

Announcer: Hello, welcome to Interview with the Experts. I'm Dr. Patricia Pellikka cardiologist at Mayo Clinic, and I'm joined here with a couple experts to talk about the topic of lifetime strategy in the management of aortic stenosis. Our experts today, our, our Dr. Mackram Eleid, professor of medicine, interventional cardiologist, and Dr. Kevin Greason, associate professor of surgery and from our department of cardiovascular surgery, both our authorities in the subject of the management of aortic stenosis. This area certainly changed a lot in the past 10 to 20 years. I remember when Dr. Brunwald wrote his editorial 30 years ago saying that the most common cause of death in patients with severe aortic stenosis was surgery. That is certainly not the case. Kevin, what do you think of that?

Dr. Kevin Greason: Right. Oh, I don't even know where to begin. I think we've improved a lot over the last 30 years, you know, so now our mortality is down around 1%, you know, and I think the benefits of the quality of life improvement make it a low risk procedure with high benefit.

Dr. Patricia Pellikka: Thank you. Mac, how has the treatment changed in in your interventional world?

Dr. Mackram Eleid: Well, I completely agree. It's Patty, it's, it's with Kevin also that, you know, it's, it's now that we can tailor the treatment to the patient's preferences and also their longevity and risk for surgery, I think we, we have a lot more options. So that's, that's resulted in a lower mortality for these patients.

Dr. Patricia Pellikka: What's the relative use of TAVR versus surgical approaches for patients that are, that we're seeing now?

Dr. Mackram Eleid: It's about 50 50 at this point. Kevin might have more specifics there, but we've seen a steady trend that the rates of TAVR are increasing and surgery has been pretty consistent for, for a VR. Kevin, do you agree?

Dr. Kevin Greason: Yeah, I think what we're seeing is that older, sicker people are getting TAVI now, whereas before they weren't getting anything. So I think that is a large responsible for the large increase in our volume and there's always like a set group of patients that are probably gonna be best served with surgery. And I don't think that that group has really changed, although I do see that in the future that TAVI will probably have a larger impact for that set of patients moving forward

Dr. Patricia Pellikka: With multiple choices. Now sometimes decisions may be challenging. What, what would you say are some of challenging decisions that you have to make when deciding about treatment?

Dr. Kevin Greason: Yeah, I think, well from my perspective, you know, it's a patient-centric focus and you just laid out there for them from a surgical standpoint, one thing I think I like to emphasize is valve durability. Obviously a mechanical valve is a great option in my opinion. And people who get mechanical valves when they're 50 and they age on to 80, you know, still have a mechanical valve. So you can do well with that. And I like to highlight that associated comorbidities can be dealt with effectively at surgery. And I think one of the most important ones is atrial fibrillation. You know, we can do a left atrial appendectomy at the time of an aortic valve replacement. And I think that has a significant impact on the patient's life moving forward as far as stroke reduction. And I think that has to be entered into the discussion anytime we're talking about aortic valve replacement in these patients.

Dr. Patricia Pellikka: Thank you. Mac, what would you add to that?

Dr. Mackram Eleid: Yeah, I mean I think that the, we, we, we face younger patients that, that strongly prefer a tissue valve as well. So we have a lot of in-depth discussions with these patients about mechanical versus tissue prosthesis and try to really get at what the patient's long-term plan is for their aortic valve disease in terms of needing the next valve. And we try to plan that upfront, particularly in the patients who were going with a tissue valve, which really is, is the majority of the patients with aortic stenosis, although the mechanical valve is, is a big important part of that conversation.

Dr. Kevin Greason: I would say that in our surgical practice, probably 50% of patients end up getting a mechanical valve and that is kind of an anomaly nationwide. 'cause if you look at other places, you know, 95% of patients get a biological valve. And I think it's just important to have that good conversation with the patients about, you know, what are the, the risks and benefits of both of those. You know, we're just learning about valve and valve now really, especially with valve and tavi. So, you know, we're putting in a lot of tavi thinking we're gonna do valve and valve down the road, but we're not quite sure, you know, how that's gonna turn out. You know, is that a lifetime, a good lifetime choice? I don't know the answer to that right now.

Dr. Patricia Pellikka: It certainly leaves the patient with a increasingly progressively smaller valve area, doesn't it? Even if it's functioning properly,

Dr. Mackram Eleid: Right, absolutely.

Dr. Kevin Greason: The old Russian doll and doll or whatever they call that, you know,

Dr. Patricia Pellikka: Tell us a little bit about the concept of commissural alignment. How important is that?

Dr. Mackram Eleid: Yeah, it's, it's becoming increasingly important. There's a lot of focus on it in terms of the importance of having the, the commissure, which are the, what support the leaflets kind. They're kind of in between each cusp of the prosthetic valve and making sure that that's not directly obstructing or in front of the coronary ostium. And that that really will allow coronary reaccess more easily because with these transcatheter valves, we have a, a stent frame or a cage that's also there, and we also have the native leaflet tissue as well. So when the, when the commissure is also obstructing the coronary as well, that can make it hard for coronary re-access and also has other implications. You know. Kevin, do you have other things to add to that?

Dr. Kevin Greason: Yeah, I think in my mind where that's probably gonna be a huge thing is for when we plan valve and valve down the road. And I think, you know, if there's a strut right in front of a coronary artery, that is a different set of issues than if there's a valve tissue there. I, I think we're too early in the, in that paradigm to really kind of figure out how important it's gonna be and how it impacts what we do down the road. But certainly I agree, you know, access to the coronary arteries is important, especially if we're doing TAVI in younger patients and we should plan for that.

