Cath Lab Digest

A product, news & clinical update for the cardiac catheterization laboratory specialist

PROGRAM SPOTLIGHT

Building a VTE Center of Excellence at HCA Florida Memorial Hospital

An interview with Mohannad Bisharat, MD, FACC, Medical Director of Cardiac Coronary Interventions, Ashchi Heart & Vascular Center.

More than a decade ago, the United States Surgeon General instituted a nationwide "call to action"[1] to solve a serious and growing health problem in the U.S.: deep vein thrombosis and pulmonary embolism (PE). In the years since and with the magnitude of COVID-related thrombotic events, the impact of that call has been less than hoped for and the number of patients who suffer from venous thromboembolism (VTE) continues to increase.[2,3]

In the spring of 2021, the interventional cardiologists at HCA Florida Memorial Hospital decided to amplify their efforts to address VTE at their institution. Dr. Mohannad Bisharat describes how the VTE Center of Excellence program got its start, how patient pathways have changed, and the key elements needed for success.

continued on page 16

In This Issue

PATIENT CARE

Communication Coaching in Cardiology

CLD talks with Kathryn Pollak, PhD

Kathryn Pollak and colleagues recently published a two-arm randomized clinical trial in *JAMA Internal Medicine*[1] evaluating a communication coaching intervention in cardiologists. The trial was performed at outpatient cardiology clinics at an academic medical center and affiliated community clinics from February 2019 to March 2020. Participants included 40 cardiologists, 161 preintervention patients, and 240 postintervention patients. Half the participating cardiologists underwent three 1:1 communication coaching sessions. Two sessions included feedback on their audio-recorded encounters with patients. In the sessions, communication coaches taught 5 skills: (1) sitting down and making eye contact with everyone present, (2) asking open-ended questions, (3) reflective statements, (4) empathic statements, and (5) "What questions do you have?" Blinded coders evaluated recorded audio of physician-patient conversations and patients completed a survey after their visit.

continued on page 10

CASE REPORT

The Use of Renal Artery Stents in Aneurysmal Coronary Artery Disease

Jessica Pickard, BS, MS-IV; Adam Reitz, DO; John Phillips, MD

Abstract

Aneurysmal coronary artery disease (ACAD) is a condition in which the coronary arteries become widened and dilated. It is defined as arterial dilatation with a diameter 1.5 times greater than the adjacent normal coronary vessel.[1] The optimal approach to the management of acute coronary syndrome in the setting of ACAD is somewhat controversial and understudied. While optimal management includes percutaneous intervention and stent placement, the diameter of these vessels poses a challenge to appropriate percutaneous intervention and restoration of blood flow, causing many ACAD patients to receive second-line therapies including balloon angioplasty and mechanical thrombectomy. This case report aims to shed light on the potential utilization of renal artery stents within aneurysmal coronary vessels to provide patients with ACAD first-line intervention in the setting of acute coronary syndrome.

continued on page 13

Continued from cover

Building a VTE Center of Excellence at HCA Florida Memorial Hospital

An interview with Mohannad Bisharat, MD, FACC, Medical Director of Cardiac Coronary Interventions, Ashchi Heart & Vascular Center.

Dr. Bisharat, can you describe venous thromboembolism (VTE) care at HCA Florida Memorial before you started this program?

We had more than 20 providers offering various treatment modalities to patients who suffer from VTE. When patients arrived in the emergency department (ED), the treatment pathway assigned was determined by who was on call and what relationships they had with our interventional team. It was like the wild west. Some patients would receive anticoagulation and others would receive interventional treatments — there were no set guidelines for risk stratification and how to identify which patients might benefit from different types of treatment. During program start, we developed an accepted standardized pathway to integrate thrombectomy treatment into care at our facility. This was a stark difference to how stroke or myocardial infarction patients were identified and triaged at our hospital, and the motivation for finding a better solution for these patients.

What were some of the challenges you faced?

