ISSN 1178-6086

Cardiology Research Review™

Making Education Easy

Issue 80 – 2019

In this issue:

- *Early vs delayed cardioversion for recent-onset AF*
- *Frailty, cognitive impairment and oral anticoagulation in AF patients*
- *Dabigatran dual therapy vs warfarin triple therapy after PCI in AF patients*
- *Low skeletal muscle mass and mortality in HF patients*
- *Red meat consumption and cardiovascular risk factors*
- *Beta-blockers and calcium antagonists in stable coronary artery disease*
- *Association of sleep duration with mortality and cardiovascular events*
- *Guideline adherence in primary care patients with HF symptoms*
- *IVUS-guided PCI for complex coronary artery lesions*
- *Cognitive outcomes following CABG*
- *Valve-in-valve TAVI for degenerated bioprostheses*
- *Threshold of pulmonary hypertension associated with increased mortality*

Abbreviations used in this issue

AF = atrial fibrillation
CABG = coronary artery bypass grafting
ED = emergency department
HF = heart failure
HR = hazard ratio
IVUS = intravascular ultrasound
MI = myocardial infarction
PCI = percutaneous coronary intervention
TAVI = transcatheter aortic valve implantation

Welcome to the latest issue of Cardiology Research Review.

In this issue, a 'wait-and-see' approach is shown to be as effective as early cardioversion in patients presenting to the ED with recent-onset AF, an analysis of the ORBIT AF study finds that AF patients with cognitive impairment and frailty are less likely to receive oral anticoagulants, and US investigators report that low skeletal muscle mass in HF patients is associated with mortality after an acute hospitalisation. A large international cohort study reports that sleeping for 6–8 h/day is ideal for reducing the risk of death and major cardiovascular events, Korean investigators suggest that IVUS should be actively considered for complex PCI, and a meta-analysis determines that postoperative cognitive impairment and delirium are major issues in CABG patients.

We hope you enjoy these and the other selected studies, and look forward to any feedback you might have.

Kind regards,
Professor Alexander Sasse
alexandersasse@researchreview.co.nz

Early or delayed cardioversion in recent-onset atrial fibrillation

Authors: Pluymaekers N et al., for the RACE 7 ACWAS Investigators

Summary: This multicentre study compared outcomes after early vs delayed cardioversion in patients presenting to the ED with recent-onset AF. 427 patients with haemodynamically stable, recent-onset (<36h), symptomatic AF were randomised to undergo early cardioversion or delayed cardioversion. Those in the delayed cardioversion group received initial treatment with rate-control medication only, then cardioversion if AF did not resolve within 48h. The primary end-point (presence of sinus rhythm at 4 weeks) occurred in 91% of patients in the delayed cardioversion group compared with 94% of patients in the early cardioversion group (p=0.005 for noninferiority). In patients who were monitored remotely during follow-up, AF recurred in 30% and 29% of patients in the respective groups.

Comment: When a patient is seen in the ED or clinic with recent-onset AF, how aggressively should cardioversion be pursued? This relatively small but multicentre and randomised study compared a wait-and-see approach to early cardioversion. There was no difference regarding the achievement of sinus rhythm at 4 weeks (91% and 94% of patients), and drug use did not differ. Re-presentation within the 4 weeks was 7% in both groups. This relevant study confirms that either approach is noninferior and can be tailored to the individual patient.

Reference: N Engl J Med 2019;380:1499-1508
Abstract

Independent commentary by Professor Alexander Sasse.

Professor Alexander Sasse is Consultant Cardiologist in the Cardiology Department at Wellington Hospital/CCDHB and Director of Cardiac Imaging. His clinical interests include the various modalities of cardiac imaging, structural heart disease, general cardiology and the prevention of stroke. He went to Medical School and did his training in Germany (Bonn/Aachen) and has been a Cardiologist since 2004. In 2007 he came to Wellington and has been there since. Appointments include being a senior lecturer at Wellington School of Medicine (University of Otago) since 2007, and adjunct Professor at the School of Biological Sciences (Victoria University) Wellington since 2012. He is currently treasurer and central NZ regional representative of the NZ CSANZ committee.

