

## PAD Teams: It's Better Together

Gregg Piazza, M...: Welcome to the peripheral artery disease podcast, titled PAD [Teams 00:00:05]. It's better together. This is the second podcast, in a series of podcasts from the American Heart Association PAD initiative. This is part of the PAD national action plan. My name's Dr. Gregory Piazza. I'm one of the vascular medicine cardiologists at Brigham And Women's Hospital. And I'm thrilled to have all of you join us for this podcast.

[00:00:30] We've had a great first podcast. And are looking forward to moving along and covering some additional areas, in our quest to improve the care of patients with peripheral artery disease. I'm very excited to have my colleague Dr. Srini Tummala, who is going to help provide expert opinions and advice to us, as we talk with one of our patient representatives. Dr. Tummala comes to us from the University of Miami Health System, where he's the director of vascular disease.

[00:01:00] He's actually in the department of interventional radiology. He's a national expert in vascular disease, and amputation prevention. He's got 20 years of experience. And has performed thousands of minimally invasive vascular treatments, during his career. He has many numerous scientific publications and book chapters to his name. And is a tremendous resource to all of us. Especially in training others all over the U. S, on the latest minimally invasive vascular treatments. Dr. Tummala, say hello to our group.

Srini Tummala, ...: Hi Gregg. Hi, everyone. Glad to be here. Very excited to talk about something that I think, is very important.

Gregg Piazza, M...: Awesome. And we're very happy to have a patient representative, Frank Dent. Who's going to be sharing his experience with the diagnosis of peripheral artery disease.

[00:02:00] Frank Dent: Okay. I'm Frank Dent. I'm a 71 year old resident of North Carolina. And I'm glad to be here today.

Gregg Piazza, M...: All right. Well what we'd like to do is have a very good, very in depth discussion of some of the key issues in peripheral artery disease. I would start by saying, the burden of peripheral artery disease is something that I think we all feel in cardiovascular medicine. And in many of our interventional disciplines. Certainly Dr. Tummala, you experience it a lot. And the demand for your services has to be increasing. We know that in just a general medical population, the incidence of peripheral artery disease increases with age. And our population's aging. So I can imagine we're seeing more and more patients. Dr. Tummala, does that match what you see in your practice?

[00:02:30] Srini Tummala, ...: Yeah. I think so, Gregg. I think with the explosion of diabetes and secondarily, chronic kidney disease, we're really seeing an explosion. Not only of peripheral arterial disease worldwide, but of really the most severe form of PAD, known as critical limb ischemia. Which is really, end stage peripheral arterial disease.

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And patients to my practice, compared to about 20 years ago, are really showing up much sicker. With more comorbidities and risk factors that are ultimately, resulting in more severe symptoms and presentations.

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Gregg Piazza, M...: Yeah. I think that, that's an excellent point. I mean, you would expect with all of the increased publicity... And we still have a tremendous amount to do, to increase awareness of PAD. Not just among clinicians, but in the lay public as well. But even with the increase in awareness that we've seen over the last 10 years, it's amazing that patients are still coming in, in the end stages. With either rest pain, or ulcerations. Or tissue loss.

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Srini Tummala, ...: Yeah. No, I agree a hundred percent. And I think even though we have better data today, in terms of the medical management of patients with peripheral arterial disease. I think at the grassroots level, the primary physician level, we still have a lot of education that needs to be done, in terms of just basic medical management. Risk factor reduction in terms of not only hypertension, but hyperlipidemia. Diabetes control, et cetera. And I think, those are going to be key things in the future.

Gregg Piazza, M...:

[00:04:30]

Yeah. And I think that even increasing awareness about the diagnosis and how to screen for it, is important. Because if they're showing up to you, and you're the first provider that's recognizing that they have peripheral artery disease, and they're coming in with critical limb ischemia, we've got quite a bit of problems. And the burden is going to be very rapidly overwhelming to our healthcare system.

Srini Tummala, ...:

Yeah. No, I agree a hundred percent.

Gregg Piazza, M...:

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When you... So obviously when a patient gets to you, Dr. Tummala, you already have the diagnosis there. But you mentioned that there's a lot of key elements to taking care of patients with Peripheral artery disease. Not just making the diagnosis, but all of the medical management. In your practice, do you have a team of clinicians that you work with, to help provide a more holistic approach to the treatment of PAD? And what's that made out of?

Srini Tummala, ...:

[00:05:30]

Yeah. No, I think you definitely need a lot of providers involved in this peripheral arterial disease. Not only diagnosis, but management. I mean for us, we have... Obviously, I'm seeing patients once they're symptomatic. And typically, we make sure that they have good risk factor modification. They're on the proper medications, to take care of a lot of these things.

