identified 119/138 (86%) patients that met the minimum requirement for palliative care input. However, the SHF model predicted that only 6/138 patients (4.3%) had a predicted life expectancy of less than 1 year. Patients who met GSF criteria for palliative care had significantly more hospital admissions (p=0.001) and had significantly lower predicted survival rates at 1 year (p=0.038) than those patients that did not meet GSF criteria. At follow-up, 43/138 patients had died (31%). Of these, 58% (25/43) died in hospital, following an acute admission. The sensitivity and specificity for the GSF and SHF model were 22%/83% and 98%/12% respectively. Overall, the patients renal function (eGFR<35 ml/min) was the best predictor of mortality, (sensitivity/specificity=82%/56%).

**Discussion** Neither the GSF nor the SHF were very accurate in predicting which patients were in the last year of life, in this selected sample. Despite the increasing drive towards palliation in heart failure, clinicians are still faced with a substantial prognostic barrier. Therefore, the progress of palliative care in heart failure patients may require a shift away from the traditional "end of life" model developed in cancer treatment, and focus instead on a patient's increasing needs coupled with an understanding that death, itself, may remain unpredictable.

## 93 OPTIMAL MEDICAL THERAPY IN HEART FAILURE: IS THERE SPACE FOR ADDITIONAL HEART RATE CONTROL?

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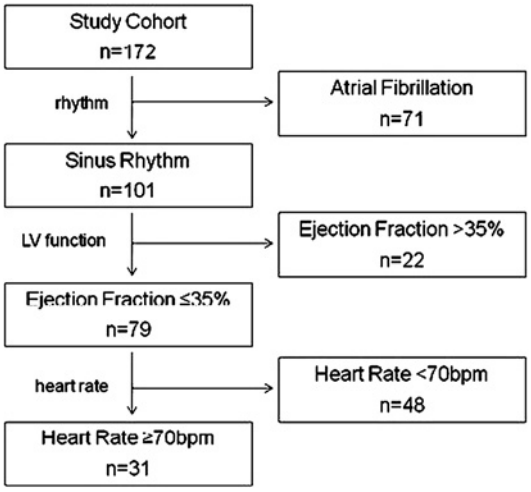
**Introduction** Current evidence suggests that heart rate (HR) may serve both as a modifiable risk factor, and as a disease modifying variable in patients with impaired left ventricular (LV) systolic function. The systolic heart failure (HF) treatment with $I_f$ inhibitor ivabradine trial (SHIFT) for example recently demonstrated significantly improved outcomes in otherwise optimally treated HF patients following additional HR reduction with ivabradine. We therefore estimated the number of patients who after optimisation of conventional HF medications may be suitable for additional HR reduction.

**Methods** We performed a retrospective analysis from two HF clinics where patients are referred for nurse lead, protocol-guided optimisation of conventional HF therapies. Data on patient demographics and classification of HF including; severity (ejection fraction>35% vs ejection fraction≤35%), functional limitation (New York Heart Association; NYHA class), and cause (ischaemic vs non-ischaemic) were recorded. In addition, we collected data on patient's resting pulse (absolute value and rhythm: sinus vs atrial fibrillation), and blood pressure at the first and last clinic visits. Between the two clinic visits, patients underwent protocol-guided forced up-titration of standard neurohormonal HF therapies. We also collected data on the maximal tolerated doses of beta blocker (βB), ACE inhibitor (ACE-I) or angiotensin receptor blocker (ARB), and the reasons for the inability to achieve target doses of βB.

**Results** Of 172 consecutive patients referred for optimisation of HF therapies (age 71±13 yrs, 67% male), 71 (41%) were in atrial fibrillation. Of the patients in sinus rhythm, 78% had severe LV systolic dysfunction (Abstract 93 figure 1). Overall, 145 of 172 patients (83%) tolerated βB therapy; of these, 39% achieved the target maximal dose, 57% at least half target dose, and 4% less than half of the target dose of βB. Reasons for failure to initiate βB (n=27, 17%) included; severe and limiting hypotension (48%), intractable lethargy (26%), and hospitalisation with worsening airways disease (26%). ACE-I/ARB, aldosterone antagonists, and digoxin were tolerated in 92%, 30%, and 18% of patients respectively (Abstract 93 table 1). Resting heart rate and blood pressure before and after optimisation of medical therapy are shown in Abstract 93 table 2.




Abstract 93 Figure 1 Heart Failure Patients Potentially Suitable for Additional Heart Rate Reduction After Optimisation of Standard Medical Therapy.

Abstract 93 Table 1 Patient Characteristics (n=172)

| | |
|---|---|
| NYHA Class (%) | |
| I | 10.5 |
| II | 62.2 |
| III | 26.2 |
| IV | 1.1 |
| HF aetiology (%) | |
| Ischaemic | 57 |
| Non-ischaemic | 43 |
| LV function (%) | |
| Ejection Fraction ≤35% | 92.4 |
| Ejection Fraction >35% | 7.6 |
| Cardiac rhythm (%) | |
| Sinus | 58.7 |
| Atrial Fibrillation | 41.3 |
| Medication use (%) | |
| β-blockers | 83 |
| ACE-I/ARBs | 92 |
| Aldosterone antagonists | 30 |
| Digoxin | 18 |

Abstract 93 Table 2 Haemodynamic profiles before and after optimisation of medication

| | First Clinic Visit (pre-optimisation) | Final Clinic Visit (post-optimisation) | p value |
|---|---|---|---|
| Resting Heart Rate (beats/min) | 73.8±14.8 | 67.3±9.5 | <0.001 |
| Systolic Blood Pressure (mm Hg) | 120±19.6 | 115.1±18.0 | <0.001 |
| Diastolic Blood Pressure (mm Hg) | 71.7±11.6 | 67.2±10.4 | <0.001 |

**Conclusions** Of 172 unselected patients attending HF clinics for optimisation of medical therapy, ~50% are in sinus rhythm with an ejection fraction ≤35%. Despite forced optimisation of medical therapy, half of these patients have a resting heart rate ≥70 beats/minute. Overall, ~1 in every 3 patients attending a heart failure clinic may be suitable for additional heart rate control.