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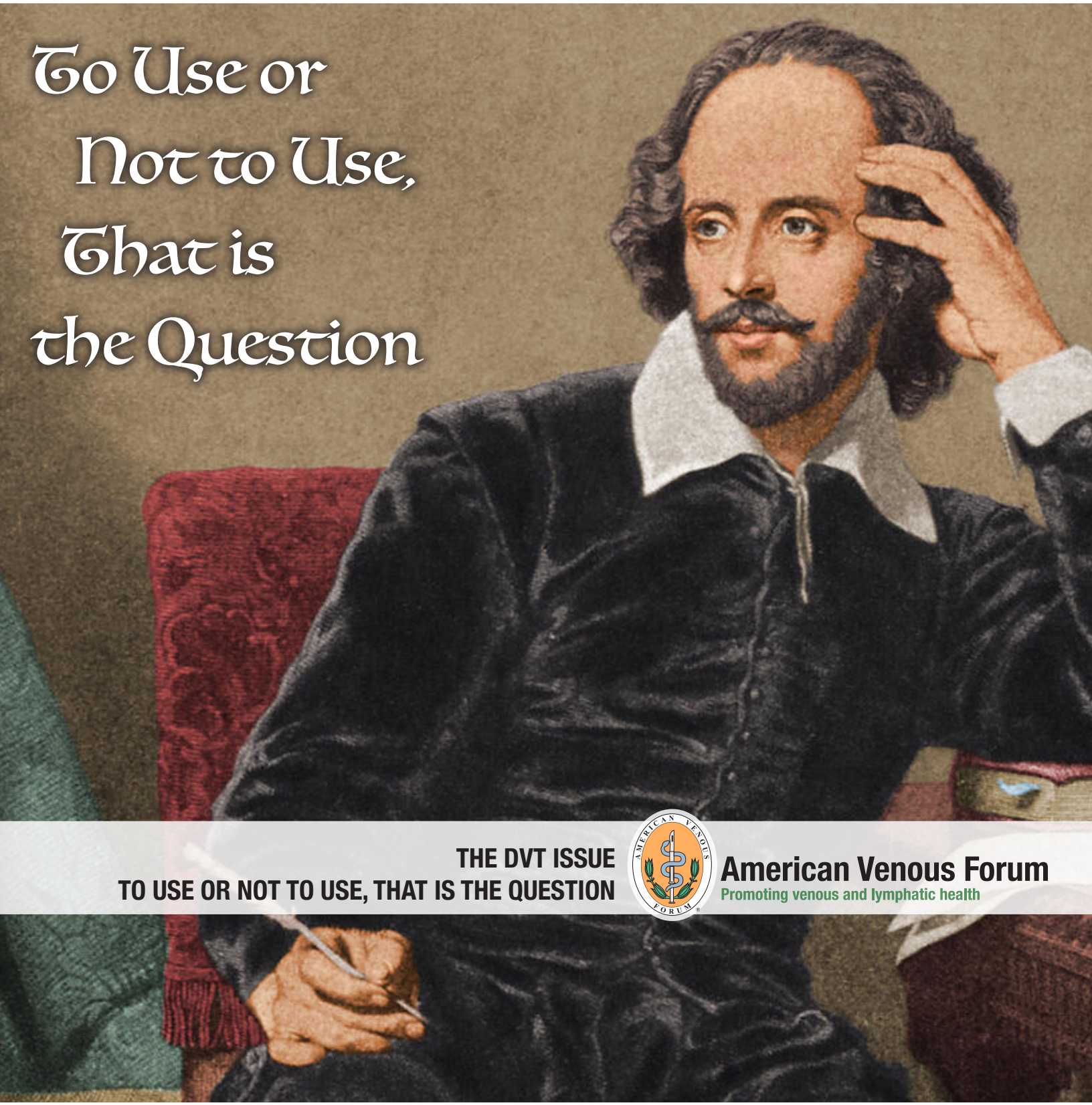

THE DVT ISSUE
TO USE OR NOT TO USE, THAT IS THE QUESTION

American Venous Forum
Promoting venous and lymphatic health

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Page 36

Steve Elias, MD

I am stuck on page 36. The entire evening. Maybe you have been anchored on a page 36 at some point in your life. Perhaps a metaphorical page 36. I am unwillingly moored on page 36 of the new book *JFK*, written by Fredrick Logevall.

Page 36 has so much entanglement and surprise that I have gone down the Google rabbit hole. Lewis Carroll's Alice has nothing on me. It started out innocently enough. The book follows JFK's life (even before he was born) and his influences before he entered politics. His father, his mother, his siblings, etc. How all of this shaped his life and maybe his death. Page 36 covers events prior to JFK's birth. His father, Joseph Kennedy, has invited a few Harvard friends to dinner. WWI has started and the US has not entered the war yet; but, US citizens have volunteered for the Ambulance Corps. A footnote on page 36 states that of the 3500 American volunteers, 450 were undergraduates or alumni of Harvard. It goes on to cite some who became famous: novelists John Dos Passos and Charles Nordoff; poet ee cummings (a favorite of mine); and Alan Seeger (Pete Seeger was his nephew. Pete Seeger went to Harvard for 2 years). This got me jumping down the Google rabbit hole. Remember I'm still on page 36.

It turns out Alan Seeger wrote the poem "I Have a Rendezvous With Death" about his war experience. It was a favorite of JFK's. Thick poem. ee cummings, one of my favorite poets, deserved a Google search as well. He is the poet who eschews capital letters, grammar, apostrophes, and commas, among other things. He wrote a book about his war time experience, *The Enormous Room*. I then Googled the book. After my second Sagamore rye and soda, I forced myself to turn the page. Page 37 was next and the adventure continued. It had been 55 minutes since I had arrived on page 36. At this rate I may finish the book before I die. It is almost 700 pages long.

The AVF *Vein Specialist* adventure continues with this issue entitled "The DVT Issue: To Use or Not To Use, That Is the Question." We asked our contributors to answer the question as it relates to techniques and technologies that treat DVT. Where do they fit in and where do they maybe not fit in? Some of our writers may be known to you. Some may be new to you. This was purposeful. One goal of any organization is to grow, to be inclusive, and to encourage members to participate. We asked our industry partners for suggestions. We're happy with the final result. Read these articles.