7 FUNDED INDICATIONS[1]

Pradaxa dabigatran etexilate is indicated to prevent stroke, systemic embolism and reduce vascular mortality in **NVAF*** patients; for the treatment and prevention of **DVT**† and **PE**§ and related death; the prevention of **DVT**† and **PE**§ in patients who have undergone major orthopaedic surgery.[1]

1. Medsafe www.medsafe.govt.nz. *NVAF nonvalvular atrial fibrillation. †DVT deep vein thrombosis. §PE pulmonary embolism.
Before prescribing Pradaxa please review the data sheet for information on dosage, contraindications, precautions, interactions and adverse effects on the Medsafe website www.medsafe.govt.nz. Boehringer Ingelheim, Auckland Ph: 0800 802 461. Medicine classification: Prescription medicine. TAPS CH4311 NZ/PRA–151108

Boehringer Ingelheim

For more information, please go to http://www.medsafe.govt.nz

Association of frailty and cognitive impairment with benefits of oral anticoagulation in patients with atrial fibrillation

Authors: Madhavan M et al., for the ORBIT AF Investigators

Summary: This analysis of the ORBIT AF study evaluated the association of frailty and cognitive impairment with the use of oral anticoagulation in patients with AF. Among 9749 patients with AF, 3.0% had cognitive impairment and 5.9% were classified as frail. Frail patients and those with cognitive impairment were less likely to receive an oral anticoagulant than patients without frailty or cognitive impairment. Both cognitive impairment (HR, 1.34) and frailty (HR, 1.29) were associated with increased risk of death, but were not associated with stroke/transient ischaemic attack (TIA) or major bleeding.

Comment: The concept of using frailty to assess a patient's vulnerability and overall ability to benefit is generally accepted. How to measure frailty is slightly more difficult. Cognitive impairment, frailty, or both were identified in 3.0%, 5.9%, and 0.7% of patients, respectively. This study reconfirmed that cognitively impaired and frail patients were less likely to receive anticoagulation. Both conditions were associated with increased risk of mortality, but not stroke/TIA or major haemorrhage. When oral anticoagulants were prescribed, frailty and cognitive impairment were not associated with particularly different adverse outcomes. Compliance might have been a limitation. While this observational study was not designed to assess the role of oral anticoagulants in these groups of patients, there does not generally seem to be a particular contraindication to using them.

Reference: Am Heart J 2019;211:77-89
Abstract

Relationship of stroke and bleeding risk profiles to efficacy and safety of dabigatran dual therapy versus warfarin triple therapy in atrial fibrillation after percutaneous coronary intervention

Authors: Lip G et al.

Summary: This analysis of the RE-DUAL PCI trial assessed outcomes in relation to patient bleeding and stroke risk profiles based on the modified HAS-BLED and CHA_2DS_2-VASc scores. In RE-DUAL PCI, patients with AF were randomised to dabigatran dual therapy (110 or 150mg twice daily, plus clopidogrel or ticagrelor) or warfarin triple therapy after PCI. Dabigatran dual therapy reduced bleeding events compared with warfarin triple therapy, with noninferiority in overall thromboembolic events. This analysis compared major bleeding events (MBEs) and clinically relevant nonmajor bleeding events (CRNMBEs) across study arms according to modified HAS-BLED categories; the composite thromboembolic end-point (death, thromboembolic event, and unplanned revascularisation rates) was compared in patients categorised according to CHA_2DS_2-VASc score. Risk of MBEs or CRNMBEs was lower with both dosages of dabigatran dual therapy than with warfarin triple therapy, irrespective of modified HAS-BLED category, and the risk of a composite thromboembolic end-point was similar across CHA_2DS_2-VASc categories and consistent with the overall study results. Higher HAS-BLED scores were associated with higher risks of bleeding in all groups.

Comment: The optimal anticoagulation and antiplatelet medication in AF and PCI remains contested. Here a combination of two strengths of dabigatran with either clopidogrel or ticagrelor is evaluated. The comparison was with warfarin triple therapy; interestingly across all groups target international normalised ratio (INR) was achieved in 63% of INR tests. This analysis was trying to evaluate the utility of HAS-BLED and CHA_2DS_2-VASc scores to guide treatment decisions. Independent of HAS-BLED score, both dabigatran arms had less bleeding than the warfarin group. However, HAS-BLED remained a valuable tool for predicting overall risk of bleeding. The stroke risk was similar between treatment groups and was similar in various CHA_2DS_2-VASc categories. Hence dual combination with a direct oral anticoagulant again seems to be an option in this group of patients.

Reference: Am Heart J 2019;212:13-22
Abstract

New Zealand Research Review subscribers can claim CPD/CME points for time spent reading our reviews from a wide range of local medical and nursing colleges. Find out more on our **CPD page**.

