Change is on the horizon. Here in Wenatchee, vaccination efforts are in full swing and many of my clinic patients have received both doses of their vaccine. The proportion of virtual care appointments is shrinking, and patients are eager to return to clinic to see a familiar face (or at least one-half of it). Over the past year, COVID-19 has had a devastating effect on families, communities, and health care workers. The indirect effects of this pandemic, however, demand our equal attention as well. On a daily basis, my patients express concern about social isolation, depression, lack of activity and weight gain. Despite the ability to pick up the phone and connect with nearly any patient at any time, my patients still feel disconnected. Telemedicine has proven itself a necessary component of healthcare delivery, but equally important is our focus on understanding how our patients view the connection with their healthcare team.

Our deep dive into the world of telemedicine has uncovered significant health care disparities in terms of who has access to the things many of us take for granted, including broadband internet, connected devices and the ability to navigate this technology to access healthcare. With the immense amount of knowledge gained in virtual healthcare delivery over the past year, we must work to capitalize on this momentum. Our ultimate aim should be a purposeful blend of virtual and in-person care that is responsive to the patient’s social and financial situation, comfort with technology, and the ebb and flow of their clinical course.

As the Washington Chapter CVT Liaison, my role is also about building connections. Stepping into a position aimed at bringing people together when human connection was essentially prohibited has been a challenge, to say the least. There have been lessons learned over the past year, however, in how to develop and host engaging discussions, educational webinars and virtual conferences that have allowed us to remain connected despite our geographical distances. Despite this, it remains clear that while a conference may be comfy in our PJs, the majority of us still look forward to the day when we can gather again to share that human connection that can only truly be fostered in person.

I look forward with optimism to the next year bringing a thoughtful blend of virtual and in-person opportunities and to meeting many more of you along the way.

Katie Bates, DNP, ARNP, CHFN
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katie.bates@confluencehealth.org
Do you know of a CVT Member or Team doing outstanding work in their field? Are they a content expert, working to advanced cardiovascular care, or leading innovative change within their organization? Nominate them for a feature interview in our next quarterly newsletter!

Contact katie.bates@confluencehealth.org

Feature Articles

Continue reading for summaries of current cardiology topics written by Washington State CVT members!

- Cardiac Amyloid: An Imager’s Perspective
- The 2021 HFREF Update
- Review of the 2020 ACC/AHA Guideline for the Management of Patients with Valvular Heart Disease
- Rivaroxaban in Patients with Atrial Fibrillation and a Bioprosthetic Mitral Valve (RIVER Trial)

Cardiac Amyloid: An Imager’s Perspective

Sofia Voorhies, ACS, RDCS (AE) (PE)
Cardiac Sonographer
Confluence Health, Wenatchee

Shortness of breath, fatigue, edema, chest pain, arrhythmias, dizziness and syncope are all appropriate indications for an echocardiogram. These are also common symptoms of cardiac amyloidosis. As a cardiac sonographer we may perform the first diagnostic test to suggest the rapidly progressing multisystem disease. It has been well demonstrated that amyloidosis has
been significantly underdiagnosed. Coincidentally, the field of echocardiography has developed more objective methods for suggesting the cardiac manifestations of amyloidosis.

Strain, the advanced echo technique, has grown in popularity for cardio-oncology. In addition to detecting amyloid, strain patterns for amyloid are most specific and recognizable—the classic bull’s eye or apical sparing. This, in combination with an abnormal global longitudinal strain (GLS), is suggestive of amyloid. It is important to note that values for strain vary based on the vendor used and comparisons should be made from the same vendor and software.

Strain may not be obtainable in all settings. Some ultrasound carts may lack the technology, sonographers may have limited training. There will always be the possibility of technical limitations due to body habits and imaging windows. Other features that may hint toward the presence of cardiac amyloid are the following:

- Increased bi-ventricular wall thickness
- Bi-atrial enlargement
- Grossly normal ejection fraction with a low stroke volume
- Diastolic dysfunction (low e’, increased E/e’, increased E/A ratio, mitral “L” wave)
- Low flow/low gradient aortic stenosis
- Pericardial and/or pleural effusion
- Thickened inter-atrial septum

Individually, these findings may not be suggestive, but when several of these features are presented, the suspicion for amyloid should increase especially with symptoms. It is important as a sonographer to recognize the features and take additional measurements, that may not be routine.

It is important to note that echocardiography cannot differentiate between AL and ATTR amyloid. Obviously, early detection is critical and the earliest features of cardiac amyloid by echo are a GLS greater than or equal to -14%, and a relative wall thickness of greater than 0.52.