A new feature appears in this issue: The AVF *Vein Specialist* Poll. In each issue we will ask one question for you to answer by linking to a survey. The results will be published in the subsequent issue. This first question follows our issue's theme: After acute thrombus removal (no matter how you did it), how often do you place a stent?

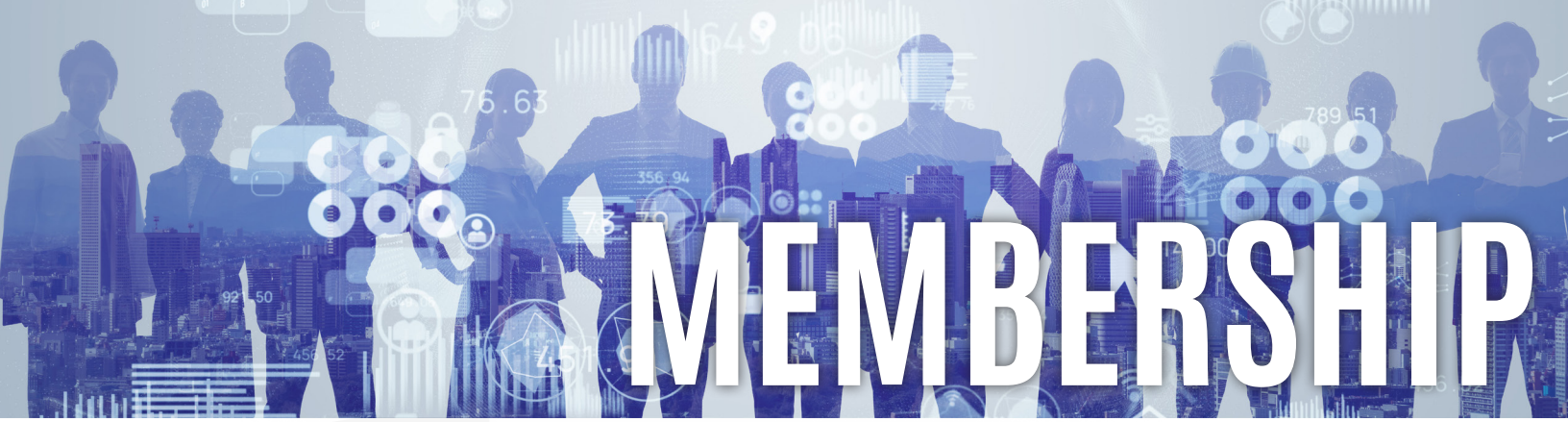
Finally, no one embraces a pay cut. Our article that gives you insight into AVF's efforts to thwart CMS cuts will answer the

question, "So what has AVF done for me lately?" This is important stuff. You can't leave it to others to get this done. You've been inundated with information and requests for support of AVF's efforts. It's not too late. John Kennedy set the stage for us when he famously said at his inaugural, "Ask not what the AVF can do for you, ask what you can do for the AVF." Really?

Now that I've moved onto page 37 and beyond in the JFK book, I try not to get stuck. In fact, as of this writing I've made progress. Page 214 has the corner folded over. AVF has made progress this year as well, great progress. Our leadership is more focused and cohesive. Our administration is organized and supportive. We don't ask ourselves the question that Hamlet asks himself in Act III, Scene 1. Or in Kurt Vonnegut's short story inspired by Hamlet's soliloquy: "2BR02B" (the zero is pronounced "naught"), a futuristic, dystopian tale where aging and over-population have been solved in a unique way. 2BR02B is the phone number of the Federal Bureau of Termination's assisted suicide request line. What a way to solve a problem. It gets worse. Personally, I think Hamlet has been misinterpreted. Is Hamlet really contemplating suicide?

Please don't misinterpret this issue of Vein Specialist either. It's meant to keep you alive. AVF's phone number is for the assisted vein support line. Each issue we try to help our members. Don't only ask what has AVF done for you, ask what you can do for AVF. We are on this journey together. And it's not a 700-page book.

"Ask not what the AVF can do for you, ask what you can do for the AVF."



MEMBERSHIP

The AVF Vein Specialist Poll

NEW

Beginning this month, we will ask **ONE QUESTION** for you to **ANSWER** by linking to a survey. **THE RESULTS** will be published in a subsequent issue.

The first question follows our issue's theme:

After acute thrombus removal (no matter how you did it), how often do you place a stent?

Provide your response and contribute to future dialogs.

Please respond by October 8

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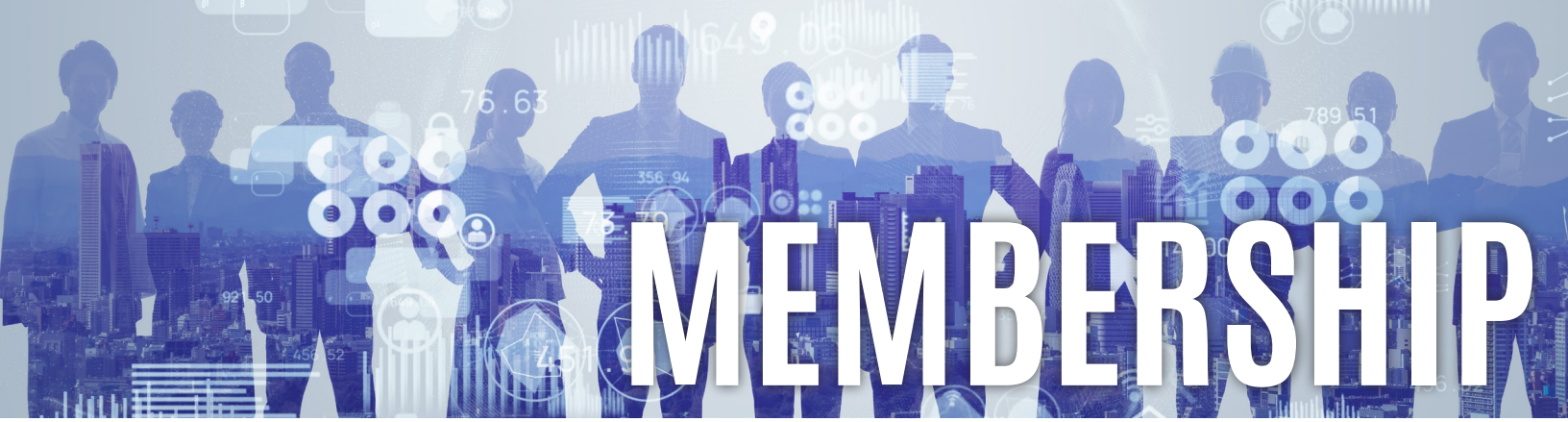

