

Empowering European hospital pharmacists in the face of heart failure

Lise Defieuw,¹ Julie Hias,^{1,2} Fatma Karapinar-Carkit,^{3,4} Paul Forsyth,⁵ Lorenz Roger Van der Linden ^{1,2}

European hospital pharmacists can play a crucial role in the care of heart failure (HF). In this editorial, we highlight that our profession is well suited for the task, and provide evidence that pharmacist support is highly valued in HF management.^{1,2}

HF is a high-risk condition with growing prevalence, and is predominantly treated with pharmacotherapy. In the developed world, it currently affects 1–2% of the population, with a notable age dependency.³ Among individuals aged 70 years and older, the prevalence of HF exceeds 10%. This progressive condition, characterised by a mismatch between the heart's ability to meet the body's demands, causes typical symptoms, such as fatigue and fluid retention, which significantly impair the patient's quality of life. HF leads to considerable morbidity and mortality.^{3,4}

Even in so-called 'stable' chronic HF, patients still endure a high residual HF burden. For example, the recent Dapagliflozin and Prevention of Adverse Outcomes in Heart Failure (DAPA-HF) study revealed a staggering 7.9% all-cause mortality at 1 year among ambulatory chronic HF patients who received dapagliflozin. The risks are even greater for those who experienced an acute HF episode, constituting up to 25% of all HF patients. This high-risk group faces a 90-day mortality of up to 15% after hospital discharge, with 30% experiencing readmission during the same period.³ Healthcare utilisation in HF is greatly affected by the numerous readmissions, making HF one of the leading causes of

hospital admissions for older adults.³ This syndrome accounts for approximately 1–2% of national health expenditures in developed countries.⁵

Given the substantial impact on both patients and healthcare systems, it is imperative to promptly implement guideline-recommended medical therapies in as many eligible HF patients as possible. Guidelines recommend the use of life-saving drugs, including sodium-glucose cotransporter-2 inhibitors, angiotensin receptor neprilysin inhibitors, beta-blockers and mineralocorticoid receptor antagonists. The combination of these four drug classes has been coined as 'the four pillars', 'the fantastic four' or 'the foundational drugs'. These terms are well deserved, owing to the significant complementary reduction in all-cause mortality, as indicated by an HR of 0.39 (95% CI 0.31 to 0.49).⁶ This reduction corresponds to a remarkable estimated number-needed-to-treat of only four for all-cause mortality at 2 years.

However, guideline implementation remains inadequate, and has been linked to poorer HF outcomes.^{7,8} As a result, effective strategies are needed to enhance the adoption of these proven therapies.⁹ Considering the high burden of HF as well as the substantial reduction in mortality achievable through evidence-based therapies, there is no time to waste in initiating, titrating and monitoring these life-saving agents.

In response to these challenges, comprehensive care programmes in HF management have gained increased attention in recent years. These programmes entail a holistic approach that surpasses conventional medical treatment and encompasses patient education and multidisciplinary collaboration across the care continuum.⁴ In this context, hospital pharmacists have emerged as valuable team members.^{2,10} Their expertise in medication management enables them to meet the specific needs of HF patients.¹¹ Particularly for hospital pharmacists involved in the transitional care of high-risk HF patients, compelling evidence shows a reduction in all-cause hospital readmissions.^{10,12}

Consequently, it is incumbent on the hospital pharmacy profession to proactively address the issue of (its role in) HF care. A framework for pharmacist involvement has been established in previous work, along with minimum competencies for appropriate care provision.¹³ Unfortunately, HF does not appear to be a routine part of most European hospital pharmacists' clinical duties. In a recent meta-analysis conducted by Parajuli *et al* on the impact of pharmacist involvement on clinical outcomes in HF, only a scant 10% of the data were extracted from Europe-based trials where hospital pharmacists performed the intervention during hospital stay.¹⁰ For instance, in Belgium, almost no hospital pharmacists are actively involved in HF care.

Furthermore, given the constantly evolving cardiovascular pharmacotherapy landscape, we recognise that motivated hospital pharmacists should have access to accredited training in this domain.¹¹ Currently, available options are limited, one notable example being the Cardiology Pharmacy Specialty Certification offered by the Board of Pharmacy Specialties (<https://bpsweb.org/cardiology-pharmacy/>).

