was not significant (p for interaction 0.52). All-cause first hospitalisation was reduced for those with IHD assigned to FDI (HR 0.78, 95% CI 0.64–0.94) but not for those with no-IHD (HR 1.08, 95% CI 0.86–1.35; p for interaction 0.030).

For patients with IHD and TSAT<20% (n = 471), there were fewer primary endpoint events, CV deaths and all-cause mortality but these differences did not reach significance (table 2).

Conclusion For patients with HFrEF in the IRONMAN trial, FDI is associated with a trend to greater benefit in those with IHD, consistent with similar (non-significant) trends observed in the IPD meta-analysis.

Acknowledgements The study was funded by the British Heart Foundation (grant award CS/15/1/31175). Pharmacosmos provided supplies of intravenous ferric derisomaltose and additional trial support with an unrestricted grant. We thank the participants, and all the staff who contributed to the IRONMAN trial.

Conflict of Interest None

143 INTEGRATING ARTIFICIAL INTELLIGENCE INTO A REAL-WORLD CLINICAL PATHWAY TO FACILITATE CLINICIAN TREATMENT OPTIMISATION IN PATIENTS WITH HFREF ON SUBOPTIMAL MEDICAL THERAPY

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10.1136/heartjnl-2024-BCS.141

Introduction Despite evidence-based pharmacological recommendations, many patients with HFrEF remain undertreated.[1] In part this is due to inertia, with patients often being described as "stable" as they have minimal symptoms, and they may even have been discharged from regular clinical follow-up. Nevertheless, these patients remain at risk of decompensation and might benefit treatment optimisation. Many patients may also have been diagnosed with HFrEF prior to the use of sacubitril/valsartan or SGLT2 inhibitors. Identification of patients with historical HF diagnosis is time-consuming, often requiring manual case note review. Artificial intelligence approaches using deep learning might allow rapid identification of such patients.

Aim The aim of this study was to develop an artificial intelligence deep-learning algorithm for rapid identification of HF from electronic health records (EHRs) and to determine the potential benefit of our AI-driven algorithm for the detection of undertreated HFrEF patients in the community.

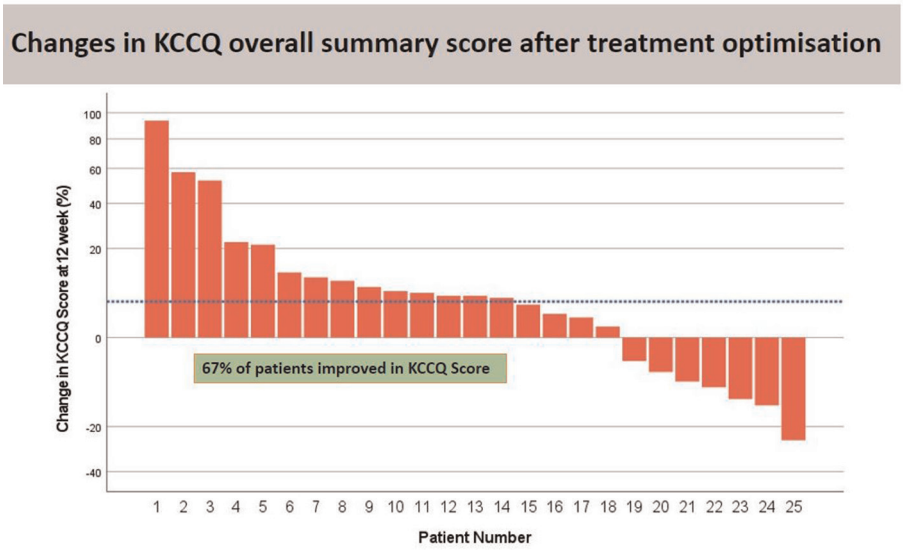
Methodology In this study data was collected from EHRs of 1,200 patients who underwent transthoracic echocardiography. The records were screened to identify HF diagnosis through an AI deep-learning algorithm using a Convolutional Neural Network (CNN). Medication status of patients identified as having HFrEF was assessed to determine whether they were on optimal guideline-directed medical therapy. Accuracy of the AI algorithm was assessed by a manual clinician review in a subset of 150 patients. Eligible patients not on optimal medical therapy where no further optimisation was planned (judged to be "stable" at last visit) were invited for a clinical evaluation including NT-proBNP and Kansas City Cardiomyopathy Questionnaire (KCCQ) and offered a treatment optimization that could include either uptitration or initiation of a new medication if symptomatic. NT-proBNP and KCCQ were repeated at 12 week, pre- and post-optimization results were compared to evaluate patient outcomes.