MEMBERSHIP

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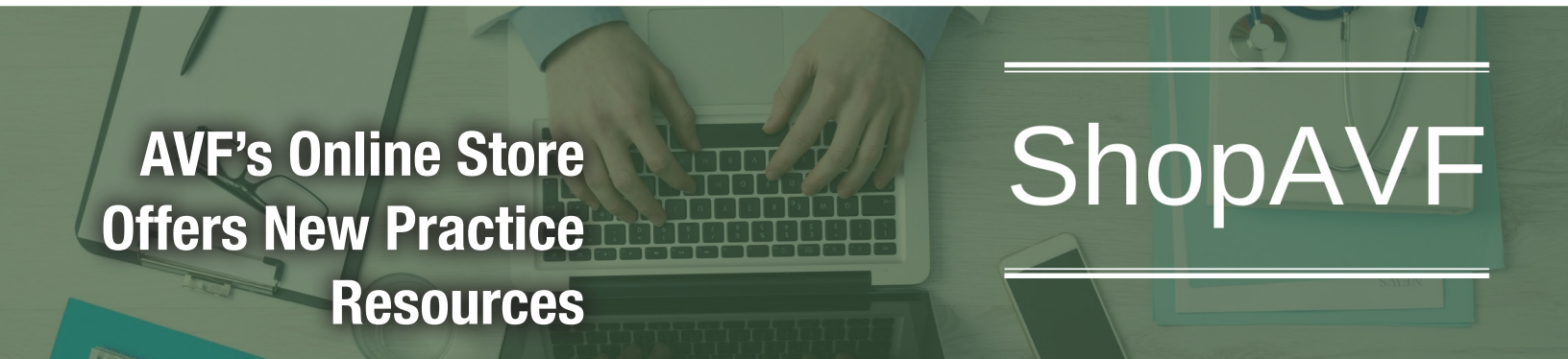

AVF's Online Store Offers New Practice Resources

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Advocacy Update: Your Voice is Needed

Mark Iafrati, MD

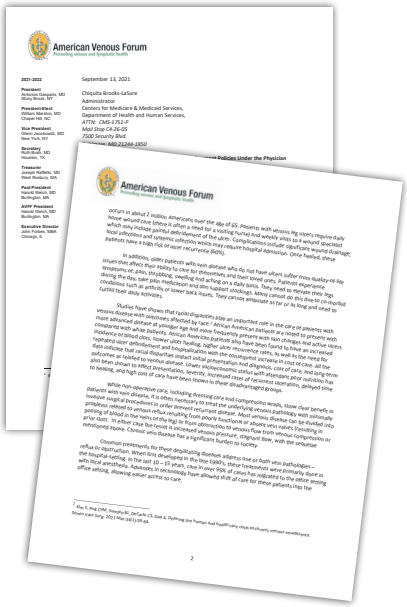
AVF's Health Policy Committee and the AVF Board of Directors continue their efforts related to educating CMS about the deleterious effects that the proposed 2022 Physician Fee Schedule (PFS) would have on patients and members. The August issue of Vein Specialist provides helpfulbackground information on this complicated issue. Your AVF leaders are working hard to prevent these changes from taking effect and are taking this fight to the government leaders who have the ability to fix the problem. On September 8, 2021 the AVF leadership met with CMS officials to discuss the dramatic and outsized financial impact that the Medicare proposed rule affecting payment for nonhospital (ie, office-based) services will have on vein practices if enacted as written. Click to view the slide deck shared with the CMS officials.

Mark Iafrati, MD

Representing AVF were President Antonios Gasparis, MD; Board of Directors Members Ellen Dillavou, MD, Steve Elias, MD, Kathleen Ozsvath, MD, Dan Monahan, MD, and Health Policy Committee Chair Mark Iafrati, MD; and Executive Director John Forbes along with representatives of Arnold & Porter, LLC, the law firm that supports AVF's public policy efforts in the regulatory and legislative arenas. The presentation included a description of AVF's mission and role of AVF members in providing care to patients with venous and lymphatic disease. Through case studies and description of clinical and administrative considerations, they explained how the proposed rules would negatively affect practitioners and, ultimately, patients.

CMS Powerpoint

The public comment period for the CMS proposal ended on September 13. AVF sent a letter to CMS that further explains the concerns in the proposed plan. CMS will consider our message along with those of many other groups and will issue a final rule in November, which is slated to take effect Jan 1, 2022. AVF hopes that our message was heard, and that CMS provides relief that will allow our patients to continue to access high quality venous care, in convenient and accessible settings. When the rule is announced, AVF will keep you informed.



CMS Letter

In the meantime we urge you to urge your congressional representatives to ask their colleagues at CMS to fix this problem! While we may be asking Congress to fix this problem legislatively, if CMS fails to act, the best result would be for CMS to halt the changes in the CY 2022 Medicare Physicians Fee Schedule and to stop the 3.75% cut in the Medicare Conversion factor, both slated for 1/1/2022.

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Acute Pulmonary Embolism

Adrian Messerli, MD

Acute pulmonary embolism (PE) is a common and sometimes fatal disease with a highly variable clinical presentation. Patients present with an array of symptoms ranging from mild dyspnea to hemodynamic instability and even death. PE is caused by emboli, which most typically originate from venous thrombi in the legs, travelling to and occluding the arteries of the lung. PE is the most dangerous form of venous thromboembolism, and undiagnosed or untreated PE can be fatal. Specifically, PE may cause right ventricular dysfunction, which can lead to hemodynamic collapse and shock.

Adrian Messerli, MD

Systemic anticoagulation remains the foundation therapy for PE. Stable patients with no right ventricular dysfunction can be discharged to home early with anticoagulation and close follow-up. Recent clinical trials exploring the use of systemic thrombolysis in intermediate- to high-risk pulmonary embolism suggest that this therapy should be reserved for patients with evidence of hemodynamic compromise. However, sparse evidence supports systemic thrombolysis, which has prompted investigators to explore other treatment modalities.

