Melanie Cole: Welcome to the podcast series from the Specialists at Penn Medicine, I'm Melanie Cole. And I invite you to listen in, as we discuss the field of cardio oncology, treatments, collaboration and referrals at Penn Medicine. Joining me is Dr. Michael Fradley. He's the Medical Director of the Cardio Oncology Center of Excellence at Penn Medicine. Dr. Fradley, it's a pleasure to have you with us. This is such an interesting topic to me, tell us how developments in cancer treatments and care have dramatically improved survival for cancer patients, allowing them to live longer fuller lives. However, just as these treatments can damage and kill cancer cells, they can damage other parts of the body, including the heart. You work at the juncture of cardiovascular disease and cancer. How do the two interact physiologically and how does treating one condition affect the other?

Dr. Fradley: That's a really fantastic question. I think it really gets to the core of our specialty of cardio oncology. There has really been a shift in how we approach the treatment of cancer. Moving away from traditional cytotoxic chemotherapies to more targeted approaches that really hone in on the specifics of a patient's tumor, harnessing the immune system to combat the cancer. And as a result of these novel therapies, patients with cancer are living longer and in many cases surviving their diseases, and we're starting to recognize that cardiovascular issues are an increasingly significant problem for this population. And these cardiovascular problems can affect a patient's survival and quality of life, independent of the oncologic prognosis. So it's really incumbent upon us as cardio oncologists to come up with ways in which we can try to mitigate risk and also better treat these cardiovascular issues, so that these cancer patients can continue to live long, full lives throughout their cancer journey and into survivorship.

Host: Really a great point. So is there a cardiovascular condition that's a particular concern in the wake of cancer and vice versa? And while you're answering that, when does it become apparent that there are cardiovascular repercussions from cancer treatment?

Dr. Fradley: You had alluded to in the initial question that there's sort of interactions between cancer and cardiovascular disease. And we know that there are shared risk factors that exist for both conditions, which is likely one of the reasons why we see these elevated rates of cardiovascular diseases in cancer patients and survivors. Now historically, and really where the field developed from was heart failure. And that was because of a very common treatment called Adriamycin or doxorubicin. However, as these treatments have evolved and changed and newer therapies are coming down the pipeline, we actually now recognize that all forms of cardiovascular disease can be increased in cancer patients, as a result of the therapies themselves, or perhaps just having had the exposure to the malignancy. And so we see arrhythmias, we see vascular disease, coronary disease and strokes, hypertension, metabolic abnormalities, myocarditis, inflammation of the heart muscle. And so all of those things are possible and they really can occur at any point in a cancer patient's journey. It can occur in the midst of therapy, but this can also be something that we identify in cancer survivors many years after they have completed their treatments.

Host: How do you identify the needs of these cancer survivors and what are some of the latent long-term effects?

Dr. Fradley: From a symptom standpoint, many patients can develop issues with shortness of breath. They can develop chest pains, they can develop palpitations. And this is often a result of what we call autonomic dysfunction, which is damage to the nerves that can control the heart rate and blood pressure. This may be related to radiation therapy or some of the different chemotherapies. Patients are at risk for long-term damage to their vascular system, especially if they've received radiation therapy. And one of our jobs is to try and identify those individuals at risk for developing these problems and really focus on risk factor modification, to try and minimize the likelihood of any of these long-term issues.

And we think that everything is really additive and we're not going to be able to change the exposure to the cancer therapy and the patient needed that in order to best manage and treat their cancer. But we want to try and make sure none of those other cardiovascular risks are present. So we focus on blood pressure control, cholesterol control, counseling on diet, on exercise, and also informing patients about what they need to be looking out for both during and after their cancer treatments. So that the earlier they bring things to our attention, perhaps the easier it is for us to manage them before really long-term significant problems develop.

Host: Dr. Fradley for other providers. What are some key elements, if they're considering a cardio oncology program, when you're talking about prevention of new cancer surveillance for reoccurrence, and coordination of care between patients and all the different healthcare providers. Do you have some important things you'd like to note about cardio oncology?

Dr. Fradley: Absolutely. And I think that's a really important point because people that are interested in cardio oncology, this is a developing specialty. And what's exciting about it is that people can really start at really the ground level and be a part of something that is really in its infancy and participate in the development of an entirely new specialty.

What I usually give people as advice is number one, you really need to learn the language as a cardiologist from a management standpoint, It's incumbent upon us as cardiologists to really learn about the oncology issues. We need to understand cancer at a more subtle level, and we need to be able to communicate appropriately with our oncology colleagues. You need to learn the acronyms. You need to be able to talk the talk, because if you don't, you're going to lose credibility with your oncology colleagues.