Low skeletal muscle mass independently predicts mortality in patients with chronic heart failure after an acute hospitalization

Authors: Lopez P et al.

Summary: This retrospective cohort study investigated whether low skeletal muscle mass is associated with mortality after an acute hospitalisation in HF patients. 160 patients with HF who underwent abdominopelvic computed tomography (CT) during an acute hospitalisation were assessed for low skeletal muscle mass and then followed until death or discontinuation of care. Cox regression analysis adjusted for confounding factors showed that patients with low skeletal muscle mass had 4.5 times the risk of all-cause mortality at 1 year than the rest of the cohort (p=0.0016).

Comment: Loss of skeletal muscle mass would intuitively be a relevant prognostic parameter, in this case for HF. It would appear to be associated with other unfavourable conditions such as cachexia and frailty. This study used the elegant concept of measuring skeletal muscle mass by using psoas muscle area as a surrogate. Measurements were based on CT (most patients had the scan done for a variety of clinical reasons). Loss of skeletal muscle mass was associated with an increase in mortality in chronic HF patients. A number of other scoring tools are available to assess overall prognosis in HF patients, and this study highlights the importance of skeletal muscle mass as an independent prognostic parameter.

Reference: Cardiology 2019;142(1):28-36
Abstract

FOLLOW US **ON TWITTER**

LIKE OUR **FACEBOOK PAGE**

RACP MyCPD Program participants can claim **one credit per hour** (maximum of 50 credits per year) **for reading and evaluating Research Reviews.**

FOR MORE INFORMATION CLICK HERE

Entresto®
sacubitril/valsartan

For the treatment of chronic heart failure (NYHA Class II-IV) with reduced ejection fraction[1]

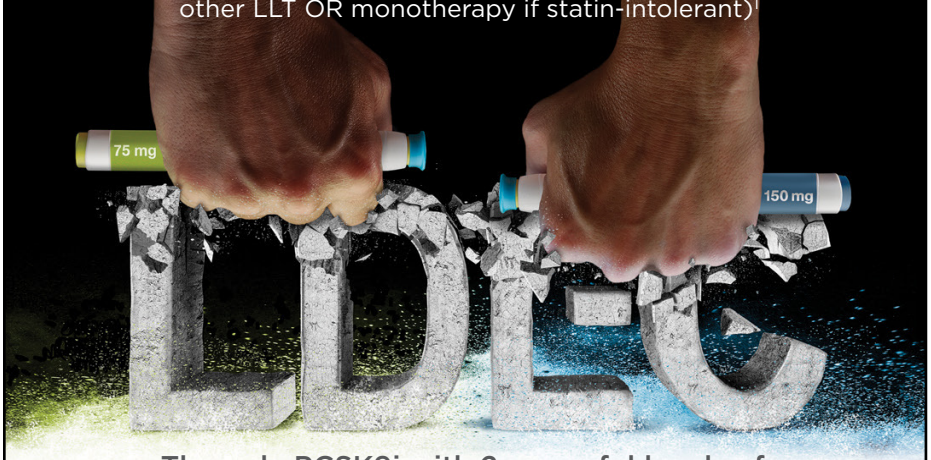
NEW

NYHA = New York Heart Association. **Reference** 1. ENTRESTO New Zealand Data Sheet. ENTRESTO (sacubitril/valsartan) tablets is a prescription medicine which is fully funded under special authority criteria (www.pharmac.health.nz). Before prescribing please read the Data Sheet available at www.medsafe.govt.nz for information on dosage, contraindications, precautions, interactions and adverse effects. Novartis New Zealand Limited, Auckland. Phone 09 523 8500. NZ-00491 February 2019, TAPS NA10756, BGA190207

For more information, please go to http://www.medsafe.govt.nz

Praluent®
alirocumab

CHOOSE PRALUENT®
for high-risk CVD patients
requiring additional LDL-C lowering
(as an adjunct to diet in adults with primary hypercholesterolaemia or mixed dyslipidaemia on maximally tolerated statin ± other LLT OR monotherapy if statin-intolerant)[1]



The only PCSK9i with 2 powerful levels of LDL-lowering efficacy in primary hypercholesterolaemia[1,2]

75 mg — 45-49% reduction[1] (additive effect beyond statin)

150 mg — >60% reduction[1] (additive effect beyond statin)

Praluent® is an unfunded medicine - a prescription charge will apply.