Acute interventional treatment of pulmonary embolus is an exciting novel treatment arena for those patients who present with massive or submassive PE. Several catheter-directed techniques (CDT) are available. The EkoSonic™ endovascular system (EKOS) was the first such device approved by the FDA (2004) and has accrued the most clinical trial data in support of its use. The system (Figure 1) consists of an infusion catheter, an ultrasound core wire, and a control unit. This technology uses high frequency, low power ultrasound energy (Figure 2) in combination with focally delivered thrombolytic therapy to achieve clot dissolution. This technology uses high frequency, low power ultrasound energy with focally delivered thrombolytic therapy to achieve clot dissolution. Specifically, the ultrasound produces microstreaming which disaggregates the fibrin strands within the thrombus and enhances breakdown of the clot. It also increases the surface area of the thrombus; as a result, greater plasminogen receptor sites are in contact with the thrombolytic agent.

Figure 1
Components of EkoSonic™ endovascular system include an infusion catheter, an ultrasound core wire, and a control unit.

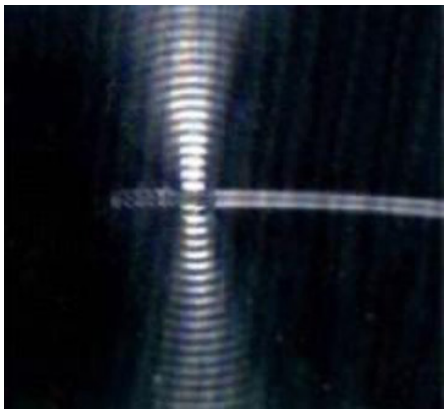

Figure 2

This technology uses high frequency, low power ultrasound energy with focally delivered thrombolytic therapy to achieve clot dissolution.

A prospective multicenter study[1] with 150 patients with acute massive or submassive pulmonary embolism who underwent EKOS CDT noted decreased right ventricular dilatation, decreased pulmonary hypertension, reduced clot burden, and decreased intracranial hemorrhages in these patients compared to anticoagulation alone.

The most common complication is access site bleeding, which can include a dreaded retroperitoneal hemorrhage. However, the EKOS catheters are commonly placed through 6Fr venous

sheaths, which are significantly smaller than the sheaths needed for many other devices. Another major potential complication in using CDT is increased risk of bleeding from the thrombolytic agent itself. Importantly, EKOS requires significantly smaller doses of thrombolytics, which attenuates that risk. In fact, a recent study[2] suggests that only 2 hours of alteplase administration may be as effective as longer infusions!

So which patients with PE are ideal candidates for EKOS placement? That remains controversial, and is an area of ongoing study. We prefer to use the catheters in patients who present with high-risk submassive PE, defined by elevated cardiac biomarkers or right ventricular strain dilatation and strain (noted by CT or bedside echocardiography). Elevated troponin correlates with mortality risk, as does RV dilatation. We also use EKOS occasionally in massive PE patients whom we are supporting with extracorporeal membrane oxygenation. Only those patients at extremely high risk of bleeding are excluded from consideration.

By way of example, we recently admitted an 83- year-old woman who presented with shock at an outside hospital due to massive PE. She was hypotensive, but fortunately stabilized with 4 mcg/min norepinephrine infusion. She had suffered a recent myocardial infarction, and was on aspirin and clopidogrel. She was also cachectic, weighing <45 kilograms. Given her rather high bleeding risk, we elected to perform EKOS CDT (Figure 3), utilizing a 2-hour protocol (8mg of alteplase total). By the next morning her blood pressure had rebounded sufficiently that we were able to wean her from the pressor and discharge her post-procedure day 3 on a direct oral anticoagulant.

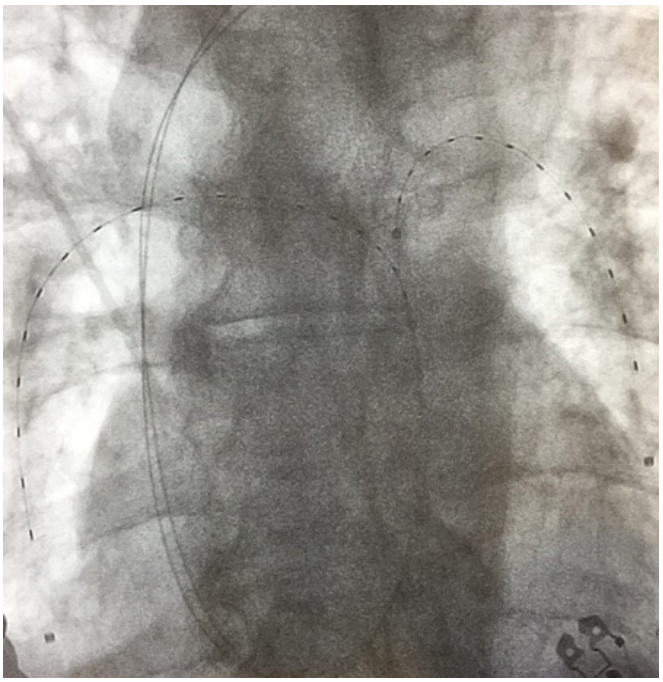

Figure 3
Performance of EKOS CDT.

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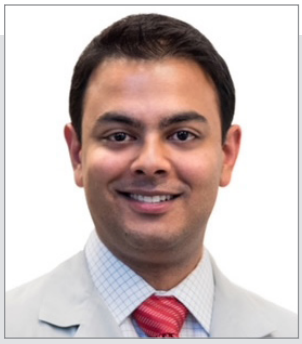
1. Sista AK, Horowitz JM, Tapson VF, et al. Indigo Aspiration System for treatment of pulmonary embolism: Results of the EXTRACT-PE trial. JACC Cardiovasc Interv. Jan 4 2021;doi:10.1016/j.jcin.2020.09.053
2. Tapson V, Sterling K, Jones N, et al. A randomized trial of the optimum duration of acoustic pulse thrombolysis procedure in acute intermediate-risk pulmonary embolism: The OPTALYSE PE trial. JACC Cardiovasc Interv. 2018;11(14):1401-1410.

Mechanical Thrombectomy for Pulmonary Embolism: Is This the Future?

