Cardiology Practice Review™

Making Education Easy

Issue 26 - 2023

In this issue:

Abbreviations used in this issue:

ACC = American College of Cardiology; **AF** = atrial fibrillation; **AHA** = American Heart Association; **PBS** = Pharmaceutical Benefits Scheme; **TAVR** = transcatheter aortic valve replacement; **USPSTF** = United States Preventive Services Task Force.

Claim CPD/CME points Click here for more info.

Research Review Australia is now on Linked-in. Follow us to keep up to date.

Welcome to the 26th issue of Cardiology Practice Review.

This Review covers news and issues relevant to clinical practice in cardiology. 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. And 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,

Dr Janette Tenne

Editor

janette.tenne@researchreview.com.au

Clinical Practice

2023 ACC expert consensus decision pathway on comprehensive multidisciplinary care for the patient with cardiac amyloidosis

Cardiac amyloidosis is a rare disease which occurs when there is a build-up of amyloid fibrils in the heart tissue; if left untreated, cardiac amyloidosis can lead to heart failure. It is associated with either immunoglobulin light-chain aggregations (AL-CM) or transthyretin (ATTR-CM). Cardiac amyloidosis is often underdiagnosed, and many individuals will see more than five physicians before receiving a correct diagnosis. Given the rarity of cardiac amyloidosis, this American College of Cardiology (ACC) expert consensus decision pathway highlights the critical importance of recognising and diagnosing cardiac amyloidosis at an early stage to treat the affected individual and allow for the most favourable outcome. The document lays out a diagnostic algorithm, including the role of the monoclonal protein screen, bone scintigraphy and/or genetic testing and/or biopsy.

The document focuses on the need for a multidisciplinary approach to individual care. Dedicated experts across diverse medical specialties are important to address and optimise the full range of care levels. Individuals with cardiac amyloidosis often have extracardiac manifestations involving the kidney, nervous system, gastrointestinal tract and musculoskeletal systems that can lead to significant morbidity and impairment to quality of life. In addition, the writing committee includes steps to implement a treatment plan with specific attention to the roles of traditional heart failure medications and arrhythmia management.

The document was endorsed by the American Association of Neuromuscular & Electrodiagnostic Medicine, the Heart Failure Society of America and the International Society of Amyloidosis. The American Academy of Neurology affirms the value of the statement.

https://tinyurl.com/4uhdu8nr

Complementary and alternative medicines in the management of heart failure: A scientific statement from the American Heart Association

This scientific statement summarises the efficacy and safety data of complementary and alternative medicine (CAM) - estimated to be used by one in three patients with heart failure who often do not report CAM use to their physician - as well as adjunctive interventional wellness approaches in heart failure. The authors emphasise the importance of healthcare professionals inquiring about CAM use with their patients at every clinical visit and discussing the interactions, benefits, and adverse effects of CAM and guideline-directed medical therapy that could influence the safety of patients with heart failure.

A useful table is provided with potential beneficial and harmful CAMs. Limited published reports suggest that select alternative therapies might have some clinical benefit. Omega-3 PUFAs (fish oil) have the strongest evidence among CAM agents for clinical benefit in patients with heart failure and can safely be used in moderation. Other potentially beneficial agents include coenzyme-Q10, D-ribose, and L-carnitine. Clinical data do not support routine thiamine supplementation in the absence of deficiency in patients with heart failure. Yoga and tai chi can be used as adjunctive wellness approaches to guideline-directed medical therapy to improve exercise tolerance and quality of life.

Potentially harmful CAMs, due to interactions, include bitter orange, blue cohosh, devil's claw, ginkgo, gossypol, grapefruit juice, khella, liquorice, lily of the valley, oleander, strophanthus and vitamin E. Agents with uncertain safety include alcohol, aloe vera, caffeine, guar gum, hawthorn, L-arginine and policosanol.

https://tinyurl.com/9tcntkmm

RACP MyCPD participants can claim the **time spent reading** and **evaluating research reviews as CPD** in the ***online MyCPD program***.

Please contact MyCPD@racp.edu.au for any assistance.

Infective endocarditis after transcatheter aortic valve replacement

Infective endocarditis (IE) is a rare but serious complication following transcatheter aortic valve replacement (TAVR). Despite substantial improvements in the TAVR procedure and its expansion to younger and healthier patients, the incidence of IE after TAVR has remained stable over time (0.3 to 2.0 per 100 person-years), with incidence rates similar to those reported after surgical aortic valve replacement.

Although IE after TAVR is a subtype of prosthetic valve endocarditis, it represents a challenging scenario due to its unique clinical and microbiological profile, the high incidence of IE-related complications, the uncertain role of cardiac surgery, and a very poor prognosis in most patients. IE after TAVR most commonly involves enterococcal and staphylococcal organisms. Atypical clinical presentations and nonspecific symptoms are more frequent in TAVR-IE, often leading to delayed diagnosis and treatment. Whereas fever is present in approximately 90% of patients with IE in the general population, it is estimated to be present in only 15-80% of patients with TAVR-IE.