CLICK HERE TO REVIEW FULL PRODUCT INFORMATION BEFORE PRESCRIBING.

Sanofi and Regeneron are collaborating in a global development program and commercialisation for Praluent®.
Praluent® is a registered trademark of sanofi-aventis new zealand limited, Level 8, 56 Cawley Street, Ellerslie, Auckland.
Freephone **0800 283684**.
SANZ013 Date of preparation: May 2018 SAANZ.ALI.18.05.0198 TAPS PP2322
1. Praluent Product Information. 2017. **2.** Repatha Product Information. 2017.
CVD: cardiovascular disease; LDL-C: low-density lipoprotein cholesterol; LLT: lipid-lowering therapy; PCSK9i: proprotein convertase subtilisin kexin type 9 inhibitor

PRALUENT® (alirocumab (rch))
Abridged Data Sheet
INDICATIONS In adults with primary hypercholesterolaemia (heterozygous familial and non-familial) or mixed dyslipidaemia, as an adjunct to diet: - in combination with a statin, or statin with other lipid-lowering therapies in patients unable to reach LDL-C goals with maximum tolerated dose of a statin or, - alone or in combination with other lipid lowering therapies in patients who are statin intolerant or for whom a statin is contraindicated. The effect of Praluent on cardiovascular morbidity and mortality has not yet been determined. **DOSAGE AND ADMINISTRATION** Usual starting dose is 75 mg subcutaneously every 2 weeks. May increase to 150 mg every 2 weeks if inadequate LDL-C response. Patients requiring larger LDL-C reduction (>60%) may be started on 150 mg subcutaneously every 2 weeks, or 300 mg once every 4 weeks (monthly), administered subcutaneously. Measure lipid levels after 4 weeks of initiating/titrating Praluent, to assess response and adjust dose if needed. Patients should be treated with the lowest dose necessary to achieve the desired LDL-C reduction. Allow to warm at room temperature for 30-40 min before injecting; do not warm in any other way. Inject into thigh or abdomen or upper arm that is not tender, bruised, red or hard (rotate site). See full DS. **CONTRAINDICATIONS** Hypersensitivity to the active substance or to any of the excipients. **PRECAUTIONS** Allergic reactions, immunogenicity, very low LDL-C levels (long-term effects unknown), pregnancy, lactation, children (<18 years). Severe hepatic (Child-Pugh C) or severe renal impairment (eGFR < 30 mL/min/1.73 m2) not studied. **INTERACTIONS** Not anticipated. **ADVERSE EFFECTS** Common adverse reactions: injection site reactions, pruritus, upper respiratory tract signs and symptoms. Others, see full DS. **MEDICINE CLASSIFICATION** Prescription Medicine **SPONSOR** sanofi-aventis new zealand limited, Level 8, 56 Cawley Street, Ellerslie, Auckland
Before prescribing Praluent, please refer to the data sheet (available at www.medsafe.govt.nz) for information on dosage, contraindications, precautions, interactions and adverse effects. SAANZ.ALI.18.06.0259
Date of Preparation: 10 June 2018. Based on Full DS, with most recent amendment on 31 May 2018.
For more information, please go to http://www.medsafe.govt.nz

SANOFI

Meta-analysis of randomized controlled trials of red meat consumption in comparison with various comparison diets on cardiovascular risk factors

Authors: Guasch-Ferré M et al.

Summary: This meta-analysis compared the impact of red meat consumption versus various other diets on cardiovascular risk factors. A search of the PubMed database identified 36 randomised controlled trials (n=1803) that were suitable for inclusion. Meta-analysis of the data showed that there were no significant differences between a red meat diet and all comparison diets combined for changes in levels of total, low-density lipoprotein (LDL), or high-density lipoprotein (HDL) cholesterol, apolipoproteins A1 and B, or blood pressure, although red meat caused smaller decreases in triglycerides. Red meat consumption caused smaller decreases in total cholesterol and LDL cholesterol than a diet based on high-quality plant protein sources, greater decreases in LDL and HDL cholesterol levels than a fish-based diet, and greater decreases in triglycerides than a carbohydrate-based diet.

