Mayo Clinic Q & A - Dr. Christopher DeSimone - Atrial Fibril...

Fri, 6/4 11:39AM 15:45

SUMMARY KEYWORDS

atrial fibrillation, patients, heart, people, ablation, mayo clinic, rhythm, afib, chris, life, drug, triggers, cardiac electrophysiology, sinus rhythm, stroke, lungs, matchsticks, chamber, feel, treatment

SPEAKERS

Dr. Halena Gazelka, Narrator, Dr. Christopher DeSimone

N Narrator 00:00
Coming up on Mayo Clinic Q&A,

D Dr. Christopher DeSimone 00:03
Probably around five or 7 million people that are suffering with AFib, that's estimated. But the more worrisome thing is, it might be much more common than that. And why? Because people don't walk around saying, Hey, I'm in atrial fibrillation come treat me. They don't know.

N Narrator 00:18
Atrial Fibrillation, or AFib, is an irregular and often rapid heart rate that can increase your risk of stroke, heart failure, and other heart related conditions. While AFib usually isn't life threatening itself, it is a serious medical condition that sometimes requires emergency treatment.

D Dr. Christopher DeSimone 00:36

So, there's a whole bunch of comorbidities that could cause this, mainly things that are really, really in parallel with developing atrial fibrillation is when someone has long-standing, high blood pressure or hypertension. Also, if someone has sleep apnea, that's another trigger towards this, or if their thyroid hormones are off balance. Those are all triggers.

D **Dr. Halena Gazelka** 00:57

Welcome everyone to Mayo Clinic Q&A. I'm Dr. Halena Gazelka. Atrial fibrillation or AFib, as it is sometimes known, is an irregular and often rapid heartbeat that can increase your risk of stroke, heart failure, and other cardiac problems. Episodes of atrial fibrillation can be self-limited, or they can go on for a period of time and need treatment. Although atrial fibrillation itself isn't usually life threatening, it is a serious medical condition, and it sometimes requires emergency treatment. Here with us to discuss this today is Mayo Clinic cardiologist Dr. Christopher De Simone. Dr. De Simone subspecializes in cardiac electrophysiology. It's a field that focuses on abnormal heart rhythms essentially. Thanks for being here with us today, Chris.

D **Dr. Christopher DeSimone** 01:48

Thank you, Dr. Gazelka, and it's a pleasure to be here. And I have a really strong passion in cardiac electrophysiology, especially in atrial fibrillation. So, whatever we could discuss today to make our patients more at ease, make them feel comfortable, I'm all for.

D **Dr. Halena Gazelka** 02:03

I think that's the first point to make Chris. I am sure we have listeners out there who had no idea about cardiac electrophysiology, much less that someone would specialize in it. But today, we're talking about atrial fibrillation. So, what happens to the heart when someone has atrial fibrillation?

D **Dr. Christopher DeSimone** 02:25

So, the way I like to explain it to patients is the heart is like a two-story building, you have the top as well as the bottom floor to the basement. The basement is where the money is, the real contraction and the strength of the heart pumping blood to the rest of the body. The top is kind of like where everybody kind of hangs out, and those are the filling chambers. But for those to coordinate and beat in a fashion that's manageable for life and to not give people symptoms, these are all dictated by various cells in the heart, which coordinate electrical conduction with mechanical contraction of the heart. So, in

atrial fibrillation, the top of the heart is kind of going irregular. And what I explain to my patients is, this is like a bag of worms. It's kind of like trying to squeeze but not squeezing efficiently. And when it's doing that, two things are happening. One, the heart is not filling adequately and pumping blood out to the rest of the body, and you can imagine people could get symptoms such as headaches, lightheadedness, dizziness, some people get chest pain. And overall, a lot of people just feel crummy and malaise. And also, the pressures in the left side of the heart back up, and they start to get higher. And that's where people could get really short of breath. Because that chamber is what's taking blood that's oxygenated from the lungs, and the pressure sort of builds up in the lungs and gives people a really uncomfortable feeling.

D Dr. Halena Gazelka 03:53

I love your analogies, two story houses and bags of worms. I can picture it all. I'm picturing the little people in the two-story house. Chris, how common is atrial fibrillation?

D Dr. Christopher DeSimone 04:05

It's very common. So, the thing I would say there's sort of probably around 5 or 7 million people that are suffering with AFib, that's estimated. But the more worrisome thing is, it might be much more common than that. And why? Because people don't walk around saying, Hey, I'm in atrial fibrillation come treat me. They don't know. And maybe they're accustomed, or maybe they say, oh, you know, I'm just getting older, this is just the way life is going to be. And they're not used to it until it's picked up in the office with their primary care provider at a PAME visit for preoperative surgery, that's classic. So, you hear the patient got, you know, this was found right before the patient was getting a colonoscopy. So, it's incidentally found and then patients saying, Oh, that's what's been going on, you know, I could tell this has been going on for a couple years. And the second thing that's very concerning is that there's an estimation that this could double or even triple in next decade or so. So, it's gonna be common and more common as the population ages, and we have a growing population.