If a patient presents with any of the above symptoms and has increased wall thickness, aortic stenosis or Heart failure with a preserved ejection fraction strain would be the next step in a comprehensive echo. The earlier these patients are found and treated, the better.
1. Disease stages in patients with valvular heart disease should be classified (Stages A, B, C, and D) based on symptoms, valve anatomy, the severity of valve dysfunction, and the response of the ventricle and pulmonary circulation.

2. In the evaluation of a patient with VHD, H+P examination findings should be correlated with the results of noninvasive testing (ie, ECG, chest x-ray, transthoracic echocardiogram). If there is discordance between the physical exam and initial noninvasive testing, consider further noninvasive (computed tomography, cardiac magnetic resonance imaging, stress testing) or invasive (transesophageal echocardiography, cardiac catheterization) testing to determine optimal treatment strategy.

3. For patients with VHD and atrial fibrillation (except for patients with rheumatic mitral stenosis or a mechanical prosthesis), the decision to use oral anticoagulation to prevent TE events, with either a vitamin K antagonist or a non–vitamin K antagonist anticoagulant, should be made in a shared decision-making process based on the CHA\textsubscript{2}DS\textsubscript{2}-VASc score. Patients with rheumatic mitral stenosis or a mechanical prosthesis and atrial fibrillation should receive oral anticoagulation with a vitamin K antagonist.

4. All patients with severe VHD being considered for valve intervention should be evaluated by a multidisciplinary team, with either referral to or consultation with a Primary or Comprehensive Valve Center.

5. Treatment of severe aortic stenosis with either a transcatheter or surgical valve prosthesis should be based primarily on symptoms or reduced ventricular systolic function. Earlier intervention may be considered if indicated by results of exercise testing, biomarkers, rapid progression, or the presence of very severe stenosis.

6. Indications for transcatheter aortic valve implantation are expanding because of multiple randomized trials of transcatheter aortic valve implantation versus surgical aortic valve replacement. The choice of type of intervention for a patient with severe aortic stenosis should be a shared decision-making process that considers the lifetime risks and benefits associated with type of valve (mechanical versus bioprosthetic) and type of approach (transcatheter versus surgical).

7. Indications for intervention for valvular regurgitation are relief of symptoms and prevention of the irreversible long-term consequences of left ventricular volume overload. Thresholds for intervention now are lower than they were previously because of more durable treatment options and lower procedural risks.

8. A mitral transcatheter edge-to-edge repair is of benefit to patients with severely symptomatic primary mitral regurgitation who are at high or prohibitive risk for surgery, as well as to a select subset of patients with secondary mitral regurgitation who remain severely symptomatic despite guideline-directed management and therapy for heart failure.

9. Patients presenting with severe symptomatic isolated tricuspid regurgitation, commonly associated with device leads and atrial fibrillation, may benefit from surgical intervention to reduce symptoms and recurrent hospitalizations if done before the onset of severe right ventricular dysfunction or end-organ damage to the liver and kidney.

10. Bioprosthetic valve dysfunction may occur because of either degeneration of the valve leaflets or valve thrombosis. Catheter-based treatment for prosthetic valve dysfunction is reasonable in selected patients for bioprosthetic leaflet degeneration or paravalvular leak in the absence of active infection.
Rivaroxaban in Patients with Atrial Fibrillation and a Bioprosthetic Mitral Valve (RIVER Trial)

Patients with atrial fibrillation and a bioprosthetic mitral valve require long-term anticoagulation. Recommendations for the use of warfarin in this patient population are guided by limited evidence from randomized trials and the efficacy and safety of direct oral anticoagulants have historically been based on subgroup analyses of pivotal trials of apixaban and edoxaban along with a pilot trial with dabigatran. Published in the New England Journal of Medicine November 14, 2020 the River Trial was conducted to assess the efficacy and safety of rivaroxaban as compared with warfarin in patients with atrial fibrillation and a bioprosthetic mitral valve. Mean time to a primary outcome event (composite of death, major cardiovascular events, or major bleeding at 12 months) was 347.5 days in the rivaroxaban group and 340.1 days in the warfarin group (RMST difference, 7.4 days; 95% CI, -1.4 to 16.3; P<0.001 for non-inferiority and P=0.10 for superiority). With respect to bleeding events at 12 months, major bleeding occurred in 7 patients (1.4%) in the rivaroxaban group and in 13 (2.6%) in the warfarin group (hazard ratio, 0.54; 95% CI, 0.21 to 1.35). There were no reported intracranial bleeding events in the rivaroxaban group and 5 (1.0%) in the warfarin group. The incidence of total bleeding events was not significantly different between the two groups. These findings provide new information with respect to the use of rivaroxaban within 3 months after mitral-valve surgery in patients with atrial fibrillation.