The modified Duke criteria have a lower diagnostic accuracy for TAVR-IE than for native valve IE, and combined transthoracic and trans-oesophageal echocardiography have a lower sensitivity for diagnosing TAVR-IE than for native IE or surgical PVE. Almost one third of patients with TAVR-IE had IE involving at least two cardiac structures. CT, MRI, and metabolic imaging can be useful as part of a multi-imaging approach for the diagnosis of TAVR-IE.

Optimal management includes a multidisciplinary approach. The role of surgery in addition to antibiotics has not been thoroughly studied, but most reports describe very low rates of surgical intervention for TAVR-IE. The authors suggest a management algorithm for TAVR-IE that includes the use of an endocarditis team; assessment for a surgical indication; and assessment of surgical risk, concomitant clinical conditions, and anatomical features that would affect surgical intervention.

Because of the poor prognosis and limited therapeutic options, prevention of TAVR-IE should be emphasised. Along with antiseptic measures, most consensus recommendations suggest periprocedural antibiotic prophylaxis among patients undergoing TAVR; because of the high rate of early TAVR-IE with organisms that are not susceptible to the usual cephalosporin monotherapy, some propose altering the antibiotic regimen for greater coverage against enterococci. In addition to minimising health care-associated procedures that could lead to a blood stream infection, some question whether the use of periprocedural antibiotic prophylaxis (analogous to antibiotic prophylaxis before a dental procedure) should be used among TAVR patients undergoing invasive respiratory, gastrointestinal, urogenital, or skin procedures.

https://tinyurl.com/2rcabuxw

Methamphetamine-associated heart failure: A systematic review of observational studies

The prevalence of methamphetamine-associated heart failure (MethHF) is increasing and is associated with significant morbidity, according to a recently published review. The authors conducted a systematic review of observational studies on MethHF. Data from 21 studies were included in the final analysis.

Results showed that the prevalence of MethHF is increasing and affects diverse racial/ethnic/sociodemographic groups, with a predominance in males; up to 44% of patients have preserved LVEF. Compared with non-methamphetamine-related heart failure, MethHF was associated with significant morbidity, including worse heart failure symptoms. Improved outcomes were seen in association with female sex, methamphetamine abstinence, and guideline-directed heart failure therapy. The extent of recovery after abstinence was predicted by chamber dimensions on echocardiography and fibrosis on biopsy.

The authors stated that due to heterogeneity in study design, population, comparator, and outcome assessment, results could not be combined. Due to the presence of confounders, selection bias, and poor matching, the risk for bias was moderate; overall certainty in the evidence was very low.

https://tinyurl.com/2xr8mtvv

Effectiveness of early rhythm control in improving clinical outcomes in patients with atrial fibrillation

This systematic review and meta-analysis compared the effects of early rhythm control versus rate control on clinical outcomes in patients with newly diagnosed AF. A search of PubMed and Embase identified eight randomised and observational studies (n=447,202) that reported the association of early rhythm control (within 12 months of AF diagnosis) with effectiveness outcomes. The primary outcome was a composite of death, stroke, admission to hospital for HF, or ACS. 'Newly diagnosed' AF was defined as diagnosis between <3 and <12 months.

Overall, 23.5% of participants received early rhythm-control therapy. Pooled analysis using the random-effects model showed that the early rhythm-control strategy was associated with reductions in the primary composite outcome (HR 0.88, 95% CI 0.86–0.89) compared with rate control. Secondary outcomes were also reduced with early rhythm control, including stroke or systemic embolism (HR 0.78, 95% CI 0.71–0.85), ischaemic stroke (HR 0.81, 95% CI 0.69–0.94), cardiovascular death (HR 0.83, 95% CI 0.70–0.99), heart failure hospitalisation (HR 0.90, 95% CI 0.88–0.92), and ACS (HR 0.86, 95% CI 0.76–0.98).

https://tinyurl.com/y78vr3xe

Heart disease and stroke statistics—2023 update: A report from the American Heart Association

Up-to-date statistics relating to cardiovascular disease (CVD) in the United States have been published by the American Heart Association. Each chapter of the report focusses on a different topic related to heart disease and stroke.

In 2020, the prevalence of CVD (comprising coronary heart disease, heart failure, stroke, and hypertension) was 48.6% percent in adults aged 20 years and older. In 2020, 207.1 per 100,000 people died of heart disease and stroke. Furthermore, 19.05 million deaths were estimated for CVD globally in 2020, which represented an increase of 18.7% from 2010. In 2018 to 2019, the average annual direct and indirect cost of CVD was estimated at $407.3 billion; hospital inpatient stays accounted for highest direct cost ($111.4 billion) in the United States.