Comment: Meta-analyses have been done on seemingly all facets of diet, nutrition and supplements. Here the effect of red meat consumption on cardiovascular outcomes is reviewed in a meta-analysis of 36 studies with 1803 participants. Measuring diets is difficult and meta-analysis of such trials does not make it easier. There was a greater improvement in blood lipids for high-quality plant protein sources in comparison with red meat interventions. Other comparison diets did not differ significantly. And the paper does not pay much attention to the effect of statins. What's the message? Simply reducing red meat is one thing, but what it is being replaced with might be just as important.

Reference: Circulation 2019;139(15):1828-45
Abstract

PHARMACY GUILD OF NEW ZEALAND
ACNC
NZMA New Zealand Medical Association

Claim your CPD points for reading Research Reviews
FIND OUT MORE

β-blockers, calcium antagonists, and mortality in stable coronary artery disease

Authors: Sorbets E et al.

Summary: This international cohort study investigated the effects of beta-blockers and calcium antagonists on clinical outcomes in patients with stable coronary artery disease (CAD). 22,006 stable CAD patients in the CLARIFY registry (45 countries) were followed-up annually for 5 years. After multivariable adjustment, baseline beta-blocker use was not associated with lower 5-year risk of all-cause death, cardiovascular death, or cardiovascular death/non-fatal MI, except in prior MI patients who were enrolled in the year following MI. Calcium antagonists were not associated with superior mortality outcomes, regardless of MI history.

Comment: Text books and teaching recommend beta-blockers or calcium antagonists to treat stable CAD. But how do these drugs perform in a contemporary setting, in a prospective observational longitudinal registry of patients with stable CAD? The trial nicely describes current clinical practice. Beta-blockers reduced mortality in patients with an MI within the first year, after that they did not reduce mortality. Calcium antagonists did not reduce mortality at all, under any permutation. Symptom relief was acknowledged but outside of beta-blockers 1 year after MI there is no prognostic benefit according to this trial.

Reference: Eur Heart J 2019;40(18):1399-1407
Abstract

Independent Content: The selection of articles and writing of summaries and commentary in this publication is completely independent of the advertisers/sponsors and their products.

Privacy Policy: Research Review will record your email details on a secure database and will not release them to anyone without your prior approval. Research Review and you have the right to inspect, update or delete your details at any time.

Disclaimer: This publication is not intended as a replacement for regular medical education but to assist in the process. The reviews are a summarised interpretation of the published study and reflect the opinion of the writer rather than those of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits.

Research Review publications are intended for New Zealand health professionals.

Association of estimated sleep duration and naps with mortality and cardiovascular events

Authors: Wang C et al.

Summary: This large international study investigated the impact of total daily sleep duration and daytime nap duration on risk of death and major cardiovascular events. 116,632 individuals in 21 countries were assessed for total sleep duration and daytime nap duration during a median follow-up of 7.8 years. Both shorter (≤6 h/day) and longer (>8 h/day) estimated total sleep durations were associated with an increased risk of death or major cardiovascular events during follow-up, after adjustment for age and sex. Daytime nap duration was associated with an increased risk of death or major cardiovascular events in those with >6h of nocturnal sleep, but not in those sleeping ≤6h at night.

Comment: How does sleep influence cardiovascular health, is more better, and how much more is better? Again a topic of great interest, but the main parameter, sleep, is difficult to measure. 116,632 patients across 21 countries are trying to make up for that, and the data are based on a questionnaire. Sleep duration in hours is used to group the patients. The result is in the form of a J-shaped curve, with a total estimated sleep duration of 6–8h being ideal. The results were consistent across quite variable regions of the world. Naps during the daytime could compensate for shorter night-time sleep, but in patients with more nocturnal sleep further naps were associated with excessive cardiovascular risk. None of this is particularly astonishing, but provides scientific evidence to support an occasional nap!

Reference: Eur Heart J 2019;40(20):1620-9
Abstract

Adherence to guidelines in management of symptoms suggestive of heart failure in primary care

Authors: Hayhoe B et al.

Summary: This observational study used linked primary and secondary care data in the UK to assess the timeliness of investigations and referrals of primary care patients with HF symptoms. Of 42,403 patients diagnosed with HF, 16,597 of them had presented to primary care with symptoms suggestive of HF (breathlessness, fatigue, and ankle swelling). 39% of patients had undergone serum natriuretic peptide testing or echocardiography, and 36% had been referred to a specialist. The median time from presenting with symptoms in primary care was 292 days to investigation, 236 days to referral, 972 days to diagnosis, and 803 days to treatment with HF-relevant medication. Factors affecting the timing of referral, treatment and diagnosis included patients' sex, age, deprivation score, comorbidities and presenting symptoms.