Results The deep-learning algorithm accurately identified HFrEF patients (99%) and use of RAAS inhibitors (97%) and beta-blockers (92%). 73 patients attended for initial clinical assessment (mean age 70 years, 77% male) and demonstrated a moderate level of HF-symptom burden (median NT-proBNP was 679 pg/mL, interquartile range was from 220 to 1300) and mean KCCQ overall summary score was 70, indicating a moderate level of HF symptom burden. 27 patients agreed to treatment optimisation. After 12 weeks there was a significant 22% reduction in NT-proBNP (from 1991 pg/mL (SD+/-1796) to 1630 pg/mL (SD +/- 1588),p=0.049) and improvements in KCCQ (total symptom score 79 (+/-22) to 85 (+/-20), p=0.005; clinical summary score 78 (+/-23) to 82 (+/-20); overall summary score from 75 (+/- 24) to 80 (+/-22), both p=0.04). 23 patients (85%) and 18 patients (67%) out of 27 had an improvement in NT-proBNP and KCCQ overall summary scores respectively.

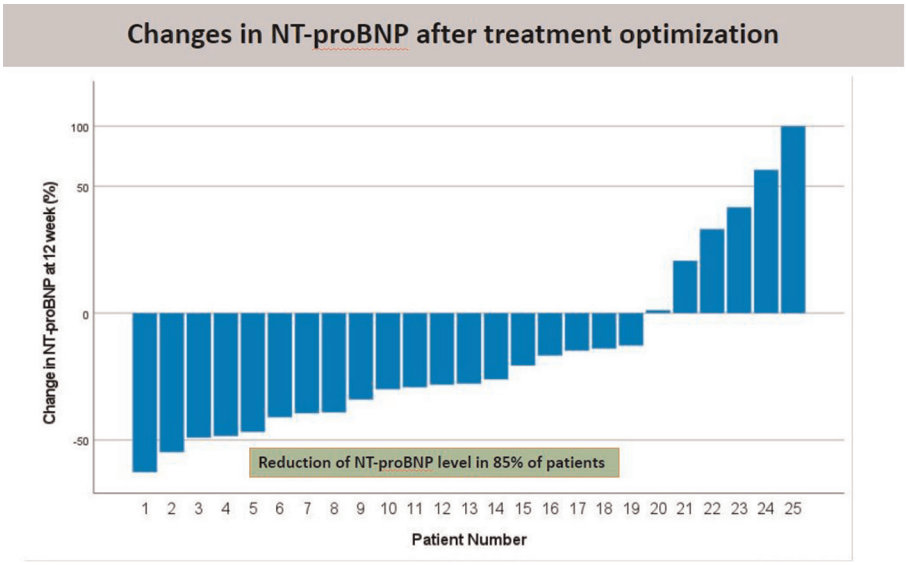
Comparison of NT-pro-BNP and KCCQ results before and after medication titrations

	Before titration Mean (SD)	After titration Mean (SD)	P value
NT-pro-BNP (n=27)	1991 (1796)	1630 (1588)	0.049
KCCQ (n=27)			
Total Symptom Score	79 (22)	85 (20)	0.005
Clinical Summary Score	78 (23)	82 (20)	0.038
Overall Summary Score	75 (24)	80 (22)	0.041

Abstract 143 Figure 1



Abstract 143 Figure 2



Abstract 143 Figure 3

Conclusion In our study we demonstrated the feasibility and potential benefits incorporating AI into a clinical workflow, allowing optimising treatment of patients with HF, with improvements in biomarkers and quality of life that could translate to long-term patient benefits.

REFERENCE

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Conflict of Interest No

144 **ABSTRACT WITHDRAWN**