Heart Failure Practice Review™

Making Education Easy

Issue 1 - 2023

In this issue:

Abbreviations used in this issue:

ACC = American College of Cardiology; **ACS** = acute coronary syndrome; **AHA** = American Heart Association; **APHRS** = Asia Pacific Heart Rhythm Society; **CCS** = Canadian Cardiovascular Society; **CHFS** = Canadian Heart Failure Society; **CPP** = cardiac physiologic pacing; **CR** = complete revascularisation; **CRT** = cardiac resynchronisation therapy; **CSANZ** = Cardiac Society of Australia and New Zealand; **CSP** = conduction system pacing; **CVD** = cardiovascular disease; **ESC** = European Society of Cardiology; **GDMT** = guideline-directed medical therapy; **GRADE** = Grading of Recommendations, Assessment, Development, and Evaluations; **HF** = heart failure; **HFmrEF** = HF with mildly reduced ejection fraction; **HFpEF** = HF with preserved ejection fraction; **HFrEF** = heart failure with reduced ejection fraction; **HFSA** = Heart Failure Society of America; **HRS** = Heart Rhythm Society; **HT** = heart transplantation; **ISHNE** = International Society of Holter and Non-invasive Electrocardiology; **LAHRS** = Latin American Heart Rhythm Society; **LVADs** = left ventricular assist devices; **LVEF** = left ventricular ejection fraction; **MVD** = multivessel disease; **PACES** = Pediatric and Congenital Electrophysiology Society; **PBS** = Pharmaceutical Benefits Scheme; **SGLT2** = sodium-glucose cotransporter-2.

Welcome to the 1st issue of Heart Failure Practice Review.

This Review covers news and issues relevant to clinical practice in heart failure. It will bring you the latest updates, both locally and from around the globe, in relation to topics such as new and updated treatment guidelines, changes to medicines reimbursement and licensing, educational, professional body news and more. Finally, on the back cover, you will find our COVID-19 resources for Cardiologists and a summary of upcoming local and international educational opportunities, including workshops, webinars, and conferences.

We hope you enjoy this Research Review publication and look forward to hearing your comments and feedback.

Kind Regards,

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Clinical Practice

Focused update of ESC heart failure guidelines

The 2023 Focused Update on managing heart failure (HF) builds upon the 2021 ESC Guidelines and incorporates new evidence from recent randomised controlled trials. The update primarily focuses on refining treatment recommendations based on this new evidence.

Key recommendations from the update include:

- **SGLT2 inhibitors in HFmrEF and HFpEF:** The use of SGLT2 inhibitors, such as dapagliflozin or empagliflozin, is recommended for patients with HF with mildly reduced ejection fraction (HFmrEF) to reduce the risk of HF hospitalisation or cardiovascular death. Additionally, SGLT2 inhibitors are recommended for patients with HF with preserved ejection fraction (HFpEF) to achieve the same risk reduction.
- **Intensive strategy post-HF hospitalisation:** An intensive treatment strategy involving the initiation and rapid up-titration of evidence-based medications before discharge and during the first six weeks following an HF hospitalisation is recommended. This approach aims to reduce the risk of HF rehospitalisation or death.
- **SGLT2 inhibitors and finerenone in diabetes and chronic kidney disease:** In patients with type 2 diabetes mellitus and chronic kidney disease, SGLT2 inhibitors (dapagliflozin or empagliflozin) are recommended to lower the risk of HF hospitalisation or cardiovascular death. Additionally, finerenone is recommended for these patients to reduce the risk of HF hospitalisation.
- **Intravenous iron supplementation:** Symptomatic patients with HF with reduced ejection fraction (HFrEF) and HFmrEF who also have iron deficiency are advised to receive intravenous iron supplementation. This treatment helps alleviate HF symptoms and enhances the patient's quality of life. Ferric carboxymaltose or ferric derisomaltose should be considered for intravenous iron supplementation in these patients to reduce the risk of HF hospitalisation.

The update maintains the terminology of HFpEF while allowing for potential terminology changes in future guidelines. These recommendations serve as valuable guidance for healthcare professionals in optimising care for patients with HF.

https://tinyurl.com/29ca3mrm

Cardiac physiologic pacing for avoiding and mitigating heart failure

Cardiac physiologic pacing (CPP), including cardiac resynchronisation therapy (CRT) and conduction system pacing (CSP), has become a valuable strategy in preventing or mitigating HF in patients with pacing-induced cardiomyopathy. The HRS, in partnership with the APHRS and LAHRS, and collaborating with the ACC, AHA, PACES, ISHNE, and HFSA, developed the 2023 guideline on CPP for avoiding and mitigating HF. Some key messages are outlined below:

- **Defining CPP:** CPP involves any form of cardiac pacing to restore or preserve ventricular synchrony. It can be achieved through CSP, such as His bundle pacing or left bundle branch area pacing, or through CRT, primarily using biventricular pacing.
- **Strength of evidence for CRT:** CRT has substantial evidence supporting its use in HF management, including improving symptoms, left ventricular function, and survival. In contrast, CSP has less robust data, mainly derived from observational studies. Ongoing research may provide more insights into the role of CSP compared to CRT.
- **Response to CRT:** The response to CRT varies and includes various outcomes, such as improved mortality, reduced HF hospitalisation, or stabilisation of ventricular function. Regular assessment of ventricular function is crucial, especially in patients requiring substantial pacing or with chronic left bundle branch block.
- **Indications for CPP:** Patients expected to require significant ventricular pacing (20–40%) during pacemaker implantation may benefit from CPP to prevent pacing-induced cardiomyopathy. Patients with left ventricular ejection fraction (LVEF) of 35–50% who require less pacing may have other suitable options.
- **New recommendations:** The guideline introduces new recommendations, including left bundle branch area pacing for patients needing a pacing device with normal LVEF and tailored advice for CRT and CSP based on specific patient characteristics.
- **Shared decision-making:** Shared decision-making is recommended when considering CPP implantation, involving a discussion of patient values, preferences, goals of care, and potential risks, including device-associated infections and long-term lead management.
- **Monitoring and evaluation:** Continuous monitoring and regular follow-ups are essential to ensure appropriate capture and optimisation of CPP therapy. Electrocardiographic demonstration of biventricular or conduction system capture is vital during implantation and follow-up.
- **Optimisation and future directions:** Optimising medical and device therapies is recommended for patients with an unfavourable response to CRT. CPP may be considered in selected cases of congenital heart disease or congenital atrioventricular block.
- **Long-term data:** Long-term data on CSP are emerging, with current data primarily from observational studies. Ongoing large, randomised trials are expected to provide more robust evidence.

In summary, this guideline underscores the importance of CPP, particularly CRT, in managing HF. It provides healthcare professionals with valuable recommendations for patient selection, procedure management, and ongoing care, while highlighting the need for continued research in this field. Shared decision-making and regular monitoring are crucial components of patient-centred care in CPP.

https://tinyurl.com/mvb25z7z

Managing heart failure with preserved ejection fraction

HF remains a significant global health challenge, with a lifetime risk of approximately 20% by the age of 40 years. Although the overall incidence of HF is stabilising or even declining in the United States, there is a concerning increase in HFpEF. HFpEF now accounts for over 50% of all HF cases and is associated with outcomes like HFrEF. Despite its prevalence, HFpEF is often underdiagnosed and places a substantial burden on healthcare resources.

Recent advancements in understanding HFpEF pathophysiology, improved diagnostic methods, and better prognostic assessment have led to innovative treatment strategies. Clinical trials have shown promising results, emphasising the urgency of accurate diagnosis and timely implementation of guideline-directed medical therapy (GDMT). This prompted the creation of an Expert Consensus Decision Pathway to address crucial issues related to HFpEF, such as:

- **Approaching symptoms:** Clinicians should know how to approach individuals presenting with symptoms like shortness of breath, exercise intolerance, or signs of congestion.
- **Diagnostic challenges:** Recognising diagnostic dilemmas and the need for further testing to confirm HFpEF.
- **Excluding mimics:** Ensuring that HFpEF is accurately diagnosed and other conditions that mimic its symptoms are ruled out.
- **Managing comorbidities:** Addressing the complexities of care by effectively managing comorbid conditions that often coexist with HFpEF.
- **Initiating and optimising GDMTs:** Knowing when and how to initiate and optimise guideline-directed medical therapies.
- **Referral to specialists:** Understanding when and why to refer patients to cardiologists or HF specialists.
- **Enhancing access to care:** Strategies to improve access to HFpEF care.
- **Sex-specific differences:** Recognizing and addressing sex-specific disparities in diagnosis and care management.

The journey of an individual with HFpEF often begins with a primary care clinician who assesses symptoms, orders relevant tests, initiates GDMT, and identifies when a cardiology referral is necessary. Cardiology specialists play a vital role in excluding alternative diagnoses, optimising treatment, enrolling patients in clinical trials, and determining the need for further specialist referral. HF specialists take on complex cases, conduct advanced testing in cases of diagnostic uncertainty, manage unique cardiomyopathies, assess eligibility for advanced therapies like heart transplantation (HT), and determine long-term prognosis and palliative care needs.