Comment: Big data give us all sort of results, here we get an insight into HF treatment. In this case, observational data were evaluated from clinical records in the UK health system. The results are somewhat understated, but time to investigation with brain natriuretic peptide or echo was 292 days (interquartile range 34–844) and time from symptoms to diagnosis was a shocking 972 days. Confounding factors are quoted such as deprivation and presenting symptom type. And then, measurement is the first step to improve a system. Admittedly we as hospital cardiologists have a biased view of the world, but these data highlight the need to measure HF pathways and very likely further improve them.

Reference: Heart 2019;105:678-85
Abstract

CLICK HERE to read previous issues of Cardiology Research Review

Time spent reading this publication has been approved for CME for Royal New Zealand College of General Practitioners (RNZCGP) General Practice Educational Programme Stage 2 (GPEP2) and the Maintenance of Professional Standards (MOPS) purposes, provided that a Learning Reflection Form is completed. Please **CLICK HERE** to download your CPD MOPS Learning Reflection Form. One form per review read would be required.

Time spent reading this publication has been approved for CNE by The College of Nurses Aotearoa (NZ) for RNs and NPs. For more information on how to claim CNE hours please **CLICK HERE**.

Reference 1. Pharmac Schedule, www.pharmac.govt.nz, accessed 26 June 2019. **Xarelto® (rivaroxaban)** Prescription Medicine. Oral tablets containing 10 mg, 15 mg or 20 mg rivaroxaban. **INDICATIONS:** 1) For the prevention of venous thromboembolism in elective hip and knee replacement surgery. 2) Prevention of stroke and systemic embolism in non-valvular atrial fibrillation and at least one additional risk factor. 3) Treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE) and prevention of recurrent DVT and PE. Before prescribing Xarelto® please review the Data Sheet for information on dosage, contraindications, precautions, interactions and adverse effects. The Data Sheet is available at https://medsafe.govt.nz/profs/Datasheet/x/Xareltotab.pdf or click **here** for abridged prescribing information. Bayer New Zealand Ltd. 3 Argus Place, Hillcrest, Auckland 0627. Xarelto® is a registered trademark of the Bayer Group, Germany. NZ-XAR-00180-07-2019 TAPS NA10853

For more information, please go to www.medsafe.govt.nz

Impact of intravascular ultrasound-guided percutaneous coronary intervention on long-term clinical outcomes in patients undergoing complex procedures

Authors: Choi K et al.

Summary: This Korean study compared long-term outcomes after IVUS-guided PCI compared with angiography-guided PCI in patients with complex coronary artery lesions. 6005 patients undergoing PCI with drug-eluting stents for ≥1 complex lesion were enrolled from a prospective institutional registry. Those who underwent IVUS-guided PCI (27.9% of patients) had a larger mean stent diameter (3.2 vs 3.0; p<0.001), and more frequent use of post-dilatation (49.0% vs 17.9%; p<0.001) than the angiography-guided PCI group. IVUS-guided PCI was associated with fewer cardiac deaths during a median 64 months of follow-up (10.2% vs 16.9%; p<0.001), and significantly less all-cause death, MI, stent thrombosis, target lesion revascularisation, and major adverse cardiac events.

Comment: Undeniably IVUS shows the inside of atherosclerotic vessels in a completely different modality. However, IVUS during PCI will increase procedure duration and potentially *a priori* costs. This prospective randomised trial assessed the influence of IVUS in PCI of complex lesions. Unquestionably the most important outcome was a reduction of mortality in the IVUS PCI group, and not by a small margin. This was most dramatic in left main stem lesion PCI. Lesion and intervention specific outcomes also favoured IVUS, but extensive calcification was a problem for IVUS-guided intervention. Maybe it is not entirely surprising that better seeing what one is doing improves the outcome.

Reference: JACC Cardiovasc Interv 2019;12(7):607-20
Abstract

Cognitive outcomes following coronary artery bypass grafting

Authors: Greaves D et al.

Summary: This meta-analysis examined cognitive outcomes after CABG surgery. A search of 4 databases identified 215 studies (n=91,829) that reported the prevalence of cognitive impairment before and after CABG surgery. Meta-analysis of the data found that 19% of patients had pre-surgical cognitive impairment. Approximately 43% of patients had cognitive impairment acutely after CABG surgery, and nearly 40% of patients had long-term cognitive impairment (up to 5 years postoperatively). 18% of CABG patients had postoperative delirium and 7% had postoperative dementia.