Kush R. Desai, MD, FSIR



Kush R. Desai, MD, FSIR

The last decade has seen explosive growth in the endovascular treatment of pulmonary embolism (PE), mirrored not only by an increase in the number of procedures performed, but also in device innovation. Historically, patients were primarily treated via catheter-directed thrombolysis (CDT) through intra-thrombus administration of fibrinolytic medications. More recently, a proliferation of mechanical thrombectomy devices has occurred, often designed with the intent to minimize or forego the use of fibrinolytics.

Broadly, patients who are considered for advanced endovascular therapies are separated into those without hemodynamic compromise but with concerning imaging/serum findings (elevated right ventricular to left ventricular [RV/LV] ratio, elevation of troponin or brain natriuretic peptide) or high risk historical/clinical features (collectively termed submassive or intermediate risk PE), or those with significant vital sign derangement primarily manifested through hypotension (massive PE).

Several options for mechanical thrombectomy™ exist. This article will focus on the use of Penumbra's Indigo™ system (Alameda, CA). This system works via pump-driven aspiration through various catheter sizes, assisted by a "separator" to dislodge fragments that occlude the distal lumen, thereby permitting continuous suction. The recently published EXTRACT-PE (Evaluating the Safety and Efficacy of the Indigo Aspiration System of the Indigo Aspiration System in Acute Pulmonary Embolism) trial was performed with their 8Fr system (CAT8) system; the trial demonstrated improvement in submassive PE (defined per American Heart Association guidelines as RV/LV ratio of > 0.9) via a surrogate endpoint of RV/LV ratio reduction.[1] Efficacy and safety results of this trial were overall similar to the FLARE (FlowTriever Pulmonary Embolectomy Clinical Study) trial.

One common factor with all MT options is that hard procedural endpoints, i.e., when to terminate the procedure, have not been developed. Thus, it is a matter of operator discretion. Given that thrombus burden does not clearly correlate with disease severity, and by extension improvement in severity following thrombectomy, pulmonary angiography after thrombectomy may not be revealing. A clinical factor, such as heart rate or pulmonary arterial pressure, likely will signal that the intervention is complete; further research is needed in this regard. With mechanical thrombectomy, care must be taken with blood loss when thrombus is not directly engaged. With regard to the Indigo system, recent development of their Lightning™ aspiration technology helps mitigate this issue by performing intermittent aspiration while in a patent vessel. However, it remains important to be mindful of blood loss during the procedure.

No clear comparative data are available on the superiority or safety of MT over CDT; it is a matter of operator discretion. In the most common PE intervention scenario with submassive PE, MT can be performed semi-urgently, with an eye to emergently performing the procedure if the patient is clinically deteriorating. With a massive PE, the decision is less clear given the overall poor outcomes reported to date. If endovascular intervention is to be undertaken, my recommendation is to do so in the most controlled scenario possible, with abundant clinical support available (i.e., anesthesiology) and ideally with the patient on ECMO (extracorporeal membrane oxygenation). This permits you, as the operator, to focus on the procedure instead of managing a progressively unstable patient (Figure 1).

Though current MT technology offers an exciting glimpse into the future of PE intervention, significant knowledge gaps remain. Identification of procedural and meaningful clinical endpoints, and comparisons with CDT are critical in further validating the role of endovascular PE treatment.

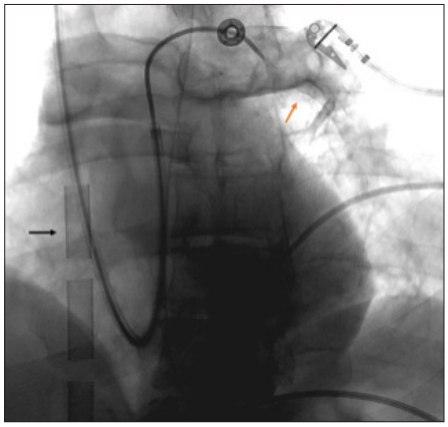


Figure 1
Spot fluoroscopic image from selective left pulmonary angiogram demonstrating occlusive left main pulmonary artery thrombus (orange arrow). Venous return cannula for ECMO (black arrow) is present.

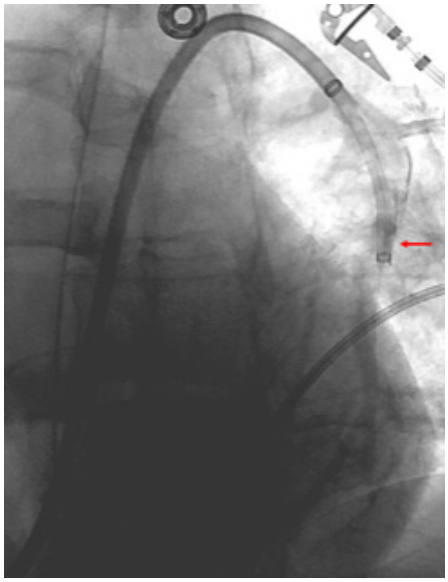


Figure 2

Spot fluoroscopic image from left lower lobar pulmonary thrombectomy with the Indigo CAT8 device (red arrow).

References

1. Sista AK, Horowitz JM, Tapson VF, et al. Indigo Aspiration System for Treatment of Pulmonary Embolism: Results of the EXTRACT-PE Trial. JACC Cardiovasc Interv. Jan 4 2021;doi:10.1016/j.jcin.2020.09.053

Old Dog; New Tricks – Multi-channel Thrombolysis Catheters: A New Frontier for PE Treatment

Ravi N. Srinivasa, MD, FSIR

Pulmonary embolism (PE) affects 1 in every 1000 people in the United States every year. Methods for treating pulmonary embolism using minimally invasive techniques including endovascular thrombectomy and thrombolysis have been supported by increasingly robust data showing improved outcomes in patients with submassive pulmonary embolism.

Ravi N. Srinivasa, MD, FSIR

The Thrombolex BASHIR™ endovascular catheter is a novel 3-dimensional thrombolysis catheter system that has become a valuable tool in the pulmonary embolism space. An easy-to-use pharmaco-mechanical device, this system has the benefit of allowing delivery of tissue plasminogen activator (tPA) not just within a single central core of clot, but throughout the clot; thereby breaking up clots through multiple different channels. The physics behind this leads to superior lysis of clot burden that has not been previously achievable with traditional lysis catheters. The foundation of the Thrombolex system is a 7 French catheter that has a spiral, expandable, 3-dimensional basket that can be opened and closed, containing 6 mini-infusion channels and 48 side-holes through which tPA can be delivered. Larger clots can thereby be readily disrupted and lysed much more easily than with traditional lysis catheters.