In this editorial, therefore, we aim to motivate and inspire hospital pharmacists to become more involved in HF care. Additionally, our goal is to equip colleagues with insights into novel therapies that can be integrated into their everyday practice. To fulfil these goals, we selected two relevant clinical practice guidelines and five major investigations from the 2023 European Society of Cardiology (ESC) meeting, all of which have been published in peer-reviewed journals. These guidelines were chosen based on their potential to influence clinical practice and patient care, encompassing a range of HF scenarios from acute decompensation to chronic management. The selected ESC guidelines pertain to the 2023 Focused Update on Heart Failure and the Management of Cardiomyopathies.^{14,15}

Next, the following HF investigations were selected, in no particular order: Pragmatic Urinary Sodium-based Treatment algorithm in Acute Heart Failure (PUSH-AHF), Acetazolamide in Decompensated Heart Failure with Volume Overload (ADVOR kidney), Catheter Ablation for Atrial Fibrillation in patients With End-stage Heart Failure and Eligibility for Heart Transplantation (CASTLE-HTX), Ferric Carboxymaltose in Heart Failure with Iron Deficiency (HEART-FID) and Semaglutide in Patients with Heart Failure

¹Hospital Pharmacy Department, UZ Leuven, Leuven, Flanders, Belgium

²Department of Pharmaceutical and Pharmacological Sciences, KU Leuven, Leuven, Flanders, Belgium

³Department of Clinical Pharmacy and Toxicology, Maastricht University Medical Centre, Maastricht, Limburg, The Netherlands

⁴CARIM School for Cardiovascular Disease, Maastricht University, Maastricht, The Netherlands

⁵Pharmacy, NHS Greater Glasgow and Clyde, Glasgow, UK

Correspondence to Professor Lorenz Roger Van der Linden, Hospital Pharmacy Department, UZ Leuven, Leuven, Flanders, Belgium; lorenz.vanderlinden@uzleuven.be

with Preserved Ejection Fraction and Obesity (STEP-HFpEF).^{16–20}

GUIDELINES AND TRIAL FINDINGS

The summary of the guidelines can be consulted in the online supplemental materials (new HF guidelines). For the selected studies, we have summarised and tabulated the trial findings to enable hospital pharmacists to comprehend the place as well as the importance of these new data. It is crucial to note that this summary is *not* intended as a critical trial appraisal. Rather, it serves as an invitation for the readers of this journal to explore further trial findings in the HF field. This table can also be found in the Supplementary Materials (online supplemental table 1).

CONCLUSION

Hospital pharmacists can and should play a pivotal role in optimising patient outcomes in HF. As medication experts, their involvement in HF care programmes cannot be overlooked. By fostering a deeper understanding of the evolving HF landscape, we envision that hospital pharmacists will increasingly become invaluable partners in multidisciplinary HF care teams, enhancing the quality of care delivered to HF patients.

Funding LVDL and JH have received funding from the Clinical Research Fund of the University Hospitals Leuven (Leuven, Belgium).

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

Supplemental material This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the

content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

© European Association of Hospital Pharmacists 2024. No commercial re-use. See rights and permissions. Published by BMJ.

► Additional supplemental material is published online only. To view, please visit the journal online (<https://doi.org/10.1136/ejpharm-2023-004068>).



To cite Defieeuw L, Hias J, Karapinar-Carkit F, *et al.* *Eur J Hosp Pharm* 2024;**31**:287–288.