Early on, our awareness of the latest treatment options for VTE patients was lacking, which resulted in very fragmented patient pathways. It was a challenge to identify patients who might benefit from the latest treatment options. Many patients with DVT that could benefit from intervention were going home from the ED on anticoagulation alone. On the PE side, most providers at our institution followed the guidelines established by the American College of Chest Physicians (CHEST) or the European Society of Cardiology (ESC). These guidelines change often and are based on limited data that weigh mortality against the bleeding risk from thrombolytics, ignoring other predictors of adverse events. Given the growing body of evidence in the published literature around safety and efficacy of mechanical thrombectomy, we had split opinions on which patients could benefit from advanced intervention.

How did you mend the fragmented patient pathway?

The first thing we did was to prioritize disease identification. We established a clear way to identify and triage patients who should receive consultation, allowing for quick and easy referral to the interventionalists. We created PE risk stratification models and PE/DVT algorithms, and we also developed a unified Pulmonary Embolism Response Team (PERT) call schedule. Because of this, referring physicians didn't have to guess who to call and they didn't have to rely on their relationship with only one physician.

Did you do any special outreach or marketing to boost visibility of the program?

We provided education across the hospital about the disease state, the latest treatment options, and our new algorithms. We held lunches and dinners geared toward non-interventionists and referring physicians, as well as sessions that were geared toward other hospital caregivers — everyone from the ultrasound technologists to the nursing staff on the floor, to the nurses and technologists in the catheterization lab. We wanted everyone to be educated — we wanted everyone to feel that they are part of the program. Additionally, we have done a few television special features to share our growing program with the community.

Were there specific data points or findings at your institution that influenced your decision to move forward with a formal process for treating VTE patients?

- Mortality reduction from 12.7% down to 5.9%
- Reduction in intensive care unit admits
- Reduction of length of stay by 2 days
- 12% increase in the number of patients discharged home

Did your team start from scratch, or did you work with external resources to develop the program?

We were made aware of a new program offered by one of our industry partners, Inari Solutions Group (ISG). Their team consists of former hospital leaders and administrators who understand and have similar experiences with the challenges we were facing. We knew that we needed to create a program, but we also recognized that this would be a monumental task to take on while doing the daily work of managing patient care. We established

Figure 1. Left to right: Stephanie Smithgall, RN, BSN, HCA Florida Memorial Hospital, Cardiovascular Services Data Analyst; Dennis Chadwick, BS, RCIS, HCA Florida Memorial Hospital, Heart Center Director; Mohannad Bisharat, MD, FACC, Medical Director of Cardiac Coronary Intervention, Ashchi Heart & Vascular Center; Debra Stiffler, RN, DNP, NE, HCA Florida Memorial Hospital, Cardiovascular Service Line Administrator. (Jacksonville, Florida)

a partnership to accelerate the process. It was important to us to be able to remain focused on creating the structure to formalize and grow these programs, regardless of the type of intervention. The PERT team had the same commitment to what is truly best for the patient and that created an unbiased atmosphere where we could discuss the current state of operations, hospital culture, and the different evidence-based approaches available to us.

How did you determine how program decisions would be made?

The first thing we needed to do was to create structured governance, or a multidisciplinary committee where decisions could be made to drive change in the program. At HCA Florida Memorial Hospital, we created a committee which included administration, non-interventionalists, interventionalists, a VTE coordinator, and quality department staff. We standardized diagnostic testing upon admission, which included imaging and cardiac biomarkers to assist in the best treatment strategy for each patient. This committee set priorities for the program including quality metrics, clear patient pathways, and consistent follow-up after hospital discharge.

Were there any key players that helped you drive adoption of your program?

Once the priorities were defined, key members of the hospital team were needed to deliver on the plan. Key stakeholders in the development of a PERT program include Pharmacy, Lab, Radiology, Cath Lab, and the Emergency Department including our Cardiologist, Radiologist and Emergency Department Physicians. Our Cath Lab Director, Dennis Chadwick, and Cardiovascular Service Line Administrator, Debra Stiffler, were instrumental in educating the hospital team on these changes.

Where are you in the development of your program and how do you disseminate the VTE Center of Excellence principles to colleagues at your institution?