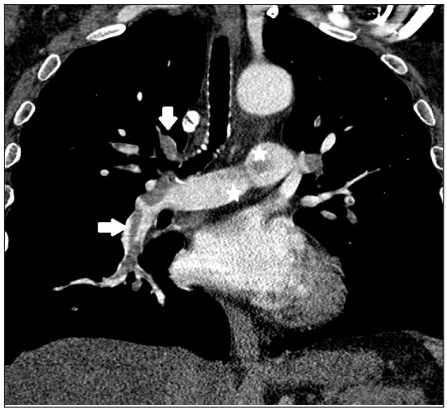


Figure 1 Computed tomography imaging showing bilateral sub-massive pulmonary embolism with both saddle component (stars) and peripheral embolic components (arrows).

Patients who are not candidates for thrombolysis, including patients with elevated risk of bleeding, recent surgical intervention, brain hemorrhage, and certain cancers, may not be good candidates for thrombolysis and therefore would be contraindicated for intervention using the Thrombolex system. In these settings, mechanical thrombectomy using a variety of available minimally invasive thrombectomy devices including the FlowTriever (INARI Medical) or Indigo (Penumbra) aspiration devices would be reasonable alternatives. Thrombectomy can be time consuming, however, and when a patient is a candidate for thrombolysis, the BASHIR™ system offers the ability to perform in essence a rapid pharmacomechanical thrombectomy by disrupting larger clots with opening and closing of the basket and allowing delivery of the thrombolytic agent throughout the clot. This results in significantly improved clot dissolution and quick improvement in hemodynamics and clinical outcomes. Often, patients who have a submassive central pulmonary embolism may have additional pre-existing peripheral clot burden (Figure 1) or are at risk of clot fragmentation with distal migration during thrombectomy. Thrombolysis using the BASHIR™ system has the added benefit of allowing tPA to travel into more peripheral branches of the pulmonary arteries (Figure 2), which are not as easily addressed with endovascular thrombectomy devices. This has a potential long-term benefit of preventing chronic thromboembolic pulmonary hypertension, or CTEPH, which may occur months to years after a pulmonary embolism event. In our practice, we have found the Thrombolex system to be an extremely valuable addition to the toolbox for the treatment of patients with submassive PE, especially in patients with mixed central and peripheral clot burden.

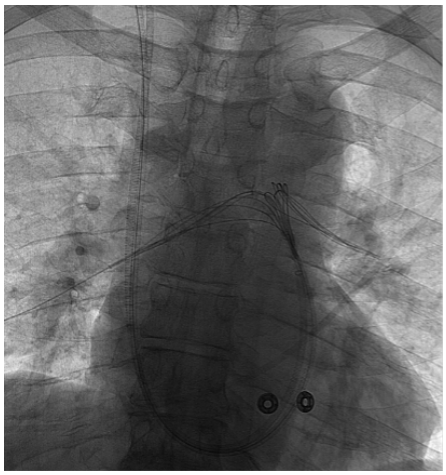
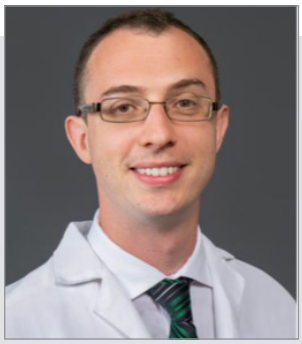


Figure 2 Transjugular BASHIR™ Thrombolex catheters are positioned into the bilateral pulmonary arteries with the baskets expanded prior to initiation of thrombolysis.

Novel Approach to Pharmaco-mechanical Catheter-directed Thrombolysis of Patients with Acute Pulmonary Embolism Using Bashir™ Endovascular Catheter

Vladimir Lakhter, MD



Vladimir Lakhter, MD

Although the majority of patients with acute pulmonary embolism (PE) can be treated with anticoagulation therapy alone, some patients may require further interventional or surgical therapies in addition to anticoagulation. My general approach to acute PE intervention is to offer pharmaco-mechanical catheter-directed thrombolysis (PMCDT) to all high- and intermediate-risk PE patients who do not have an absolute contraindication to thrombolytics. I have found the Bashir™ Endovascular Catheter (BEC) with very low dose r-tPA (7mg per lung) over 5 hours to be a very effective approach to performing PMCDT as it achieves the intended clinical and hemodynamic endpoints very quickly and safely. The primary mode of action of this device is mechanical, i.e., when the infusion basket is expanded, it creates major fissures in the clot that allow blood flow to be restored immediately and endogenous fibrinolytics in the blood to permeate within the thrombus. In addition, when a thrombolytic is pulse- sprayed into the thrombus through 48 infusion holes in the infusion basket of the BEC (Figure 1), droplets of dilute r-tPA are trapped within the thrombus. The combination of these exogenous and endogenous fibrinolytics continues to dissolve the thrombus even after the device is removed from the body. I begin by injecting 2 pulse sprays of r-tPA (1mg in 10 ml normal saline) into each affected pulmonary artery. I then infuse 5mg of r-tPA over 5 hours at a rate of 1mg/hour (5mg in 500 ml normal saline). Therefore, for any patient in whom PMCDT can be performed safely, I offer PMCDT using the BEC.

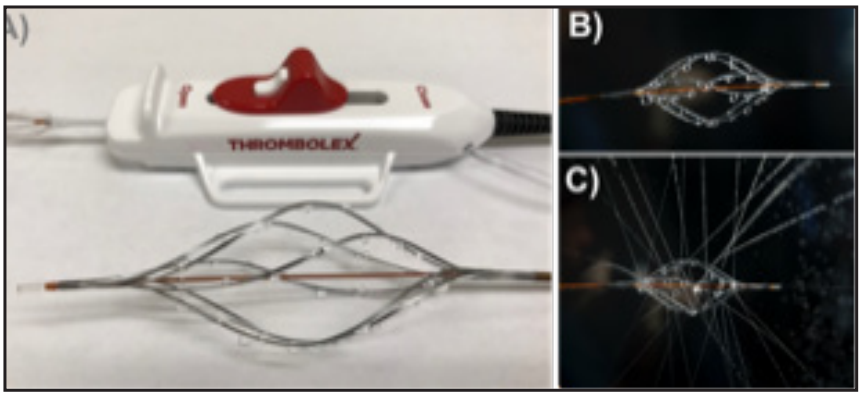


Figure 1 Panels A and B reveal the r-tPA droplets eluted from the BEC basket during infusion; Panel C demonstrates the jets created at the time of pulse-spray.