Published Online First 13 May 2024

Eur J Hosp Pharm 2024;**31**:287–288.
doi:10.1136/ejpharm-2023-004068

ORCID iD

Lorenz Roger Van der Linden <http://orcid.org/0000-0001-5195-1891>

REFERENCES

- Dunn SP, Birtcher KK, Beavers CJ, *et al.* The role of the clinical pharmacist in the care of patients with cardiovascular disease. *J Am Coll Cardiol* 2015;**66**:2129–39.
- Walgraeve K, Van der Linden L, Flamaing J, *et al.* Feasibility of optimizing pharmacotherapy in heart failure patients admitted to an acute geriatric ward: role of the clinical pharmacist. *Eur Geriatr Med* 2018;**9**:103–11.
- Cotter G, Davison BA, Lam CSP, *et al.* Acute heart failure is a malignant process: but we can induce remission. *J Am Heart Assoc* 2023;**12**:e031745.
- McDonagh TA, Metra M, Adamo M, *et al.* ESC guidelines for the diagnosis and treatment of acute and chronic heart failure. *Eur Heart J* 2021;**42**:3599–726.
- Lesyuk W, Kriza C, Kolominsky-Rabas P. Cost-of-illness studies in heart failure: a systematic review 2004–2016. *BMC Cardiovasc Disord* 2018;**18**:74.
- Tromp J, Ouwerkerk W, van Veldhuisen DJ, *et al.* A systematic review and network meta-analysis of pharmacological treatment of heart failure with reduced ejection fraction. *JACC Heart Fail* 2022;**10**:73–84.
- Stolfo D, Lund LH, Becher PM, *et al.* Use of evidence-based therapy in heart failure with reduced ejection fraction across age strata. *Eur J Heart Fail* 2022;**24**:1047–62.
- Komajda M, Lapuerta P, Hermans N, *et al.* Adherence to guidelines is a predictor of outcome in chronic heart failure: the MAHLER survey. *Eur Heart J* 2005;**26**:1653–9.
- Rosano GMC, Savarese G. Implementing an earlier and more intensive follow-up in acute heart failure: the STRONG-HF and COACH trials. *Nat Rev Cardiol* 2023;**20**:213–4.
- Parajuli DR, Kourbelis C, Franzon J, *et al.* Effectiveness of the pharmacist-involved multidisciplinary management of heart failure to improve hospitalizations and mortality rates in 4630 patients: a systematic review and meta-analysis of randomized controlled trials. *J Card Fail* 2019;**25**:744–56.
- Milfred-Laforest SK, Chow SL, Didomenico RJ, *et al.* Clinical pharmacy services in heart failure: an opinion paper from the heart failure society of America and American college of clinical pharmacy cardiology practice and research network. *J Card Fail* 2013;**19**:354–69.
- Koshman SL, Charrois TL, Simpson SH, *et al.* Pharmacist care of patients with heart failure: a systematic review of randomized trials. *Arch Intern Med* 2008;**168**:687–94.
- Berei T, Forsyth P, Balakumaran K, *et al.* Implementing nonphysician provider guideline-directed medical therapy heart failure clinics: a multi-national imperative. *J Card Fail* 2021;**27**:896–906.
- McDonagh TA, Metra M, Adamo M, *et al.* Focused update of the 2021 ESC guidelines for the diagnosis and treatment of acute and chronic heart failure. *Eur Heart J* 2023;**44**:3627–39.
- Arbelo E, Protonotarios A, Gimeno JR, *et al.* ESC guidelines for the management of cardiomyopathies. *Eur Heart J* 2023;**44**:3503–626.
- Ter Maaten JM, Beldhuis IE, van der Meer P, *et al.* Natriuresis-guided diuretic therapy in acute heart failure: a pragmatic randomized trial. *Nat Med* 2023;**29**:2625–32.
- Meekers E, Dauw J, Martens P, *et al.* Renal function and decongestion with acetazolamide in acute decompensated heart failure: the ADVOR trial. *Eur Heart J* 2023;**44**:3672–82.
- Sohns C, Fox H, Marrouche NF, *et al.* Catheter ablation in end-stage heart failure with atrial fibrillation. *N Engl J Med* 2023;**389**:1380–9.
- Mentz RJ, Garg J, Rockhold FW, *et al.* Ferric carboxymaltose in heart failure with iron deficiency. *N Engl J Med* 2023;**389**:975–86.
- Kosiborod MN, Abildstrøm SZ, Borlaug BA, *et al.* Semaglutide in patients with heart failure with preserved ejection fraction and obesity. *N Engl J Med* 2023;**389**:1069–84.