Comment: Delirium and cognitive impairment following CABG are a relevant concern. This study reviewed the literature and presents a meta-analysis. Many studies are noted to have problematic methods, some of which were inherent with assessing cognitive function, others from higher rates of cognitively impaired function being lost to follow up or having died. And of course a control group is missing. In this Australian cohort 1 in 5 patients had cognitive impairment before, and 40% after, CABG. This then decreases back to 1 in 5 after 1 year but rises to 40% after 5 years. Applying rigorous dementia definitions, 31% of CABG patients were diagnosed with dementia 5 years following surgery. The limitations of these kinds of studies make it difficult to generalise the results, however this information is relevant for making treatment decisions.

Reference: Int J Cardiol 2019;289:43-9
Abstract

3-year outcomes after valve-in-valve transcatheter aortic valve replacement for degenerated bioprostheses

Authors: Webb J et al.

Summary: This analysis of data from the PARTNER 2 Registry evaluated 3-year outcomes after valve-in-valve TAVI for degenerated bioprostheses. 365 patients with symptomatic degeneration of surgical aortic bioprostheses who underwent valve-in-valve TAVI were followed up for 3 years. All-cause mortality during follow up was 32.7%, and 1.9% of patients needed aortic valve re-replacement. From baseline to 3 years, mean transaortic gradient decreased from 35.0mm Hg to 16.6mm Hg, effective orifice area increased from 0.93cm^2 to 1.15cm^2, and moderate to severe aortic regurgitation decreased from 45.1% to 2.5%. Left ventricular ejection fraction improved from 50.7% at baseline to 54.7% at 3 years, and left ventricular mass index decreased from 136.4 g/m^2 to 109.1 g/m^2. The percentage of patients in New York Heart Association functional class II or III improved from 90.4% at baseline to 14.1% at 3 years (p<0.0001).

Comment: A degenerated bioprosthetic aortic valve raises the question of another operation, usually under more adverse conditions than the initial implantation. Valve-in-valve TAVI appears to be a potential solution but comes with challenges, some are technical. The presented registry data do not compare with surgery but show that valve-in-valve TAVI is associated with favourable functional and haemodynamic parameters. While this is reassuring, worldwide trends show that the age threshold for implantation of bioprosthetic valves is considerably lower than 10 years ago. Some of this trend is from assuming that a valve-in-valve procedure might be a future bail out. However, there is very little comparative data for this 'replace and later TAVI' strategy.

Reference: J Am Coll Cardiol 2019;73(21):2647-55
Abstract

Threshold of pulmonary hypertension associated with increased mortality

Authors: Strange G et al.

Summary: This analysis of the National Echocardiography Database of Australia cohort evaluated the prognostic significance of increasing pulmonary pressure in patients with pulmonary hypertension. 157,842 men and women with pulmonary hypertension and estimated right ventricular systolic pressure (eRVSP) data who were followed up for a median 4.2 years were included. Overall, 11.4%, 4.4%, and 2.9% of patients had eRVSP levels indicative of mild (40–49mm Hg), moderate (50–59mm Hg), or severe (≥60mm Hg) pulmonary hypertension, assuming a right atrial pressure of 5mm Hg. After adjustment for confounding factors, patients with eRVSP within the third (28.05–32.0mm Hg) and fourth (32.05–38.83mm Hg) quintiles had significantly higher mortality during follow-up than those in the lowest quintile (HRs, 1.41 and 1.98, respectively). A clear and consistent threshold of increased mortality was evident at eRVSP 30.0mm Hg.

Comment: The estimation of RVSP during an echocardiogram is technically easy and commonly done. RVSP measurements were correlated to mortality in this study, after adjustment for cofounders. The results are straightforward: elevated RVSP correlated in a somewhat 'dose-dependent' manner with mortality, and the risk of mortality increased at an eRVSP around 30–32mm Hg.

Reference: J Am Coll Cardiol 2019;73(21):2660-72
Abstract

hopeforhearts.nz
Connecting doctors - informing decisions
HOPE FOR HEARTS
Aortic Stenosis Education
Select a specialist for → Aortic Stenosis Auckland FIND
Visit hopeforhearts.nz - an education portal by doctors, for doctors.

© 2019 RESEARCH REVIEW