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And then secondarily, we not only have primary care physicians, we have podiatrists to help with wound care. We have nephrologists to help... Because many of these patients as you know well, have some level of kidney dysfunction. We also have an endocrinologist. Because, diabetes management is very important. Especially for improving outcomes. And making sure that whatever therapy we provide, has a good result.

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- [00:06:30] And then, we also have infectious disease physicians. Because although many of these patients present with wounds and infections, we really need to make sure that we're treating them optimally, in terms of their antibiotic coverage and so forth. So that really makes up the bulk of our team. And then of course, we have people like you and me, who are vascular physicians. Who not only help with diagnosis and management, but also in terms of therapy.
- Gregg Piazza, M...: Yeah.
- Srini Tummala, ...: Whether that's endovascular, meaning with minimally invasive techniques. Or whether that's with some type of surgical therapy.
- Gregg Piazza, M...: And Dr. Tummala, how do you work out with the surgeons, which cases... Do you see the patients together, and then figure out which approach, whether an endovascular or minimally evasive approach would be best? Or whether this is someone who needs surgical revascularization? Or is it done extemporaneously?
- [00:07:00]
- Srini Tummala, ...: Yeah. I think it's... The way we do it is that, we try to... There's three specialties that obviously deal with vascular disease today. We have interventional cardiologists, we have interventional radiologists, we have vascular surgeons. And what I like to tell referring docs, it doesn't matter who you refer your physician to. It matters more the expertise of that physician that's involved in vascular disease.
- [00:07:30] It's similar to somebody that has angina, or chest pain. They're not going to go to the cardiothoracic surgeon first. They ultimately, go to the endovascular specialist. Which is the cardiologist. And the cardiologist functions as a gatekeeper in the sense of, they manage everything from A to Z. And then when it comes down to the hour where they're like, "Well, there's nothing else I can do. This really requires some type of surgical intervention." I think what's happening today, is very similar in the peripheral arterial disease space. Patients more often than not, are going to the endovascular specialist. Whether that's a cardiologist, or an intervention radiologist in my case. And we are evaluating these patients, and seeing if there is anything we can do from a non-surgical standpoint first. And if so, then that's what we do. Based on best data, best evidence that's available.
- [00:08:00]
- [00:08:30] If it looks like this patient would be better served with some type of surgical therapy or intervention, then we refer them to a vascular surgeon in that case, that can help us out in these situations. That's our model. Obviously there's other models out there, where they have a collaborative multidisciplinary program. Where patients are evaluated by a non-surgeon and a surgeon. And therapy is determined that way. So really, it really depends on where you are.
- Gregg Piazza, M...: Yeah. I would say it's very similar for us here, where you... If we can find a great minimally invasive option... A lot of our patients have such dense coronary disease, that we want to try to minimize their cardiovascular risk. So that's a point well taken.
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- [00:09:30] I do want to get Frank Dent, our patient representative, into the discussion. Frank, you were diagnosed with Peripheral artery disease, Dr. Tummala and I would like to know what your symptoms were like. What brought you to a provider who ultimately, diagnosed you with peripheral artery disease? Who was that provider? What kind of discipline did they come from? And who ended up making up your care team?
- Frank Dent: My PAD symptoms started 25 years ago. And I was pretty young, 47. So I suffered through them for a couple of years, before I even saw a doctor. Well actually, I waited till it was pretty debilitating. I could walk to the mailbox and back to my house. But I'd have to rest for five or 10 minutes, to recover from that short walk. It was both painful, and inconvenient in my life. So I went to a doctor whose specialty was pulmonology. I was a smoker. And I connected the PAD to my smoking. But the doctor also had a reputation for being a good [dietician 00:10:16].
- [00:10:30] He ran some tests, and told me that it was peripheral artery disease. I'm not sure he even called it that. He said I had clogged arteries in my legs, and it would require lifestyle changes for treatment. He explained, I had to quit smoking. He recommended strongly, a Mediterranean diet. And maybe last but not least, was a regular daily exercise program. There was no team effort here with other doctors, for my peripheral artery disease. He did send me to a nephrologist, a kidney doctor, for my heart condition. Which consisted mostly, of blood pressure issues then. And concern over my blood pressure being caused by blockage to the kidney.
- [00:11:00] So anyway, his advice as far as my peripheral artery disease, turned out very well. Because, I really didn't have any more trouble. I stabilized it. And I was able to resume normal activities, and walk. And most things. Not sports necessarily, but walking at length and so forth, for the next 20 years.
- [00:11:30] Then I had a second episode of... What I call, a second episode of PAD. And that's when I started... Get what I... Thought I had a bunion in my right foot. Well it turned out that my primary physician who referred me to a podiatrist, looked at my foot and he said, " That is not a bunion. That is a cardiological problem." And by then, I had a cardiologist. So I went to the cardiologist. And the cardiologist warned me that if I didn't get that treated very soon, I would lose my foot. So I think that was the beginning of having a team a concept, to work on my PAD.
- [00:12:00] Because, I was referred to thoracic surgery by a bilateral femoral transplant, with two artificial arteries in each side of my groin. And he also did some mild transplants in my lower leg too.
- [00:12:30] That's a excellent explanation Frank, of what a patient goes through when they're diagnosed with peripheral artery disease. Thinking about the next steps, what was your care plan? How did they determine it? And what were the key elements that they felt, would be critical for managing your peripheral artery disease? And as you mentioned, your overall cardiovascular risk.
- Gregg Piazza, M...: [00:13:00]
- Frank Dent: The plan was, continue my exercise program. Continue lifestyle changes. And