Dr. Patricia Pellikka: What is your thoughts about bicuspid valves that become stenotic now? There was initial reluctance to do TAVR in those patients, but, but they're now being done, right?

Dr. Mackram Eleid: Yes, go ahead.

Dr. Kevin Greason: Our practice here, we've done several hundred and the thing about the bicuspid valves is they tend to be more heavily calcified, which can make the procedure a little more difficult and there's probably a little bit higher risk of stroke. And we tend to do surgery for bicuspid valves on younger patients. So those are several important things that you need to have a good conversation with the patient about before pushing ahead with a tavi.

Dr. Patricia Pellikka: The patient conversation is always important, isn't it?

Dr. Kevin Greason: Yeah. But I think our outcomes as far as gradients and paravalvular leak are similar with bicuspid valve and maybe even a little bit better than the tricuspid valve mac. What do you, what do you think about that?

Dr. Mackram Eleid: Yeah, I mean I think we, I agree. I mean we've had a good experience with it and we've learned our sizing, our approach to sizing the transcatheter valve with these patients once we

have made that decision to do TAVR is a little bit different. We'll, we, we will size, you know, taking into account the degree of calcification as well. I think in general we like less oversizing when we have the really high calcium score and the asymmetric bicuspid valves

Dr. Patricia Pellikka: Initially we were concerned about potential longevity of the TAVR valves and were, that was one of the arguments for placing them in patients that were elderly and restricting it to the elderly high risk patients. But now we're getting some long-term data on their longevity, which seems to be pretty good. What would you say the longevity of the TAVR valves is and what do we do if they fail?

Dr. Mackram Eleid: Well, I think that the longevity thus far seems to be similar to bioprosthetic surgical valves from the data we've seen, the five plus year data that we've seen with the current currently available valves and, and you know, the question of what to do when they fail. I think as Kevin brought up, we we're, we're still learning about how often valve and valve is possible, but we can predict that based on the CT and looking at the coronary height, the size of the sinuses, and also the type of valve that we're putting in, how likely it would be that we could put a valve inside of the valve. And you know, my prediction is that probably a large proportion of the patients are going to be a candidate for that, assuming that we are putting in valves that, that don't have very high commissures that that don't have very narrow sinuses. But, oh, Kevin, what else do you have to add to that?

Dr. Kevin Greason: Well, they just came out with the 10 year data from the notion trial at the most recent PCR meeting and biological valve failure was similar in the TAVI and the surgical aortic valve groups at 10 years. Now that's a small study, you know, maybe 150 patients in each arm, but there's no signal there that that's a problem. And that was mirrored also in the partner three data that just came out with the five-year data. So I think we'll see that TAVI valves last as long as biological surgical valves. You know, I'm, it's my crystal ball, but that's what I'm anticipating.

Dr. Patricia Pellikka: Kevin, are you still thinking that the bioprosthesis last longer if they're implanted in elderly patients as opposed to young, younger patients?

Dr. Kevin Greason: Yes, absolutely.

Dr. Patricia Pellikka: Some hemodynamics-

Dr. Kevin Greason: You have to remember in the partner three trial, the average age was, you know, in the mid seventies and in the partner one and two was in the mid eighties. So that may be deceptive for valve durability.

Dr. Patricia Pellikka: So this would impact the way you would advise someone who is perhaps 50 and has severe aortic stenosis.

Dr. Kevin Greason: Yeah, absolutely. But you know, there's patients that we have flat out told them, you are not a good candidate for tavi. And they go, okay, thank you. I still wanna have a tavi. You know, so that's a difficult conversation.

Dr. Patricia Pellikka: What, what parting advice do you have for our audience on this topic?

Dr. Mackram Eleid: Well, I mean, I think that the, the, the options have grown. We have more and more options and, and so I think it's important just to, to make sure that all options are discussed with the patients and, and make sure that you're having the full heart team approach and to, so that patients are as educated as possible about their decisions. But I think we're just continuing to expand the horizons for these patients and lots, lots of questions that we need to answer. The importance of the commercial alignment, the best anticoagulation, antiplatelet regimen after TAVI is still an ongoing area of investigation as well. And, and we're also still trying to, to lower the rates of pacemaker as well, which continues to be a little bit higher with TAVR than with surgery. So there's a lot more for us to learn in this area.

Dr. Kevin Greason: And when I talk to patients, I try to tell them, you want five things from your aortic valve replacement? You don't wanna die, you don't want to have a stroke, you don't wanna have a pacemaker, you don't want to have a major complication like renal failure or bleeding and you want valve durability. So as long as I touch on those five things, you know, they're, they're different with each valve. And as long as the patient understands that and they have to look you in the eye and tell you they understand that, then it's their choice to make. And I think that, you know, even younger patients don't necessarily want to have a sternotomy and they're gonna opt for a TAVI procedure, even though, you know, maybe there's a high risk of pacemaker, maybe the valve durability isn't as good, you know, as long as they understand it, I guess that's okay. At least in the current medical legal environment. It's okay.

Dr. Patricia Pellikka: Our heart team approach to management of these patients has certainly yielded great results. And this teamwork and looking at continuing to examine our experience and answer these research questions will be really important in the future. Thanks for visiting with me today.

Dr. Mackram Eleid: Thank you.

Dr. Kevin Greason: You're welcome. Thank you.