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www.reachmd.com  
info@reachmd.com  
(866) 423-7849

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## Protecting Heart Health in Metastatic Breast Cancer

### Announcer:

You're listening to *On the Frontlines of Metastatic Breast Cancer* on ReachMD. Here's your host, Ryan Quigley.

### Ryan:

This is *On the Frontlines of Metastatic Breast Cancer* on ReachMD, and I'm Ryan Quigley. Today, I'm joined by Dr. Gregory Vidal to discuss the relationship between metastatic breast cancer and heart health. Dr. Vidal is a medical oncologist at West Cancer Center in Memphis, Tennessee, and an Associate Professor at the University of Tennessee Health Sciences Center.

Welcome to the program, Dr. Vidal. Thanks so much for doing this.

### Dr. Vidal:

Well, thank you. Thank you for the invite to talk about this.

### Ryan:

Well, let's jump right in, Dr. Vidal. Could you walk us through how the conversation around heart health in metastatic breast cancer has evolved over the last decade?

### Dr. Vidal:

The simplest answer is we now recognize more than ever that our drugs have cardiac toxicities. And therefore, we need to also pay attention to what's happening with patients—more than anything else, the patients who we think we can cure. We cure more patients now, even in a metastatic setting. Patients are living longer, and so therefore, our drugs that have cardiac effects would have a much broader impact on the patient's quality of life, if they're living for longer.

And also, the toxicities can increase with time. So, for example, for someone having been on an anthracycline-type chemotherapy, their risk of cardiac toxicity in two years is about two percent, with a one percent increase per year. And in 15 years, it can go up to 15 percent, based on the patient's risk.

So understanding that is very important when we talk about treating breast cancer—metastatic and curable—patients.

### Ryan Quigley:

So, with all that being said, what are some of the main ways that metastatic breast cancer itself and the therapies we use to treat it can impact cardiovascular health?

### Dr. Vidal:

It's mainly about the therapies that we select. So the main corporate anthracyclines, doxorubicin and epirubicin, we've known for a while—those are older drugs—that they have cardiotoxic effects. The anthracyclines does its cardiotoxic effects mainly by the formation of free radicals that can damage cardiac cells. We know it can also impact mitochondrial cells, and the mitochondria—if you remember your science—is what produces all of the ATP and the energy for those cells. So if you don't have that, those cells don't function and you can have cardiotoxic effects.

We also have trastuzumab, the HER2-targeted drug. HER2 has expression in cardiac cells too. And so those antibodies that target the breast cancer also go through cardiac cells, and they, too, have their impact on the squeeze and the musculature of the heart. And that's why we have to follow that over time.

Another therapy that we use mainly in the early setting, which is radiation, can also impact cardiac health, especially for patients with breast cancers on the left side, where the heart sits. It can have an impact on the coronary arteries, the valves, the pericardium, the cardiac muscles.

So there are many different things that we do to treat breast cancer that can have an impact. And we need to think about that when we're selecting therapies for metastatic patients.

**Ryan Quigley:**

Thank you for that. Now, from a monitoring standpoint. Which symptoms or baseline risk factors should raise concern for emerging cardiovascular complications in this population?

**Dr. Vidal:**

I should say that the risk of cardiovascular complications is also dependent on the patient's original cardiovascular risk, meaning patients already coming in with heart issues are more likely to have heart issues after treatment.

The first thing is to choose the right patient, and make sure you choose the right drug for the patient. And then sometimes, you have to optimize their cardiovascular health before you give them the drug. That also matters. We know for anthracycline, it's a dose-dependent damage. When we get above 250 milligrams per meter squared, we see an incremental increase in cardiovascular toxicity, when we increase by 50 going forward.

And then for monitoring, make sure that you do an echocardiogram before. And there are guidelines about how you monitor based on the drug. We know for HER2-positive disease, we do an echocardiogram before. We make sure that the heart health is already up to par, generally above a percent ejection fraction of 50 percent. And then you repeat one every three months.

Now, for anthracyclines, you do one before, and then we usually don't repeat one unless we're getting above the dose or the patients have symptoms. The symptoms that we get concerned about when you're on this drug are shortness of breath—what we call dyspnea on exertion. They now cannot walk as far as they used to be able to. You now have swelling in your extremities that you didn't before, or you are accumulating fluid in your lungs.

So all of those are signs and symptoms of cardiovascular compromise that we have to think and monitor for when we're seeing our patients.

**Ryan Quigley:**

For those just joining us, this is *On the Frontlines of Metastatic Breast Cancer* on ReachMD. I'm Ryan Quigley, and I'm speaking with Dr. Gregory Vidal about the cardiovascular implications of metastatic breast cancer.