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- [00:13:30] follow up roughly every six months with new scans, to make sure that circulation remained good in both legs. And I've been doing that for the last four years.
- Gregg Piazza, M...: Now hearing all of this, Dr. Tummala, all of Frank's journey through the diagnosis and treatment of peripheral artery disease, what do you think are the key fundamentals for a team based plan for peripheral artery disease?
- [00:14:00] Certainly, Frank received many of those. But what is your... When you envision what are the must have components of a treatment plan, what are those pieces?
- Srini Tummala, ...: I think first and foremost, we have to see, is this patient presenting with intermittent claudication? Or are they presenting with more severe disease, in the CLI category? Meaning they have pain at rest, pain when they're sleeping. Pain during the day, when their leg is in a dependent position. Or if they have any level of tissue loss. Whether that's a small [alther 00:14:25], or something more severe like gangrene.
- [00:14:30] And I think ultimately what we're trying to do, is prevent MACE. Or Major Adverse Cardiovascular Events. That comes with risk factor modification, as you know well as a cardiologist.
- [00:15:00] And then the second thing would be, preventing MALE. Or Major Adverse Limb events. And so in that case, what we're trying to do is save the limb. And we're trying to prevent cardiovascular death and stroke. And we're trying to preserve or improve that patient's quality of life. And so, that's the way I look at patients when I see them. And ultimately, our team includes a vascular lab which can do supervised exercise programs. All the way to our wound care center which can provide wound care even after we do something, in terms of revascularization.
- Gregg Piazza, M...: Yeah. I think that's a very good set of points. We want to make sure that all of the work that you go through to revascularize these patients, is not lost on poor medical management. And so I think... Like you said, partnering with the other medical specialists, to make sure that all the lifestyle modifications are made. That patients quit smoking. Patients control their blood pressure and their lipids. And they do all of the other things, to help prevent things like heart attack and stroke.
- [00:16:00] Which also would be very sad, after revascularizing a patient successfully, to have them succumb to some other cardiovascular event. It seems like all of these are very fundamental interventions for these patients.
- Srini Tummala, ...: Yeah. No. I agree a hundred percent, Gregg.
- Gregg Piazza, M...: Excellent. How do you follow up patients with peripheral artery disease? There's this idea out there that once a patient's revascularized, they go back to the care of their primary providers. And they come back to see you, if there's a problem. But what I've started seeing more and more is interventional radiologists, interventional cardiologists and vascular surgeons actually following their patients. Because there's a greater comfort with peripheral artery disease, than might be had in the primary care world. And these patients seem to benefit with vascular

specialists being along for their journey, not just stepping in here and there.

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Srini Tummala, ...: Yeah. No. I agree with you, Gregg. In the past it used to be, you would treat these patients. And then, they would go back to their primary care physician. And then really, the follow up was left to that referring physician. Who may or may not have experience in peripheral arterial disease.

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Now, we are much more... Our follow up is much more robust in terms of, we see these patients typically... If they presented with intermittent claudication, in other words, pain with walking a certain distance [inaudible 00:17:31] that's relieved by rest. Those patients are typically seen every three to six months. And we'll do basically, an in-office ABI. If they have diabetes or chronic kidney disease, we'll do a toe brachial index at the same time. And we'll follow them that way, to see how they're doing.

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We make sure obviously, their risk factors are controlled. And medical management is optimized. In patients that have critical limb ischemia, in other words, rest pain, tissue loss. Ulcerations and gangrene green and wounds, in those patients, we see them really at two weeks. Then we see them at one month. Then every three months after that, for the first year. And if they're doing okay, then every six months. And typically our imaging for them is, we're obviously trying to pick up failure of a revascularization before it happens. So the imaging is a little bit different.