The second thing I really stress to individuals is that you have to recognize that in these situations, the oncologists are captain of the ship. You can be first mate, you can be the supporting actor, so to speak, but you really have to allow the oncologists to do their job.

And you're there to help support the oncologist to provide the best care possible to the patient. You're not there to dictate care. You're there to support the care that they want to give, as best as you possibly can. I think that, especially in the times of COVID, patience and being persistent is important if you're interested in developing cardio oncology programs. It's going to take a little bit more time to get things off the ground, but it's going to be a lot of talking, a lot of relationship building and a little bit more patience than you might normally need, but it's incredibly rewarding. And it's a really fantastic specialty because it truly bridges the silos that often exist in medicine. And it's an opportunity in which a cardiologist and oncologist are going to work together in a truly collaborative fashion.

Host: Dr. Fradley you were co-author on the recent International Cardio Oncology Society Statement on cardio oncology care in the era of COVID-19. You outlined a few key modifications in the approach to patients with cardiovascular risk factors and established cardiovascular disease; discuss the circumstances that brought this about and the suggested modifications.

Dr. Fradley: So certainly, in this current era of COVID-19, we've all had to learn how to evolve our practice, to provide high-quality care to our patients, but also doing it in a safe fashion as possible. In the cardio oncology arena, we often rely on in-person testing quite frequently. However, there has always been substantial debate in the community as to whether these tests occurring as frequently as they do are truly necessary. And because of our need to deliver a high quality and safe care in COVID, this statement was produced in order to give some guidance about what is truly necessary and how can we adapt our cardio oncology practice so that patients are still getting the care they need as safely as possible. So one of those areas would be potentially reducing the number of times

that an individual gets an echocardiogram for surveillance of certain cancer therapies. Or perhaps relying on wearable technology to monitor for EKG abnormalities rather than requiring them to come for an in person physical visit for a 12 lead EKG.

Host: In an earlier article, you and your co-authors posited an unmet need for standardized approach to deal with COVID-19-associated and other traditional cardiovascular issues during the pandemic. Has that standard of care been achieved, Dr. Fradley?

Dr. Fradley: I think that it is something that we continue to aspire towards. I wouldn't say that we have achieved it. I think that we are always working towards doing things better, but I think that over the course of these last five to six months, we have seen tremendous momentum in terms of providing novel ways of care to our patients while not compromising their safety or efficacy of what we're doing.

Host: Tell us about any current or emerging therapies, for the field of cardio oncology. Is this new burgeoning field, as you say, a game changer, do you feel? How do you see it affecting the oncology world? And wrap it up for us with anything you see on the horizon, what you'd like other providers to know, and when you feel it's important they refer to the specialists at Penn Medicine?

Dr. Fradley: So, I think that we are still, as I'd mentioned previously, in the early stages of developing this specialty. And what makes that exciting is there are so many opportunities for us to learn and ultimately improve the care that we provide cancer patients and survivors as it relates to their cardiovascular health. So there are a tremendous number of investigations that are currently underway that we're trying to identify better ways to mitigate risk as well as better ways to treat complications when they occur. And I think that these are coming out at a lightning speed. So we're constantly seeing evolution of this specialty. I think that it is important to refer patients as early as possible to a cardio oncology program. Oftentimes people wait until a complication occurs. And obviously that is an important time in which a patient should be seen, but it is not the only time they should be seen in patients that have risk factors at baseline in patients who will be receiving therapies that we know have potential risk. Those are individuals that we should be seeing upfront as early as possible, so that we can be involved in trying to reduce the likelihood of problems occurring.

And then of course, once patients have completed their therapies, even if they perceive their therapies many years ago, they should be referred to a cardio oncology program for long-term risk factor management and evaluation. You know, I think that cardio oncology really is about taking a proactive, preventative approach to the cardiovascular care of these patients. And having spoken to many of the patients, they really do appreciate having another person who's looking out for their cardiovascular health, because it's a really granular and tangible part of health. I think people understand their heart is important and they understand cancer is bad. And so they really want to make sure that those two areas of their health have the entire attention being paid to them. I would also say that with regards to referrals, again, don't be afraid to refer even if a patient is asymptomatic, but they're going to be receiving cardiotoxic therapies. Those are exactly the patients that we want to be seeing as early as possible.

Host: Thank you so much, Dr. Fradley, you really a great guest. That was such an interesting episode. Thank you again for joining us and sharing your expertise. That concludes this episode from the specialists at Penn Medicine, to refer your patient to a specialist at Penn Medicine, please visit our website at pennmedicine.org/refer, or you can call 877- 937-PENN for more information and to get connected with one of our providers. Please remember to subscribe, rate, and review this podcast and all the other Penn Medicine podcasts. I'm Melanie Cole.