The general concern about the use of PMCDT in the treatment of patients with acute PE stems from clinical trials which used a dosage of 20 to 24 mg r-tPA through catheters that lack the above-mentioned mechanical action and do not have the ability to deposit the thrombolytic deep into the thrombus.

The BEC-PLUS device has been developed specifically for the treatment of both large and long thrombus, e.g., ilio-caval and iliofemoral deep vein thromboses, by virtue of the addition of more infusion holes up the shaft extending for 10-40cm proximal to the infusion basket. These devices are designed specifically to enable restoration of blood flow in venous thrombus by allowing the physician to determine what agent (thrombolytic or heparin), at what dosage, to infuse through 2 separate infusion pathways.

For those patients who have an absolute contraindication to thrombolytics, I do not offer treatment with the BEC. Since the most significant concern related to PMCDT is the potential for life-threatening bleeding, patient selection is of the utmost importance. Absolute contraindications to thrombolysis include a history of intracranial hemorrhage, major surgery < 14 days, or any other condition that puts the patient at major risk of bleeding. Additionally, I may not offer PMCDT to patients for whom there is a concern that the PE may be subacute (either by history of symptoms >3 weeks or subacute clot appearance on CT angiography). For these patients, surgical or percutaneous embolectomy may be preferred.

ClotTriever®: The Quickest Tool When You Have Inflow

Edgar Guzman, MD

Device choice for the treatment of iliofemoral DVT is heavily influenced by clinical context and extension of clot into adjacent branches. A successful outcome is not only determined by a thrombus-free iliofemoral segment of adequate caliber, but by brisk inflow from the femoral/popliteal segment or from the deep femoral vein; ideally both.

Edgar Guzman, MD

The ClotTriever device offers the ability to remove a large amount of thrombotic material from the iliofemoral segment, and even the inferior vena cava, in a relatively short period of time. In my experience, 4 to 6 passes of the device tend to be enough. By design, it has a low risk of embolization and generates modest blood loss. The device can navigate tortuous anatomy and areas compromised by organized thrombus and even chronic post-thrombotic changes. The specialized sheath prevents displacement of thrombotic material into more distal veins very effectively, while allowing passage of additional devices such as balloons and stents.

In spite of its virtues, I believe the use of the ClotTriever system is largely defined by its limitations rather than its strengths:

- It cannot restore flow from branches such as the internal iliac vein or deep femoral vein. In fact, use of the device may displace thrombus into these branches.
- It cannot restore flow to the popliteal vein distal to the point of access.
- It cannot clear thrombus across IVC filters.
- It may become entangled with previously implanted stents, particularly across the IVC bifurcation.

When these factors are present, I tend to use either catheter-directed thrombolysis or aspiration thrombectomy, sometimes in combination. However, when there is enough patent length of popliteal vein to deploy the specialized sheath and there are no prior venous implants, the ClotTriever device is an excellent choice, as illustrated by this case.

ClotTriever® Case Study

A 19-year-old woman presented to the emergency department after a motor vehicle collision that resulted in a burst fracture of L5. She underwent posterior fusion of L3 to S1 and anterior L5 vertebral corpectomy with L4-S1 fusion. The second procedure was carried out through a retroperitoneal exposure. At the time her venous structures were confirmed to be free of thrombus and compression. The patient had a satisfactory recovery from this procedure, but returned to the emergency department 2 months later with a diagnosis of acute proximal DVT of the left lower extremity.

Given the extent of thrombosis and potential for severe post-thrombotic syndrome, I decided to intervene. The popliteal vein was free of thrombus, so I used this as the access point. Venography revealed patency of the popliteal and femoral vein as well as the deep femoral vein with occlusion of the common femoral vein and iliac segment without IVC involvement. Given that inflow was preserved and no contraindications were present, I decided to use a ClotTriever device.

Several passes were performed. Resistance was noted upon crossing the proximal common iliac vein and area of vertebral injury. Large amount of thrombus was evacuated without any distal embolization. Intravascular ultrasound showed complete removal of thrombus across the treated segment with severe compression of the common iliac vein in its proximal portion. This was a change since the time of her surgery. It was successfully treated with stenting.

The patient did well after her procedure. Her lower extremity swelling and discomfort resolved promptly. Her reconstruction remained patent at the time of her most recent follow-up.

New AVF-BSCI Translational Research Grant Announced

The AVF Foundation is proud to make available a new venous research grant opportunity. The 2022 AVF – Boston Scientific Translational Research Grant will award $85k over a period of 2 years for an original translational project in venous disease with a focus on:

- Venous obstruction – appropriate patients, appropriate care
- Venous thrombus management – understanding morphology
- Superficial venous insufficiency

In announcing the award, AVF's Research Councilor and Board of Directors member Faisal Aziz, MD, stated, "The American Venous Forum is committed to promoting the research careers of young investigators who are interested in understanding the pathophysiology of venous disease. For the past 25 years, the AVF has provided resources for extramural funding for venous researchers and now is adding a brand new resource for funding for translational venous research with the help of our industry partners. We hope that it will be a great resource for physicians in the first ten years of their practice and will help build their research careers."

The AVF Foundation is pleased to partner with a strong supporter of research in venous disease. According to Michael R. Jaff, DO, Chief Medical Officer of Boston Scientific Corporation, "Boston Scientific is dedicated to advancing science for the treatment of venous diseases. We recognize the American Venous Forum's dedication to all aspects of venous disease diagnosis and treatment as well as their commitment to advancing the research careers of their young members. We are proud to support an annual grant for translational venous research in partnership with the AVF. The initiative aims to better understand venous disease etiology, pathophysiology, and treatment so that physicians may translate that into clinical practice. Ultimately this research will support physicians to deliver the optimal treatment options for the right patients at the best time."

