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Putting Data into Clinical Practice

Announcer:
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Dr Taub:
This is CME on ReachMD. I'm Pam Taub, I'm a noninvasive cardiologist at UC San Diego. And here with me today is Dr. Steven Yakubov.

Steven, could you give us an overview on the importance of valve performance in transcatheter aortic valve replacement, and what the noninvasive cardiologist should know about their role in managing these patients post TAVR.

Dr. Yakubov:
Thanks, Pam, and thanks for having me today. Valve performance is the most lingering question now once the TAVR valve is placed. And we break down valve performance into bioprosthetic valve dysfunction. And those definitions include: Does the valve fail at a certain period of time, do you need to replace the valve? Is there patient prosthesis mismatch? Is there PVL? And is there thrombosis or endocarditis of the valve? So, there's several components to the bioprosthetic valve dysfunction definition.

Here's what we know, we know that the valve performance dictates how important it is for the patient to feel. So, if you're able to lower the gradient and the valve lasts, the patients feel better. And we've done several studies that kind of spells out kind of what valve performance long-term means to the patient, and how durable the valve is.

So, Dan O'Hair was the first one to publish data on valve durability. He looked at the CoreValve supra-annular valve versus surgery out of the CoreValve clinical trials, and in 5 years, it appears as though CoreValve had less bioprosthetic valve dysfunction compared to surgery. That's better hemodynamic performance, less changes in gradients in the TAVR valve. That was followed up by a clinical trial that I presented where we looked at all of the definitions of bioprosthetic valve dysfunction, and that included patient prosthesis mismatch, of which there is more patient prosthesis mismatch with surgery compared to a supra-annular valve. Thrombosis and endocarditis are identical between surgical valves and TAVR valves. But there is a greater chance of an increase in gradient of greater than 10 from the baseline to any point in measurement by ECHO, and a greater change of a 20 mm gradient or greater on echocardiography with a surgical valve compared to CoreValve at 5 years.

The final caveat was the NOTION trial, which is a European trial at low risk and intermediate risk patients, which is now out to 10 years, showing that the need to replace either the TAVR or the surgical valve at 10 years is identical. That's reassuring for the patients. They know that the chances of them needing to have a valve replaced within 10 years is low, it's less than 20%. And this gives us an opportunity for our noninvasive colleagues to follow the valves carefully with echocardiography, monitor the gradients, monitor the patients for PVL, and make appropriate medication adjustments.

Dr. Taub:
This data is very reassuring, and we know from a patient perspective, the patient preference is always for a noninvasive procedure

versus surgical valve replacement, and this data is very reassuring that these valves have good longevity. I was impressed by the NOTION trial and one of the things that I saw in the NOTION trial is the TAVR valves actually have some better hemodynamic performance than the surgical valve, which I was a little surprised about.

Dr. Yakubov:
Yeah, I think that when the valve is supra-annular you have a much better chance of having better gradients, and it looks like that supra-annular position and the frame design allows for better hemodynamic performance long-term. And it's the hemodynamic performance that makes the patients feel better.

Dr. Taub:
So, I think some of the takeaway messages from our discussions are that TAVR valves are durable, and we have some great long-term data on their performance. Any takeaway points that you want to emphasize?

Dr. Yakubov:
No, I agree with that. We just need more longer-term data to reassure everyone that TAVR is a procedure that will be long-lasting, hopefully longer lasting than even our surgical procedures. And I think that would be very comforting for both operators and patients.

Announcer:
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