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Title: real-world Portuguese data on heart failure: The case of dapagliflozin

Título: Dados de vida real sobre insuficiência cardíaca em Portugal: o caso da dapagliflozina

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Dapagliflozin and empagliflozin are sodium-glucose co-transporter type 2 inhibitors (SGLT2i), which were first developed as antidiabetic medications and then evolved into a new class of heart failure (HF) drugs. Both the European Society of Cardiology and the American Heart Association/American College of Cardiology/Heart Failure Society of America guidelines recommend the use of SGLT2i to treat patients with HF, irrespective of left ventricular ejection fraction, due to their beneficial role in decreasing HF events and mortality.[1–4]

Everything began in 2019 with the publication of the Dapagliflozin and Prevention of Adverse Outcomes in Heart Failure (DAPA-HF) trial. This study reported that in patients with HF and reduced

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left ventricular ejection fraction (HFrEF), dapagliflozin reduced the risk of HF events (hospitalizations or urgent visits) or death from cardiovascular causes.[5] Compared to the other three key drug treatments for heart failure with reduced ejection fraction (HFrEF) — beta-blockers, aldosterone receptor antagonists (MRAs), and angiotensin receptor-neprilysin inhibitors (ARNI)/angiotensin-converting enzyme inhibitors (ACEis) — SGLT2 inhibitors (SGLT2i) are user-friendly medications that do not require titration or regular blood monitoring. Nevertheless, they are powerful HF drugs, improving functional capacity and quality of life, in addition to reducing the risk of hospitalization and mortality among patients with HF, as reported by Gao et al. in their systematic review and meta-analysis.[6]

Recently, Brito et al. reported real-world data (RWD) on 4813 HF hospitalizations at six Portuguese hospitals between 2019 and 2021. They projected a significant reduction in costs if dapagliflozin was started during HF hospitalization in all eligible patients, considering the impact of dapagliflozin on HF hospitalizations reported in HF trials.[7]

In this issue of the Portuguese Journal of Cardiology, in the article "Real-world Dapagliflozin Treatment Patterns in Portuguese Patients with Heart Failure with Reduced Ejection Fraction", Andrade et al. report the EVOLUTION-HF study, a multicentric retrospective cohort study with 228 HFrEF patients who initiated dapagliflozin in 2021 at eight Portuguese cardiology departments. The authors profiled the patient sample, the adherence to, and safety of dapagliflozin six and 12 months after initiation. The study sample was predominantly male (72.8%), with an average age of 64.7 years, mainly with non-ischemic HF etiology (54.4%), NYHA functional class II (84.2%), and in sinus rhythm (75.9%). Baseline treatment for HFrEF was particularly effectively, with most patients receiving beta-blockers, MRAs and ARNI/ACEis. After six and 12 months of dapagliflozin treatment, there was an increased level of prescription and/or up-titration of beta-blockers, MRAs, and ARNI, concomitantly with a decrease in the use of loop diuretics and ACEis. Dapagliflozin was well tolerated, with 95% of patients continuing to take it 12 months after their initial prescription.[8]

Insights from observational studies are valuable to the cardiovascular community, especially when RWD come from multicentric studies, providing a national perspective on clinical practice. RWD studies have enormous potential, particularly in measuring adherence to evidence-based

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guideline recommendations and evaluating drug safety surveillance.[9] Generating real-world evidence that reflects diverse patient populations and clinical settings, RWD studies lead to better healthcare and more informed decisions, thereby enhancing the external validity of evidence and its applicability to routine settings. Leveraging the extensive applications of RWD, these studies transform research findings into actionable insights that shape clinical practice, healthcare management, and policymaking.[10]

In recent years, we have witnessed an increasing number of RWD Portuguese studies on HF resulting from HF experts and drug industry efforts, filling the gap created by the lack of regulatory national guidance on HF diagnosis, management, and performance quality indicators. The EVOLUTION-HF study presents high-value RWD showing the effectiveness and safety of dapagliflozin.

This boosts the confidence of Portuguese physicians in using dapagliflozin and highlights the indispensable role of RWD studies in complementing randomized controlled trials. I am optimistic that this growing movement of national RWD studies on HF can be strengthened in the coming years through the implementation of the Portuguese registry on HF (Registo Português de Insuficiência Cardíaca – REPICA). For now, authors of multicentric RWD studies that shed light on the HF scenario in Portugal, such as those from the EVOLUTION-HF study, deserve our congratulations.

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References

1. Heidenreich PA, Bozkurt B, Aguilar D, et al. 2022 AHA/ACC/HFSA Guideline for the management of heart failure. Circulation. 2022;145:E895-E1032. https://doi.org/10.1161/CIR.0000000000001063

2. Kittleson MM, Panjrath GS, Amancherla K, et al. 2023 ACC Expert consensus decision pathway on management of heart failure with preserved ejection fraction: a report of the American College of Cardiology solution set oversight committee. J Am Coll Cardiol. 2023;81:1835-78. doi:10.1016/j.jacc.2023.03.393

3. McDonagh TA, Metra M, Adamo M, et al. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2021;42:3599-726. doi:10.1093/eurheartj/ehab368

4. McDonagh TA, Metra M, Adamo M, et al. 2023 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. https://doi.org/10.1093/eurheartj/ehad195

5. McMurray JJV, Solomon SD, Inzucchi SE, et al. Dapagliflozin in patients with heart failure and reduced ejection fraction. N Engl J Med. 2019;381:1995-2008. doi:10.1056/NEJMoa1911303

6. Gao M, Bhatia K, Kapoor A, et al. SGLT2 inhibitors, functional capacity, and quality of life in patients with heart failure: a systematic review and meta-analysis. JAMA Netw Open. 2024;7:e245135. doi:10.1001/jamanetworkopen.2024.5135

7. Brito D, Fonseca C, Franco F, et al. Beyond clinical trials – The cost saving associated with dapagliflozin use in Portugal hospital clinical practice. Rev Port Cardiol. 2024:685-94. doi:10.1016/j.repc.2024.04.012

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8. Andrade A, Gonçalves S, Batista A, et al. Real-world dapagliflozin treatment patterns in Portuguese patients with heart failure with reduced ejection fraction. Rev Port Cardiol. (in press)

9. Bowman L, Baras A, Bombien R, et al. Understanding the use of observational and randomized data in cardiovascular medicine. Eur Heart J. 2020;41:2571-8. doi:10.1093/eurheartj/ehaa020

10. Yang Z, Zhao H, Zhang M, et al. Revisiting real-world data studies: progress, value, and challenges. The Innovation Medicine. 2025;3:100143. doi:10.59717/j.xinn-med.2025.100143

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