Therapeutic intervention with intravenous ferric carboxy-maltose: addressing iron deficiency among heart failure patients

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Dear editor, Heart failure is a debilitating life sentence plagued with multifactorial variables that greatly influence the morbidity and mortality of the patient. Iron deficiency, one of these variables, is a leading contributor to anaemia among individuals with stable chronic heart failure, affecting approximately 30% to 50% of this population irrespective of left ventricular ejection fraction or demographic variables such as gender and race.[1,2] Intriguingly, even among those without overt anaemia, more than 40% display laboratory evidence of depleted iron stores. Moreover, in acute decompensated heart failure (HF), iron deficiency (ID) can be identified in as many as 80% of assessed patients, emphasizing the significance of research initiatives aimed at understanding the underlying cause of ID in HF patients and enhancing their clinical management.[3]

A survey conducted in the region of South Asia revealed that 46% of Pakistani heart failure patients and 58.8% of those in India were affected by iron deficiency.[4] Implementing simple practices to treat the underlying anaemia can massively improve the quality of life and reduce rehospitalization rates.[1–3,5] Notably, in Pakistan, the rehospitalization rate sits at a staggering 81%. Ferric carboxy-maltose is an intravenous iron formulation which has been extensively explored in clinical studies such as the IRON-CRT, IRONMAN and AFFIRM-AHF trials. The trials displayed promising outcomes with marked improvement in general well-being and physical capacities including 6-minute exercise tolerance as well as lowering the need for hospitalisation independent of baseline haemoglobin levels.[1,2,5] Ferric carboxy-maltose has demonstrated superiority over oral iron supplements and other treatments, such as erythropoietin stimulating medications, making it a recommended and successful alternative for iron deficiency therapy according to both European and American guidelines.[1–3,5]

The latest heart failure guidelines emphasize the importance of screening for iron deficiency in every patient diagnosed with heart failure.[2] Unfortunately, the implementation of this practice is not consistently applied in developing countries, as observed in our own experiences in Pakistan. In conclusion, establishing Ferric Carboxy-maltose as the standard treatment for iron deficiency is recommended due to its cost-effective nature and the near instant improvement in patients health and morale. This approach would contribute to a more productive and fulfilling life for patients, even enabling them to regain some level of autonomy in their daily activities. Therefore, there is a pressing need to enhance our treatment of heart failure by implementing patient-friendly measures of screening and treatment to improve patient care and extend the longevity and productivity of their lives.

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Submission complete: 24-04-2024 **First Revision received:** 21-08-2024

Acceptance: 29-08-2024 **Last Revision received:** 21-08-2024

DOI: https://doi.org/10.47391/JPMA.20521

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

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Table: Characteristics of the trials reviewed.

NO.	Author, Year Of Publication	Study Design And Site	Intervention	Outcome	Trial, Journal
1.	Kalra PR et al., 2022	Open label, Randomised controlled trial at 70 centres in the UK	Participants were randomly assigned in a 1:1 ratio, with 569 allocated to the intravenous iron formulation group and 568 assigned to the placebo group.	Intravenous iron formulation administration was associated with a lower risk of hospital admissions for heart failure and cardiovascular death.	IRONMAN, The Lancet
2.	Martens P et al., 2021	Double-blind, randomized, placebo-controlled trial at 2 centres in Belgium	Participants were randomly assigned in a 1:1 ratio, with 37 patients receiving IV ferric carboxy maltose and 38 patients allocated to the placebo group.	Treatment with ferric carboxy-maltose resulted in an improvement of cardiac function, Left ventricular end systolic volume, and cardiac force–frequency relationship.	IRON-CRT, European Heart Journal
3.	Ponikowski P et al., 2020	Multicentre, double-blind, randomised trial done at 121 sites in Europe, South America, and Singapore	Participants were randomly assigned in a 1:1 ratio, with 567 patients receiving intravenous ferric carboxymaltose and 565 patients allocated to the placebo group	Treatment with ferric carboxy maltose was safe and reduced the risk of heart failure hospitalizations.	AFFIRM-AHF, The Lancet

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Authors' Contribution:
MI: Design, revision, final approval and agreed to be accountable for all aspects of the work.
AIA: Concept, data interpretation, revision, final approval and agreed to be accountable for all aspects of the work.
MA: Data acquisition, analysis, revision, final approval and agreed to be accountable for all aspects of the work.