As in most of the things we deal with in cardiology-- remembering back to staging of heart failure, for example-- it's much easier to address and treat patients when they're asymptomatic. And that's what we try and accomplish with our surveillance programs, is to look for those early implications that justify therapy that may change the trajectory over time. And we do have some preliminary data that things like enzyme replacement therapy may slow down some of the progression of the deposition or that LG burden that we might see on our MRI. And in some situations, it may even reverse it to a certain degree, especially in the setting of valvular disease, for example.

So we think that a complete surveillance strategy should really look in a very comprehensive way. And by doing so, we can potentially avoid symptoms, but more importantly, avoid significant morbidity and mortality. Same thing applies for rhythm disturbances.

So if you were to see, any one of you, a Fabry patient came in, a part of their screening may be an ECG. So maybe their traditional screenings is an ECG and an echocardiogram. And I tell patients and providers, like, that's great. You've ruled out a few seconds. We only have 364 other days at risk for this year-- so meaning that we have to be cognizant that things don't just happen when you're hooked up to an ECG machine. And so a more complete surveillance strategy is sometimes indicated. So it's very important to ask about symptoms.

And all these things come back to, is there any way that you can find something that you can intervene on that would either slow or reverse progression of the disease at the cellular level, but also, is there anything that you could do that potentially could be a life-saving therapy? And for both of those instances, the answer is, yes.

We treat risk stratification, for example, for the cardiomyopathy we see in Fabry, typically, to how we would treat it with any other patient that has hypertrophic cardiomyopathy. So there are traditional risk factors that we would observe that would help us to understand who may be at a higher risk than others and might benefit from an elective ICD.

And we can make those points available to you through references, but one of those that's been accepted is the amount of LG burden you might see on an MRI, and it inherently sort of makes sense. If you've replaced myocardium with scar, it's going to be a ventricular ectopic nidus. It's going to be a problem, potentially, over time.

So looking for these things that you can identify, you can watch over time and, potentially, offer a therapy for, it's just a unique opportunity. And as a heart failure doc, I spend a lot of time talking, and looking, and researching on drugs that have anti-fibrotic potential. And for all the providers that are watching, that's important, because that could be our genetically-triggereds, but that could be your post-MI patients, for example. And what we're saying is that if there is any way you can mitigate that scar burn or, potentially, reverse it, you would take advantage of that.

And I think that's a similar discussion here for ERT, or chaperone therapy, or genomics and editing in the future, is that can we do something that will halt the progression of the disease or at least change the trajectory of the disease? And that's why finding it early, I think, makes all the difference in the world.

Because if someone comes to me with end-stage heart failure or refractory ventricular dysrhythmias, we can do a lot of therapies, but it's ultimately probably going to result in either a bad outcome or a very advanced therapy such as an LVAD or a transplant. And we don't want to do that if at all possible because of quality of life, and longevity, and other things that we consider.

So if you can treat patients earlier with a focus in mind-- and some people have postulated the idea that, perhaps, if we know that they're going to develop end-organ dysfunction, such as kidney or heart, maybe we should start people preemptively on therapies. And we haven't really gone down that path in the United States. It's definitely something that we can consider because we will have more neonates carrying a positive genotype. So something we can talk about over time, but that has pretty significant implications.

And remember, this is a relatively small cohort of patients. And so when someone asks, if I start ERT and I follow that patient, did I delay the onset of disease? I can't really tell you reliably. I don't know if I did it or not. I don't know what would have happened if I did not offer ERT. And so-- and you have to remember the heterogeneity of the phenotypes that we see make it a little bit hard to anticipate what the cardiac phenotype is going to be, whether that's a myopathy, whether that's a rhythm disturbance.

So I think that may be somewhere we go in the future, but I think for now, I would advocate, if you can find evidence of pathology on screening that's thoughtful and comprehensive, that is your argument to offer a therapy that would not be offered traditionally to other types of cardiomyopathies.