D Dr. Halena Gazelka 05:08

Chris, the one thing I thought of when you're describing the symptoms is that I could imagine that people as they're growing older may write off the fact that they just feel kind of lousy, or they are a little fatigued, or maybe a little more short of breath, because maybe we just think, well, I guess I'm getting a little older, I can excuse that.

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Dr. Christopher DeSimone 05:25

Exactly. And what happens is, you know, it's a good feeling for me, but I imagine it's a bad feeling for them. Because once I'm able to get them back into normal rhythm, they say, oh, my goodness, I wish I would have had this taken care of, I didn't realize how bad it was. So, I think to make people feel better sooner and quicker, and to make them aware of some of these symptoms, and to get evaluated would be a great, great deal for our patients.

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Dr. Halena Gazelka 05:51

You mentioned that there might be even more people with atrial fibrillation in the future, say that fast five times. Chris, what causes people to develop atrial fibrillation?

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Dr. Christopher DeSimone 06:02

So, there's a whole bunch of comorbidities that could cause this, mainly things that are really, really in parallel with developing atrial fibrillation is when someone has long-standing, high blood pressure or hypertension. Also, if someone has sleep apnea, that's another trigger towards this. Sometimes things are in combination of alcohol use and caffeine, or if their thyroid hormones are off balance, those are all triggers. But it seems to be that our best predictor is the longer we age, or the more we age, that's when atrial fibrillation starts to come, and that's probably because of long-standing or unnoticed or untreated hypertension, but also because you have stretch and scar and fibrosis in the top chamber of the heart, which makes it much easier for atrial fibrillation to happen.

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Dr. Halena Gazelka 06:50

So how do you diagnose this and make certain it isn't some other arrhythmia or something else?

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Dr. Christopher DeSimone 06:55

Very important, right? Because if we diagnose it, we are able to say you have this, what are the next steps in your treatment care plan to do this? The best way to diagnose this, you know, some people are really, really good and say, well, you're a regular physical exam, and we're listening to your heart or looking at your neck veins and cardiac pulsations. Some people could pick it up now with the Apple Watches or iPads and iPods, all of these things. But really, the gold standard is to document this rhythm on an EKG.

D Dr. Halena Gazelka 07:26
Okay, and then how do you treat it once you know it's there?

D Dr. Christopher DeSimone 07:29
Well, that's a great question. And treatment all depends on what the patient's feeling. Some patients are what we call asymptomatic, and they're not aware they're in atrial fibrillation whatsoever. If that's the case, the best treatment for those patients are to make sure their heart rate doesn't go over 100 beats per minute in a 24-hour period, that their heart is not weakened from being in atrial fibrillation, and based on a risk score, that we use, criteria, whether or not they need to be on blood thinning medication to prevent stroke. Because stroke is the worst part of atrial fibrillation, five-fold at least risk of stroke if patients are in atrial fibrillation.

D Dr. Halena Gazelka 08:09
Why is that?

D Dr. Christopher DeSimone 08:10
It's more so of what we call, it's kind of like the appendix of the heart, it's called the left atrial appendage, and it's felt that 90 to 95% of the clots form there. What happens is you have blood spaces and pooling, and it's kind of this reservoir in the heart that kind of just fills up and it kind of curdles itself like cheese, milk and cheese, and it kind of just stays there. And because that's on the left side of the heart, that could embolize to the brain and cause patients to stroke, unfortunately.

D Dr. Halena Gazelka 08:41
What does it mean when someone has an ablation procedure for atrial fibrillation?

D Dr. Christopher DeSimone 08:46
Excellent. So, our strategies would be rate controlling medicine, so we keep the heart rate low, or within a reasonable range to protect the heart from getting weaker. Other options, what we term rhythm controlling approaches, and that means let's keep you out of atrial fibrillation because you feel better and/or the pumping function in your heart is better when you're in normal sinus rhythm. And that's what we call normal rhythm, sinus rhythm. It's the rhythm that God gave us. Here's our electricity pacemaker in the heart that God