HCA Florida Memorial Hospital is now 24 months into our program rollout. We have customized our marketing information for outreach to providers in the medical community. We use these materials to share our successes and engage them in learning about what we can now provide to patients. We have patient storyboards and case reports that are sent to referring physicians post procedure, and we invite them to come in and watch procedures — when they see a patient's condition improve mid procedure right before their eyes, they become believers.

At this point in the evolution of your VTE program, how do you define success?

Our governance committee established key patient outcomes and financial metrics to benchmark and track. You cannot monitor what you do not measure. Because we were using new technology and new treatment algorithms, quality was a key focus for us — not only for those patients who received mechanical thrombectomy, but for those who receive other treatment options as well. We monitor key metrics such as length of stay (LOS, both overall and post-procedure, if applicable), adverse events, discharge disposition, 30-day readmission rates, and cost. If we see a trend in any of these metrics, our governance committee can modify and change the algorithm or pathway.

We've had the opportunity to see firsthand the benefits and successes that mechanical thrombectomy can have for a defined group of patients. We have reduced mortality by 6.8% now that our clinicians know that thrombectomy is an option for their patients. We have also decreased the hospital resources needed to take care of these patients — our average pulmonary embolism length of stay has decreased by 2 days. Having the opportunity to partner with industry, develop a standardized approach, establish a governance team, and monitor our success has been a game changer for us.

What are you most proud of?

Ideally, we would like to create a standard of care so that every patient with PE and DVT symptoms presenting to our hospital gets identified, triaged and treated according to protocol. Standard of care treatment for PE has yet to be established, but at HCA Florida Memorial Hospital, we believe that development of our PERT team, along with the work we did with our industry partner, puts us on the cutting edge. We are early adopters of what we believe will become standard of care.

We've had the opportunity to see firsthand the benefits and successes that mechanical thrombectomy can have for a defined group of patients. We have reduced mortality by 6.8% now that our clinicians know that thrombectomy is an option for their patients. We have also decreased the hospital resources needed to take care of these patients — our average PE length of stay has decreased by 2 days. Having the opportunity to partner with industry, develop a standardized approach, establish a governance team, and monitor our success has been a game changer for us. We may have been able to do this on our own, but the partnership allowed us to accelerate the process, learn more about what other institutions like ours have done, and create a network of resources and collaborators among colleagues at other institutions. ■

For Further Reading

1. Donnelly R. New team treatment for blood clots could save thousands of lives. *First Coast News*. February 2, 2023. https://www.firstcoastnews.com/article/news/local/doctors-want-treatment-plan-for-blood-clots-to-become-standard-of-care/77-4fd9c36e-6a2c-4c47-9600-3a0b29c07673
2. Pulmonary Embolism Response Team (PERT) Consortium. https://pertconsortium.org/
3. Blood Clot and Pulmonary Embolism Policy Workgroup (Senate Bill 612: Emily Adkins Prevention Act). Florida Agency for Healthcare Administration. https://ahca.myflorida.com/agency-administration/florida-center-for-health-information-and-transparency/office-of-data-collection-quality-assurance/blood-clot-and-pulmonary-embolism-policy-workgroup

References

1. US Department of Health and Human Services. Surgeon General's Call to Action to Prevent Deep Vein Thrombosis and Pulmonary Embolism 2008. April 3, 2009. https://www.ncbi.nlm.nih.gov/books/NBK44178/
2. Münster AM, Rasmussen TB, Falstie-Jensen AM, et al. A changing landscape: temporal trends in incidence and characteristics of patients hospitalized with venous thromboembolism 2006-2015. *Thromb Res.* 2019 Apr; 176: 46-53. doi:10.1016/j.thromres.2019.02.009.
3. Klok FA, Kruip MJHA, van der Meer NJM, et al. Confirmation of the high cumulative incidence of thrombotic complications in critically ill ICU patients with COVID-19: an updated analysis. *Thromb Res.* 2020 Jul; 191: 148-150. doi:10.1016/j.thromres.2020.04.041

Mohannad Bisharat, MD, FACC
Medical Director of Cardiac Coronary Interventions, Ashchi Heart & Vascular Center, Jacksonville, Florida