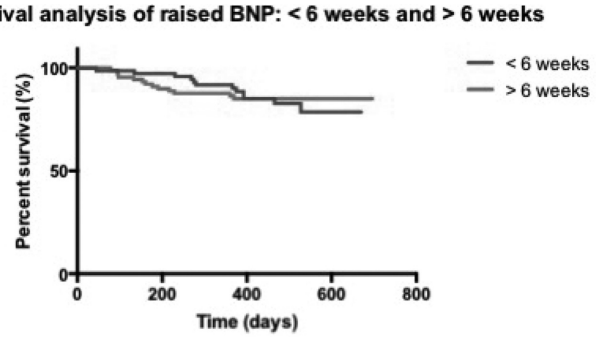
Introduction Current National Institute of Health and Care Excellence (NICE) guideline recommendations on diagnosing heart failure (HF) in primary care include the measurement of serum natriuretic peptide concentrations (NP). NP concentrations are raised in HF related to severity. In addition to advising a referral above an 'intermediate' level (to be seen within 6 weeks), the guidelines suggest that patients with 'high' levels should be seen more urgently (within 2 weeks). This prospective service evaluation aimed to provide evidence to support this challenging requirement by exploring the impact of time from symptoms onset to diagnosis and optimum treatment on subsequent long-term mortality in patients with HF due to left ventricular systolic dysfunction (LVSD).



Abstract 19 Figure 1 Kaplan Meier curve showing no significant difference in mortality for patients with raised BNP seen within and after 6 weeks (p = 0.49)

Methods We recorded date of symptom onset, referral, diagnosis and subsequent mortality in 206 patients newly diagnosed with HF due to LVSD seen in clinic following a NP test over twelve months from May 2012. The primary investigator (AW) was blinded to the NP result. Patients were initially divided into groups 'high' and 'intermediate' and then by whether they were seen within NICE-stipulated timeframes (n = 71) or not (n = 109). Due to a limited number of events, outcomes have been pooled using the 6 weeks cut-off. All-cause mortality was plotted on Kaplan-Meier curves and logistic regression was used to determine whether times between points on the pathway and being seen within 6 weeks featured in models including other known predictors of mortality.

Results After a mean follow-up time of 411 days (range (219–255 days)) 24 patients with a raised NP result had died (15%). Mean clinic visit time from the date of the blood test was 60 days (range (57–63 days)). Kaplan-Meier curves indicated no difference in mortality for patients seen within 6 weeks according to NP levels and those seen later than 6 weeks (p = 0.49).

Conclusion In patients presenting to their primary care physician with symptoms possibly due to heart failure, subsequently confirmed to have LVSD, there is no difference in outcomes if they are seen within 6 weeks or not. The guideline that patients with symptoms possibly due to HF and a raised NP level should be seen within 6 weeks, has the potential to lead to great pressure on all outpatient cardiology services yet seems to have no impact on mortality. Whether hospitalisation is avoided by urgent referral remains to be assessed.

20 FACTORS WHICH IMPACT ON MORTALITY AND READMISSION IN PATIENTS WITH HEART FAILURE: REAL WORLD LONGITUDINAL DATA

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Background Heart failure remains challenging to manage and treat globally. Much of the data on its prognosis stems from clinical trials, where cohorts are often younger and less sick than the groups of patients usually treated in hospitals and

Abstract 20 Table 1 Univariable and ultivariable hazard ratios for follow-up mortality

	Unadjusted HR (95% CI) (n=3222)	Adjusted HR (95% CI) (n=3222)
Age	1.02 1.02 1.02	1.03 1.02 1.03
Gender (F vs M)	0.92 0.83 1.01	0.82 0.74 0.91
White	1.00	1.00
South Asia	0.81 0.71 0.93	0.83 0.69 0.99
Black	0.65 0.54 0.78	0.98 0.86 1.13
Other Asia	0.74 0.60 0.91	0.84 0.70 1.02
Background		
Mixed/Chinese/ Unknown	0.70 0.59 0.84	0.93 0.75 1.14

communities. Large-scale studies examining real world cohorts and factors that affect their outcomes are lacking.

Design A retrospective cohort study of 3626 patients admitted with a diagnosis of heart failure over a 9-year period. We investigated the effects of baseline characteristics, co-morbidities and echocardiographic findings on in-hospital and overall mortality along with hospital readmission. Mean ages were 74.8 and 78.7 years for males and females respectively. The average follow-up time was 3 years for mortality and 2.43 years for readmission.