This opportunity is open to residents and fellows in a training program located in the United States and to physicians who have completed their training within the past 10 years and are currently based in the United States who have not previously received this award. Full details on eligibility, the application process, and funding can be found on the AVF website

The AVF and AVF Foundation are committed to providing a culturally diverse educational environment and equal opportunities for all members. Applications from veterans, individuals with disabilities, women, minorities, and members of other underrepresented groups are strongly encouraged to apply.

AMERICAN VENOUS FORUM FOUNDATION
Healthy Veins for Healthy Life

Boston Scientific
Advancing science for life™

AMERICAN VENOUS FORUM ®

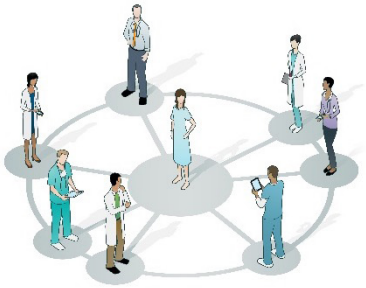
FOUNDATION UPDATE

2022 AVF - JOBST CLINICAL RESEARCH GRANT

Submit Your Application for the 2022 AVF-JOBST Clinical Research Grant

The AVF Foundation is now accepting submissions for the 2022 AVF-JOBST Clinical Research Grant which will provide an $85,000 grant over two years for original, clinical research in venous diseases, lymphatic diseases, or lipedema with an emphasis on:

- Prevention of disease and its progression
- Diagnosis of disease
- The science of management of the above conditions, especially with compression therapy



THIS OPPORTUNITY IS OPEN TO:

- Residents and fellows in a training program located in the United States
- Physicians who have completed their training within the past ten (10) years, have not previously received this award and are currently based in the United States
- Either the applicant or their mentor must be an AVF Member at the time of submission. The awardee is expected to join the AVF and maintain their membership for the duration of the grant period.

Full details on eligibility, the application process and funding can be found on the AVF website. Application deadline: Friday, October 8th, 2021 at 5:00 PM CST.

PLEASE CLICK HERE TO LEARN MORE ABOUT THE RESEARCH GRANT

2022 AVF-JUZO TRAVELING FELLOWSHIP

This Fellowship will award $12,000 in funded travel to the AVF Annual Meeting in February 2022. The selected candidate will have 2 years to complete their Fellowship and will be required to present a summary of their experiences at a future AVF Annual Meeting. Any AVF member who has completed their training and is within the first 10 years of practice is eligible to apply.

APPLY BY DECEMBER 10, 2021 FOR THIS PRESTIGIOUS OPPORTUNITY

VENOUS2022 PHYSICIAN-IN-TRAINING SCHOLARSHIPS

Ten US scholarships and five International scholarships will be awarded for VENOUS2022 to cover AVF Annual Meeting registration fees and 2 nights' lodging at the Omni Orlando.

APPLY BY SEPTEMBER 30, 2021 FOR THIS NEW SCHOLARSHIP

VENOUS 2022
AMERICAN VENOUS FORUM

FEBRUARY 23 - 26, 2022
OMNI ORLANDO CHAMPIONSGATE, FLORIDA

Science Sessions - Scientific presentations and discussions	Physician-in-training Sessions
Featured Sessions	Social Events, Breaks, Non-CME Sessions
Abstract Sessions - Original research abstract presentations with Q&A	

WEDNESDAY, FEBRUARY 23, 2022

8:00 - 13:00	Golf & Tennis
14:00 - 15:30	Science Session 1
15:30 - 16:00	**Break**
16:00 - 17:30	Science Session 2

THURSDAY, FEBRUARY 24, 2022

8:00 - 9:00	Science Session 3
9:00 - 10:00	AVF Core Values Session - Exploring and addressing diversity and disparities in venous disease
10:00 - 10:30	**Break**
10:30 - 12:00	Abstract Session 1
12:00 - 13:00	**Lunch Symposium**
13:00 - 14:30	Abstract Session 2
14:30-17:00	Physician-in-training Session A - Superficial, deep obstructive, compression, post-thrombotic, deep reflux, hands-on with industry
14:30 - 15:15	EVF/AVF Session - Joint presentations with the European Venous Forum
15:15 - 15:45	**Break**
15:45 - 17:30	Villavicencio International Symposium - Featured session hosted by Dr. Glenn Jacobowitz and Dr. Jorge Ulloa
17:30 - 19:00	Poster Session & Opening Reception - Explore scientific posters, interact with exhibitors, network with colleagues in exhibit hall

FRIDAY, FEBRUARY 25, 2022

8:00 - 9:00	Science Session 4
9:00 - 10:00	Sumner Session - Featured session hosted by Dr. William Marston
10:00 - 10:30	**Break**
10:30 - 11:30	Abstract Session 3
11:30 - 12:30	President's Session - Featured speakers & Presidential address
12:30 - 13:30	**Lunch Symposium**
13:30 - 15:00	Abstract Session 4
14:30 - 16:15	Physician-in-training Session B - DVT, PE, SVT, hands-on with industry
15:00 - 15:45	AVLS/AVF Session - Joint presentations with the American Vein & Lymphatic Society
15:45 - 16:15	**Break**
16:15 - 17:45	Abstract Session 5
17:45 - 18:30	SVS/AVF Session: Venous Potpourri of Clinical Impact
19:00	Gala - Food, fun, and entertainment with your friends and colleagues *(additional ticket required)*

Science Sessions - Scientific presentations and discussions	Physician-in-training Sessions
Featured Sessions	Social Events, Breaks, Non-CME Sessions
Abstract Sessions - Original research abstract presentations with Q&A	

SATURDAY, FEBRUARY 26, 2022

7:30 - 8:30	AVF Annual Business Meeting Breakfast - For AVF Members
8:30 - 10:30	Physician-in-training Session C - Sclerotherapy, lymphedema, starting avein practice, hands-on with industry
8:30 - 10:00	Science Session 5
10:00 - 10:30	**Break**
10:30 - 11:30	Abstract Session 6
11:30 - 12:00	Strandness Lecture - Keynote Speaker Joseph Raffetto, MD
12:00 - 13:00	**Lunch Symposium**
13:00 - 13:45	SVM/AVF Session - Postthrombotic Syndrome
13:45 - 14:45	Abstract Session 7
14:45 - 16:00	Aesthetic Vein Session - Spider veins with allied health professionals

ANNUAL MEETING AGENDA

Click to REGISTER