The multidisciplinary collaboration between primary care clinicians, cardiologists, and HF specialists is essential for effectively managing HFpEF. It involves recognising HFpEF, initiating treatment, addressing comorbidities, and determining the most appropriate care pathway based on individual patient needs. This collaborative approach ensures that HFpEF patients receive comprehensive and tailored care throughout their healthcare journey.

https://tinyurl.com/2hf48c6y

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Safety and efficacy of empagliflozin in patients with HFpEF using diuretics

A post-hoc analysis of the EMPEROR-Preserved trial investigated the safety and efficacy of empagliflozin in individuals with HFpEF who are concurrently using diuretics. The study enrolled 5,815 patients with HFpEF and aimed to determine whether the benefits seen with empagliflozin remain consistent in the presence of background diuretic therapy.

The findings demonstrated that empagliflozin exhibited similar improvements, regardless of whether patients used diuretics. These improvements encompassed outcomes such as time to cardiovascular death or HF hospitalisation, the incidence of first and total HF hospitalisations, the rate of decline in estimated glomerular filtration rate, and overall health status.

Further, empagliflozin was associated with a decreased likelihood of needing conventional diuretics. It notably reduced the risk of diuretic dose escalation, making it a valuable addition to the treatment regimen. Patients on empagliflozin were also more likely to experience diuretic de-escalation and discontinuation after randomisation. Although empagliflozin did not significantly increase the risk of volume depletion in patients on diuretics, there was a modestly elevated risk associated with its use in combination with diuretic therapy.

These findings suggest that empagliflozin can be beneficial without significant concerns about potential interactions with diuretics. The consistent benefits observed in reducing HF hospitalisations and cardiovascular death, coupled with a possible reduction in diuretic reliance, make empagliflozin a promising option for managing HFpEF patients. Clinicians should remain vigilant for signs of volume depletion, particularly when employing empagliflozin alongside diuretic therapy.

https://tinyurl.com/3fa5ujp2

Comparison of current HF international guidelines

A recent review on HF management in 2023 critically examined and compared the latest HF guidelines from the CCS/CHFS, ESC, and AHA/ACC/ HFSA. These guidelines encompass a broad range of LVEF scenarios in HF.

Critical points of consensus across these guidelines include recommending quadruple therapy for HFrEF, intravenous iron administration for iron-deficient patients with HFrEF, and sodium restriction for patients with HF. All guidelines now advise against withdrawing HFrEF medications due to emerging evidence of potential harm in patients with improved ejection fraction.

However, challenges and differences persist, particularly in managing HFpEF and mildly reduced ejection fraction. The review offers practical guidance for clinicians navigating these complex areas. In addition to clinical comparisons, the review highlights guideline improvement and alignment opportunities. These include addressing the lack of consensus on optimal HFrEF treatment sequencing, adopting the GRADE framework to enhance transparency, facilitating shared decision-making through better presentation of treatment benefits and risks, and acknowledging uncertainty when the evidence is weak.

The review underscores the need for guidelines to adapt rapidly to emerging evidence and patient preferences. It emphasises the importance of nuanced, transparent recommendations in cases of low certainty of evidence. In summary, while there is broad agreement among international HF guidelines, areas for improvement were identified, offering valuable insights for guideline developers and clinicians to enhance evidence-based care for patients with HF.

https://tinyurl.com/4nhv5j4f

Cardio-obstetrics and HF

HF and cardiomyopathy pose significant risks during pregnancy, contributing to maternal morbidity and mortality, which has been on the rise. The collaborative efforts of multidisciplinary cardio-obstetrics teams are instrumental in optimising maternal, obstetrical, and foetal outcomes. While peripartum cardiomyopathy is the most common cardiomyopathy observed during pregnancy, it is essential to recognise that the hemodynamic changes associated with pregnancy can reveal pre-existing cardiomyopathies, potentially leading to clinical deterioration. Additionally, managing women with pre-existing cardiomyopathy and those with advanced HF, such as those on left ventricular assist devices (LVADs) or post-HT, requires special considerations.

Some key points raised in a recent State-of-the-Art Review, which was published in *JACC: Heart Failure*, are outlined below:

- **Risk assessment and preconception counselling:** Women considering pregnancy should undergo comprehensive preconception risk assessment, especially if they have pre-existing HF, structural heart disease, or a heightened risk of developing HF. This assessment should include counselling and shared decision-making regarding the safety of pregnancy, optimising maternal and foetal outcomes, and discussions on contraception.
- **Development of de novo HF during pregnancy:** Symptoms of HF during pregnancy can be challenging to distinguish from typical pregnancy symptoms. However, chest pain, cough, orthopnoea, and tachycardia should prompt cardiovascular evaluation. Usual confirmatory tests, including electrocardiography and echocardiography, should be conducted.
- **Safety of HF medications during pregnancy and breastfeeding:** Medication review for potential teratogens is crucial for pregnant women with HF. The benefits of maternal medicine must be weighed against potential foetal risks. Withdrawing medications can worsen the HF syndrome, necessitating a careful risk-benefit analysis.
- **Cardiac implantable electronic devices during pregnancy:** Women with cardiac implantable electronic devices, such as pacemakers or implantable cardioverter-defibrillators, require specialised care during pregnancy to ensure optimal device function and foetal safety.
- **Pregnancy while on LVAD support:** Pregnancy is contraindicated for women on LVAD support due to haemodynamic changes, medication teratogenicity, and potential complications. However, successful cases have been reported in unplanned pregnancies, necessitating careful management.
- **Pregnancy after HT:** While pregnancy can be considered for HT recipients, avoiding pregnancy in the first year post-HT is vital to ensure graft stability and immunosuppression regimen adherence.
- **Obstetrical considerations surrounding labour and delivery:** Comprehensive delivery plans should be developed in collaboration with a multidisciplinary team to ensure safe childbirth. Vaginal delivery is recommended when there are no obstetrical contraindications.
- **Treatment and monitoring considerations for the fourth trimester:** The postpartum period, often termed the "fourth trimester," presents opportunities to optimise cardiovascular health. A transition plan that includes monitoring and follow-up with cardiology and primary care teams is crucial.

In summary, enhancing the recognition and management of HF syndromes during pregnancy requires the expertise of multidisciplinary cardio-obstetrics teams, preconception counselling, and careful risk stratification to support shared decision-making regarding pregnancy safety and potential outcomes. Tailored considerations are essential for different cardiomyopathy subtypes, ensuring the best possible care for expectant mothers.

https://tinyurl.com/mpzf7ssa

Regulatory News

60-day prescriptions of PBS medicines

Patients can now receive twice the medication for the cost of a single prescription with the 60-day prescriptions for nearly 100 common medicines listed on the Pharmaceutical Benefits Scheme (PBS). This includes drugs for HF, cardiovascular disease (CVD), high cholesterol, and hypertension.

To qualify, patients must be:

- living with an ongoing health condition
- assessed by their prescriber to be stable on their current medicine/ medicines
- have discussed with their prescriber and obtained a new prescription for a 60-day quantity of medicine per dispensing.

The Department of Health is finalising the order of medicines that will be available in Stages 2 and 3.

https://tinyurl.com/3hp7bbcn

News in Brief

Semaglutide improves HF and CVD

In a trial with 529 participants having HFpEF and obesity, those receiving weekly 2.4 mg semaglutide injections for 52 weeks showed significant symptom and physical function improvement compared with the placebo group. Semaglutide recipients also lost 13.3% of body weight, almost 11 percentage points more than the placebo group. Fewer adverse events occurred with semaglutide. The effects of semaglutide on HF appear related to metabolic factors rather than direct cardiac impact. A separate trial demonstrated that semaglutide reduced major cardiovascular events by 20% in individuals with CVD and obesity.

https://tinyurl.com/y6ep3ee6

Complete revascularisation impact on HF in patients with ACS and MVD

A sub-analysis of the CORALYS Registry explored the impact of complete revascularisation (CR) on HF in patients with acute coronary syndrome (ACS) and multivessel disease (MVD). Patients who underwent CR showed a reduced risk of first HF hospitalisation and cardiovascular death over five years of follow-up compared with those who did not receive CR. This benefit extended to patients with different ACS presentations and those with an LVEF >40%. However, no significant benefit was observed in patients with LVEF ≤40%. These findings highlight the potential role of CR in reducing HF risk post-ACS.

https://tinyurl.com/2pdzkevs

Sex-based differences in acute HF treatment and outcomes

A global study of 18,553 patients with acute HF in 44 countries revealed that women with acute HF were generally older, had more comorbidities (except coronary artery disease), and experienced more severe symptoms. Diagnostic tests and guideline-directed care were provided to women less frequently. Women also received treatments that could worsen HF more often than men. Notably, women had a survival advantage over men in countries with low-income disparity, highlighting the global need for improved equity in HF care.

https://tinyurl.com/9mc88v37

COVID-19 Resources for Cardiologists

CSANZ https://tinyurl.com/y3xp2729

ACC https://tinyurl.com/y68aud3a

ESC https://tinyurl.com/wn3fsts

Conferences, Workshops, and CPD

Please click on the links below for upcoming local and international cardiology meetings, workshops, and CPD.

ACRA, CSANZ, Cardiac Skills Australia, Heart Foundation

Australian Centre for Heart Health, ACC, AHA

ESC Congresses and Events, ESC Education.

Research Review Publications

Cardiology Research Review with Associate Professor John Amerena

Heart Failure Research Review with Professor John Atherton, Professor Andrew Coats, and Dr Mark Nolan

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