Results Increasing age is associated with higher mortality rate both in-hospital OR 1.04 [1.03–1.05 95% CI] and throughout the follow-up period (overall mortality) HR 1.03 [1.02–1.03 95% CI]. Being female had a protective effect for overall mortality HR 0.82 [0.74–0.91 95% CI]. (Table 1). Ethnicity had a mixed effect. For in-hospital mortality, there was an adverse association for Mixed Asian OR 1.5 [1.00–2.27 95% CI] and Chinese backgrounds OR 1.53 [1.11–2.13 95% CI]. For readmission, there was significant variation amongst different ethnic groups – Black patients were at highest risk HR 1.25 [1.02–1.54 95% CI] in contrast to Chinese patients who had the lowest risk HR 0.68 [0.53–0.86 95% CI]. (Table 2).

Subgroup analysis of echocardiography data demonstrated that compared to patients with severe systolic dysfunction (LVEF <35%), patients at all other stages of systolic dysfunction, including Heart Failure with Preserved Ejection Fraction (LVEF>60%), did not have any difference in mortality. This remained true for both in-hospital (0.86 OR [0.24–3.05 95% CI] and overall mortality 1.19 HR [0.77–1.83 95% CI].

Abstract 20 Table 2 Univariable and multivariable hazard ratios for follow-up readmission

	Unadjusted HR (95% CI) (n=3222)	Adjusted HR (95% CI95%CI) (n=3222)
Age	1.01 1.00 1.01	1.01 1.00 1.02
Gender (F vs M)	1.00 0.88 1.13	0.97 0.86 1.11
White	1.00	1.00
South Asia	0.96 0.72 1.30	1.03 0.87 1.22
Black	0.74 0.45 1.22	1.25 1.02 1.54
Other Asia	0.60 0.35 1.05	1.05 0.82 1.34
Background		
Mixed/Chinese/ Unknown	0.50 0.30 0.86	0.68 0.53 0.86

Conclusion In a real world heart failure population, we have demonstrated novel associations between ethnicity and disease trajectory and confirmed that LVEF is a poor prognostic marker. Future work is planned to assess why ethnic groups may have different outcomes, including examination of patient understanding and engagement with healthcare.

21 IMPACT OF COMBINED ATRIAL FIBRILLATION AND HEART FAILURE ON MORTALITY: 14 YEAR NATURALISTIC FOLLOW-UP STUDY

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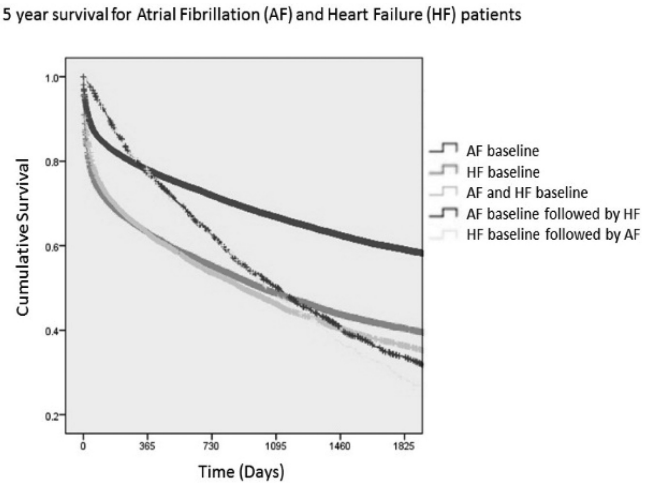
Background Atrial Fibrillation (AF) and Heart Failure (HF) frequently co-exist conferring considerable morbidity and mortality, yet current treatment options remain limited. Recent meta-analyses of patients with concomitant AF and HF have suggested no prognostic benefit of beta-blockers or digoxin, creating a paradox whereby those most in need have the fewest therapeutic choices. We sought to investigate the association between HF and AF and their impact on mortality from a large 14-year naturalistic follow-up study.

Methods Anonymous data of adult patients aged ≥18 with all types of HF and AF admitted to several hospitals in the North of England between 2000 and 2013 was obtained and processed using the ACALM (Algorithm for Co-morbidity, Associations, Length of stay and Mortality) study protocol. ACALM uses the ICD-10 and OPCS-4 coding systems to identify patients and the methodology has been published widely. Analyses were performed comparing mortality between patients with HF, AF and combined HF and AF at baseline and their development during follow-up.

Results At baseline, of 929,552 adult patients 29,164 (3.1%) had AF, 19,474 (2.1%) had HF, and 5,728 (0.6%) had both HF and AF. Of those with AF at baseline, 1,647 (5.6%)



Abstract 21 Figure 1 Kaplan Meier survival curves through the duration of follow-up in the ACALM database are shown based on atrial fibrillation and heart failure status at the start and end of the study. AF, atrial fibrillation; HF, heart failure