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We do duplex or ultrasound of the arteries, to look at the blood vessels. To look at any stents that may have been placed. We obviously do an ankle brachial index. And we also add a toe brachial index in these patients. Since many of them have diabetes, et cetera.

And so although there's not good data out there, in terms of a consensus of how best to follow these patients, I think we try to be very careful and very diligent about following them closely before anything fails, in terms of a revascularization you've done.

Gregg Piazza, M...:  
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Yeah. I mean that... I think that's part of... One of the big keys is, trying to make sure you preserve all the work that you put into to revascularize. What sort of things do you look for in imaging, that would make you want to intervene to preserve a revascularization?

Srini Tummala, ...:

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So obviously, I'm looking at the TBI. Immediately after revascularization, usually within a week, we obtain some level of noninvasive testing. To give us a new baseline of where the patient is, in terms of their blood flow, blood tissue perfusion. And so forth. And so we follow those same tests at regular intervals, after an intervention or a therapy, to see if there's been any change as we start seeing things that are failing. In other words, an ultrasound that's showing that a narrowing is developing within a stent. The blood flow is being reduced over time. Patient is becoming symptomatic again. Presenting with symptoms that were

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similar, but maybe they're milder because it's early in the failure process.

[00:20:00] And those are really the things... Or in the case of a wound is, the wound healing. With wound care and other advanced therapies like hyperbaric oxygen therapy and so forth. So we're really looking for any signs or symptoms that the patient may have, or the non-invasive testing may show, that there's some level of narrowing or a re-blockage that's occurring in a patient that's been treated.

Gregg Piazza, M...: [00:20:30] That's excellent. It sounds like being proactive is the way to be. Especially for some of these more elaborate reconstructions that are done minimally invasive. I know the surgeons feel the same way, for their complicated bypasses.

Getting back to Frank. Frank, is there a type of provider that you wish you had seen earlier? Or one that you didn't see, that you thought would've been instrumental? Maybe even someone to be the point person for your PAD management?

[00:21:00] Frank Dent: Well, that's how I break down my two PAD treatments. The first one, and then second one 20 years later. If I had to do it over again or recommend to somebody, if you have PAD, doctors told me that you... If you've got it in your legs, you've got clogged arteries all over your body in all likelihood. Or you should assume that you do.

[00:21:30] So rather than have a primary care physician be your team leader, I think you need to see a cardiologist early on, to follow up and be your leader. Or help set the plan for your treatment.

Gregg Piazza, M...: [00:22:00] Excellent. Well I think that the overall message that I get from Dr. Tummala and from our patient representative is that, it really does take a team approach to provide the optimal care for peripheral artery disease. There's so many areas of expertise that goes into the management of these patients. From knowing how to manage wounds, to podiatry. To interventions for the medical therapy. Even making sure patients' other issues like chronic kidney disease, are controlled. And then making sure that these patients are followed, to preserve all the work that goes into the revascularization. Again, it's not just one provider. It's multiple providers providing attentive care to the patient. Last thoughts, Dr. Tummala?

[00:22:30] Srinu Tummala, ...: Yeah. No I agree, Gregg. I think the most important thing for patients that are out there, is to think of... Don't dismiss your leg pain as something that's not important. Don't dismiss the tiny ulcer or wound on the toe or the foot, as something that's not a big deal. I think, get those things evaluated as soon as possible, by somebody that has experience and expertise in these things. To make sure that you're well taken care of, and don't have a problem in the future.

[00:23:00] Gregg Piazza, M...: Excellent. Very wise words I think, for all of us taking care of patients. And for patients themselves. So I want to thank all of you for participating in this podcast

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with me today. We've had a lot of important points about peripheral artery disease. I want to thank Dr. Tummala for amazing expertise. And a really wonderfully, unique perspective on how our interventional radiology colleagues are an important part. So Dr. Tummala, thanks so much.

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Srini Tummala, ...: Thank you, Gregg. I'm honored to be here. I appreciate it. Thank you so much.

Gregg Piazza, M...: Awesome. And then a special thanks to our patient representative, Frank Dent, who gave a tremendous story about being diagnosed with peripheral artery disease. Just to remind you, this podcast is part of the American Heart Association PAD initiative. It's sponsored by Janssen Scientific Affairs.

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And really in closing, I'd like to remind everybody listening, to encourage your patients to play an active role in their medical care, by advocating for themselves and their family members. Like Dr. Tummala said, don't sit by and watch a small ulcer get worse, and lead to loss of a toe or worse. Advocate for yourself, and find the right specialist to take care of you.

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To get additional information, please visit the AHA's PAD website for more. And thank you everybody for your participation. And special thanks to our colleagues at the American heart Association, that helped us to put together this wonderful podcast.