Link: Rivaroxaban in Patients with Atrial Fibrillation and a Bioprosthetic Mitral Valve

Key Takeaways From the 2021 Update to the Consensus Decision Pathway for Heart Failure with Reduced Ejection Fraction (HFrEF)

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Advanced Heart Failure and Transplant
Pulse Heart Institute, Tacoma, WA

Recently the Oversight Committee released a 2021 update to the “2017 ACC Expert Consensus Decision Pathway for Optimization of Heart Failure Treatment: Answers to 10 Pivotal Issues About Heart Failure with Reduced Ejection Fraction”. This document provides an excellent and concise evaluation of many aspects of heart failure management across the spectrum, from initial diagnosis to end stage management. However, there are a few key points worth highlighting.

- ARNI therapy, specifically sacubitril/valsartan (entresto), is now the preferred renin-angiotensin antagonist in HFrEF. A direct-to-ARNI approach is now recommended for de novo initiation of anti-RAAS therapy, with careful monitoring of renal function and blood pressure. If possible, patients on ACEi or ARB therapy should be switched to ARNI therapy.
• Use of the SGLT2 inhibitor dapagliflozin (farxiga) has shown evidence of lowering risk of worsening HF or death from CV causes in the DAPA-HF study. For patients with an eGFR >30 addition of a SGLT2 should be considered to their medication regimen.
• Getting patients to optimal target doses helps our patients achieve the maximal benefits of GDMT:
  o Beta blocker doses should be adjusted every 2 weeks in patients with no evidence of decompensated heart failure and no contraindications to higher doses
  o ARNI along with ACEi/ARB should be adjusted similarly, every 2 weeks in patients with no contraindications. Renal function, potassium, and blood pressure should be closely monitored while up-titrating.
  o MRA agents such as spironolactone should be added to all patients with HFrEF that do not have contraindications to its initiation. It is not necessary to achieve target or maximal doses of other drugs before addition of MRA therapy
  o Inclusion of hydralazine/isosorbide dinitrate should be considered in patients who remain hypertensive despite target or maximally tolerated doses of beta blocker, ARNI/ACEi/ARB, and MRA therapy reached.

These are merely a few highlights that likely most impact the majority of individual’s practices since these are simple things we can all do for our heart failure patients. This document provides solid strategies to help our patients and pathways for when to consult heart failure specialists.

2021 Update to the 2017 ACC Expert Consensus Decision Pathway for Optimization of Heart Failure Treatment

Use the code CVTR refer20 to recruit new CV Team members for FREE membership to ACC. This code will be valid through August 31, 2021.

National CVT News:

DRIVING HIGH-FUNCTIONING CLINICAL APP TEAMS

For organizations looking to optimize the efficiency of their practice in COVID-19 times and beyond, the Journal of the Association of Physician Assistants (JAAPA) recently published recommendations by the Medical University of South Carolina Health-Charleston based on system-wide assessment that included surveys and interviews with APP clinicians and leaders. Among the recommendations broken into three categories of productivity, clinical operations, and professional development/support were:

• Establish regular team meetings to discuss department operations and dashboards
• Incorporate APPs in hiring process of all departmental staff including physicians and APP peers.
• Collaborate with department leaders in creation of physician and APP orientation programs.
• Educate physicians, registered nurses, administrative staff, and residents on appropriate APP scope of practice and utilization.

For a nice synopsis of the articles by Sherrie Webb PA-C, click here.

MEASUREMENT OF NONBILLABLE SERVICE VALUE ACTIVITIES BY NURSE PRACTITIONERS, PHYSICIAN ASSISTANTS, AND CLINICAL NURSE SPECIALISTS IN AMBULATORY SPECIALTY CARE

A recent article in the Journal of the American Association of Nurse Practitioner (JAANP) looked at the quantity, duration, and type of “service value activities” performed by nurse practitioners (NPs), physician assistants (PAs), and clinical nurse specialists (CNSs), in ambulatory settings which are non-billable, but contribute to billable service, quality of care, and value of care. This study implies how the value of CV Team members can be assessed for allocation of time and resources.

CV TEAM SPEAKER LIST

Share your expertise and knowledge with your colleagues. At upcoming virtual conferences that many of your chapters are planning. The CV Team Council uses the list of potential speakers for chapter, state or national events. Add your name and other qualified CV Team members by clicking on the link.

Important Dates:

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<tr>
<td>March 2021</td>
<td>o National Registered Dietitian Day 3/10</td>
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<tr>
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<td>o National Pulmonary Rehabilitation Week 3/8-3/14</td>
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<td>o National Doctors ’Day; 3/30</td>
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<td>April 2021</td>
<td>o ACC Committee appointment commence 4/1</td>
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<td>o World Immunization Week; 4/22 - 28</td>
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<td>May 2021</td>
<td>o ACC21 Scientific Sessions VIRTUAL - 5/15-17</td>
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