As of July 1, 2022, the cumulative number of COVID-19 deaths in the United States was 1,014,620, which was equivalent to about 306 per 100,000 people. As a result, life expectancy at birth decreased from 78.8 years in 2019 to 77.0 years in 2020 overall.

https://tinyurl.com/5rwczxuc

A new era in cardiac rehabilitation delivery

Cardiac rehabilitation programs have been shown to reduce hospitalisation and mortality and improve quality of life. Such programs include structured exercise, risk factor management, and psychosocial counselling and are included in the American College of Cardiology/American Heart Association guidelines. However, only 25% of eligible patients enrol in these programs, and even fewer complete the programs, with differences in enrolment based on sex, race, ethnicity, socioeconomic status, and geographic location.

The COVID-19 pandemic led to many programs becoming virtual, providing an opportunity to reach patients who might not previously have participated. As well as exercise being delivered virtually, other important components such as nutrition, peer support and counselling have also been successfully delivered in this way since the pandemic.

https://tinyurl.com/44b5a45h

Regulatory News

PBS listings

Vericiguat (Verquvo®) has been listed on the PBS as an Authority Required for the initial restriction and an Authority Required for the continuing restriction, for the treatment of symptomatic (NYHA class II, III or IV) chronic heart failure in patients with a reduced ejection fraction (LVEF <45%) and who are stabilised after a recent decompensation heart failure event requiring hospitalisation and/or intravenous diuretic therapy.

News in Brief

USPSTF draft recommendation statement: Screening for lipid disorders in children and adolescents

Citing a lack of available data, the US Preventive Services Task Force (USPSTF) stated in a draft recommendation statement that it is unable to make a recommendation on whether clinicians should screen asymptomatic children and adolescents for lipid disorders. They concluded that the current evidence is insufficient to assess the balance of benefits and harms of screening for lipid disorders in this population.

https://tinyurl.com/2p9yh2ex

Management of heart failure with arrhythmia in adults with congenital heart disease

This state-of-the-art review includes available trials, guidelines, and expert consensus on the management of heart failure and arrhythmia in adults with congenital heart disease. Optimal delivery strategies utilise multidisciplinary teams of specialists in treating adults with congenital heart disease, advanced heart failure requiring transplantation, and cardiac electrophysiological disorders to design personalised approaches to care, given the vast heterogeneity depending on the anatomic substrate and strategy for repairs of structural anomalies and arrhythmogenic foci.

https://tinyurl.com/2emzntxj

Effect of sodium restriction in patients with heart failure

This meta-analysis, including 17 randomised controlled trials with 834 patients in the intervention and 871 patients in the control groups, showed that sodium restriction (2000–3000 mg/day or <2000 mg/day) in patients with heart failure did not reduce the risk of all-cause death (OR 0.95), hospitalisation (OR 0.84), or the composite of death and hospitalisation (OR 0.88). However, with sodium restriction, there was an improvement in some patients' NYHA class and quality-of-life metrics.

https://tinyurl.com/53bhbx2m

Cannabis use and heart transplantation: Disparities and opportunities to improve outcomes

This review discusses the relationship between cannabis use and considerations before and after heart transplantation (HT). The use of substances of potential abuse has been a contraindication to HT; but, with legalisation of cannabis in some countries, there is a need to re-examine the effect of cannabis use in HT recipients. Given the complex selection process and the potential for disparities in transplantation listing and organ allocation, this document proposes a holistic evaluation of candidates through the integration of evidence-based approaches and screening of HT recipients for cannabis-use disorder, which may be treatable.

https://tinyurl.com/bdfuecuu

Albuminuria and heart failure

Albuminuria is prevalent in patients with heart failure and confers a strong, consistent and independent association with risk, irrespective of eGFR. The causes and mechanisms of action of albuminuria in patients with heart failure are incompletely understood. This narrative review examines the role of albuminuria in risk profiling for development and progression of heart failure. Interventions that reduce albuminuria may potentially lower the risk of incident heart failure or prevent progression of existing heart failure.

https://tinyurl.com/pzpx2s

COVID-19 Resources for Cardiologists

CSANZ https://tinyurl.com/y3xp272
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 https://tinyurl.com/y4yj8xb5
CSANZ https://tinyurl.com/3mwt5ttr
Cardiac Skills Australia https://tinyurl.com/zkzlelb
Heart Foundation https://tinyurl.com/y34smdoz
Australian Centre for Heart Health https://tinyurl.com/e2yjcreu
ACC https://tinyurl.com/y2khytpz
AHA https://tinyurl.com/zajc9a7
ESC Congresses and Events https://tinyurl.com/y6ko68yf
ESC Education https://tinyurl.com/y3zkjp3o

Research Review Publications

Acute Coronary Syndrome Research Review with Professor John French

Atrial Fibrillation Research Review with Dr Andre Catanchin

Cardiology Research Review with Associate Professor John Amerena

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

Interventional Cardiology Research Review with Conjoint Professor Craig Juergens