gave us when we were all born and let's stay in that. And an ablation procedure is one attempt at rhythm when either a drug, an anti-arrhythmic drug fails, or a patient cannot tolerate or doesn't prefer to be on an antiarrhythmic agent. And what we do for the ablations is, we know where the triggers and where the atrial fibrillation sort of monsters lie, and these are at the top chamber, you know, the top of the house on the left side, and these are called pulmonary vein triggers. So, when we're all born, we grow out our lung buds from the heart and some of those lung veins which are going to again in the adult life and all types of life, will bring oxygenated blood from the lungs and drop it into the left atrium, the top chamber of the heart. Some of the left atrial tissue is pulled into the veins itself, and those are the triggers. So, for example, another analogy, those are like matchsticks I tell my patients, they get very angry, and then you start throwing little matchsticks on fire into the heart, and the hearts like a stack of logs, and one of those matches are going to catch and set the heart on fire and that's what starts off atrial fibrillation. So, an approach is catheter-based ablation, where I'm sure our listeners may have heard or know somebody that have had coronary angiograms, where they go up through the groin arteries, to look at the blood flow in the heart. This we go up through the veins in the groins, we go up into the heart with several catheters, we use a pretty cool, it's almost like a video game. We use a 3D mapping system to try to figure out where the heart is in space and time and measure that up with where our catheters are, which could also tell us where we are in space and time. What we do is, inside of the heart, but outside of the pulmonary veins, we try to form ablation lesions to kind of cage the tiger or cage these matchsticks from firing away. And that's a first and initial approach to patients to try to say let's do what we can to reduce the likelihood you'll go into atrial fibrillation. Let's make it really hard for you to go back into atrial fibrillation. It's not a cure, but as I tell my patients think about it as taking a one-time really great drug.

D Dr. Halena Gazelka 11:33

Well, speaking of drugs, when people are controlled or treat their atrial fibrillation with medications, are they usually on them for life?

D Dr. Christopher DeSimone 11:42

It's a good question. So, any ablation we do because we cannot cure atrial fibrillation for anything, drugs, or ablation still doesn't affect their stroke risk. So, patients will still be on blood thinners lifelong if they necessitate based on their risk criteria. So, ablation drugs, anything, no matter if they're in sinus rhythm or not, they still will be on blood thinners lifelong. Now, in terms of whether they need to be on the other agents, that's all depending on how well the ablation takes, how well their body as well as the risk factoring modifications such as exercise, weight loss, controlling their sleep apnea and blood

pressure takes place. But it's very common for us to get patients off of all of those, "anti arrhythmic medications" after ablation procedures. Sometimes patients have more advanced forms of atrial fibrillation, and they need both catheter ablation plus a drug.

D Dr. Halena Gazelka 12:39

Chris, I want to go back to something you just said, where you said it depended somewhat on if they modified the risk factors, exercise, manage their sleep apnea, et cetera, et cetera. So, can you reverse your atrial fibrillation, or does reducing your risk stop you from having it?

D Dr. Christopher DeSimone 12:59

So, that's a fantastic point. So, there's been large studies that show such a benefit, if patients do weight loss and risk factor modification, it's almost on the same parallel as our best drug in cardiology, it's really, really good. And reversing it would kind of be taking it to where you don't have much atrial fibrillation. And also reversing it means you could change the substrate of your heart, meaning the top chamber of the heart kind of says, Oh, I like being in atrial fibrillation, I'm scaring up I'm seeing all these pressures, I'm changing, I'm becoming more stiffer. But if you keep patients in sinus rhythm, and they stay in it, you could cause what we call left atrial remodeling. So, remodeling of that chamber of the heart, and patients do very, very well with that approach. So, I would say that all three of these risk factor modifications, catheter ablation, plus or minus drugs, as well as blood thinners are mainstays in our treatment for atrial fibrillation.

D Dr. Halena Gazelka 13:58

Well, Chris, I'm an anesthesiologist, and I learned something new today. Anything else that you want to share with our listeners today?

D Dr. Christopher DeSimone 14:05

I just really appreciate this opportunity, because atrial fibrillation is out there, more of it is unfortunately likely going to come. And I think our patients have lots and lots of questions and to see this in their chart or to be told about it, I hope our video makes them more informed, less scared, and likely to come see us and visit with us and have this discussion. Because we can really improve their quality of life, reduce their risk of stroke, intervene early and have a good impact on their quality of life.

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Dr. Halena Gazelka 14:33

I do think it is amazing what a difference it can make to have heard those words atrial fibrillation before you just encounter it somewhere.

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Dr. Christopher DeSimone 14:41

I think so. And patients really do feel tremendous improvement in their quality of life when we keep them in normal rhythm. So, I think this is fantastic. And I thank you very much.

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Dr. Halena Gazelka 14:50

Well, thanks for being here, Chris. Our thanks to Mayo Clinic cardiologist and cardiac electrophysiologist Dr. Chris DeSimone, for being here with us today to talk about this important topic of atrial fibrillation. I hope that you learned something, I know that I did. We wish each of you a very wonderful day.

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Narrator 15:08

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