Now, Dr. Vidal, we've discussed how therapies and shared risk factors can affect the cardiovascular system, so let's shift to what we can do to protect these patients. How can oncology teams take a more proactive approach to risk reduction?

**Dr. Vidal:**

One—and I sort of hinted to this earlier—is making sure you are aware of the patient's cardiovascular risk upfront, and then making sure that we select the right drug. Sometimes, if you have the choice of selecting a drug that's not as cardiotoxic, then maybe use that drug.

But again, in the metastatic setting, it's often a little bit difficult, because for those patients, we think of them as being incurable. And their overall survival is often dependent on their burden of disease. They had the histology of the breast cancer. So you want to, oftentimes, select the best drug for the patient at this time, because if you don't, they may not be with you in two or three years. And so we're selecting a drug that may have cardiotoxic impacts that are worse in 15 years, but you know that patient may never get to 15 years.

So selecting the best drug, selecting the best patients, optimizing their cardiovascular health. For patients with diabetes, make sure that they have their diabetes controlled. Make sure that you get their blood pressure controlled. For patients who are smoking, smoking cessation, because smoking can have impact on cardiovascular health, on blood vessels, and the blood vessel health.

So all of those things you have to be aware of before you go in. And then, make sure that you monitor appropriately. So if you're on HER2 therapy, repeat your echocardiogram every three months, and make sure that that you follow those results and triage those patients appropriately.

Importantly, both for anthracycline and HER2-directed therapy, cardiovascular compromise is reversible. So, if you are able to identify it, then you can reverse it again. And we also now need to have really close relationships and low thresholds to send those patients to cardio-oncologists. We have a whole cardiac specialization that is focused on oncology health, so send them there. We know, for example, the ACE inhibitors, the beta blockers, those drugs can help—especially for patient at high risk—reduce the cardiovascular risks. Although that data set is a little iffy, but certainly for recovery, once you're off these medications and those patients have had

compromise, get them back up so that we can rechallenge them.

So all of those things that we have to be aware of as physicians when we are making decisions for therapies that have cardiovascular side effects.

**Ryan Quigley:**

You know, there's been a lot of therapeutic research and development going on for metastatic breast cancer, especially in recent years. Are these newer therapies changing the cardiovascular risk landscape at all?

**Dr. Vidal:**

We have new therapies. It's mostly more of the same, in recent times. So, for example, one of the drugs that I haven't talked about is the anti-estrogen therapies. We know they can impact your cholesterol level and they can impact your diabetes risk, and some of the newer ones can have bradycardic side effects, and so they definitely can also impact your cardiovascular health.

We are now in a time in oncology where we're doing a lot of antibody-type development. So there are ADCs—antibody drug conjugates—that are mainly using trastuzumab, which is the HER2-directed antibody that we talked about before with regards to cardiovascular health, but now using that as a vehicle to bring chemotherapy.

So we use what we call antibody drug conjugates to bring chemotherapy to the cancer cells. But, if HER2 also targets cardiovascular, it's also bringing those chemotherapies to cardiovascular cells. Those drugs are revolutionizing the way we treat metastatic breast cancer, which means those patients are living longer and therefore, on these drugs for longer periods. So we anticipate that we will probably see a higher impact on cardiovascular health.

We've seen data recently in the HER2-positive space that compared an ADC to what we do as standard, and there was a slight, at least numerically, higher impact on cardiovascular health than what we've done traditionally.

**Ryan Quigley:**

Dr. Vidal, we've reached the end of this program, but before we wrap up here, do you have any key takeaways that you'd like to leave with our audience about cardiovascular risk in metastatic breast cancer?

**Dr. Vidal:**

We need as practitioners, and even, not necessarily as medical oncologists, but also general practitioners, primary care, and OB/GYNs who also see these patients, need to be aware that there are drugs that we give that have cardiovascular impact. And they also need to be aware so that they can let us know.

There is some management guideline that goes by the acronym ABCDE, and I'll lead with that. A is be aware of risk. Aspirin can help sometimes. Assess for cardiovascular risk. B, blood pressure monitoring, and making sure that we control for that. C, cholesterol awareness, and cigarette smoking and cessation. D, diet and weight management. Being aware of dose and the impact of doses, especially anthracyclines, on cardiovascular health, and diabetes management. And then for E, exercise and making sure that we have appropriate monitoring with echocardiograms and ECGs. And so hopefully, for your audience out there, they can put the management of cardiovascular health in the context of oncology through that acronym.

**Ryan Quigley:**

Thank you very much for that. And with those final thoughts in mind, I want to thank my guest, Dr. Gregory Vidal, for joining me to discuss how we can monitor and improve heart health in patients with metastatic breast cancer.

Dr. Vidal, thank you so much for doing this. It was great having you on the program.

**Dr. Vidal:**

Thank you.

**Announcer:**

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