

Navigating the Patient Care Pathway to TAVR for Severe Aortic Stenosis Patients During COVID-19

CLD talks with:

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How dangerous is severe aortic stenosis if left untreated?



Augustin DeLago, MD: Symptomatic aortic stenosis patients have a mortality rate as high as 40 to 50% at 1 to 2 years, which has been well documented.

These are patients that clearly need to be treated and that I consider essential. Even an elective patient with an aortic valve area of ≤ 0.6 has a very high risk of 1-year mortality. Sometimes the bigger question people like to ask is, who is considered non-essential? These are patients who are asymptomatic, with a valve area of 0.9 or greater. They tend to be doing pretty well. We will regularly put these patients on the treadmill in the clinic. I had a patient today who said he was asymptomatic, with a valve

area of 0.9. I put him on the treadmill and he did four metabolic equivalent (METs) of exercise, which is a good indicator of a poor capacity and a poor prognosis. Even though their valve area isn't < 0.7 , a treadmill test can show whether patients can meet a certain exercise capacity. It is another way to evaluate these patients. I think we can wait two or three months for patients who have valve areas of > 0.8 , who are truly asymptomatic, and who can go on a treadmill with greater than five METs of exercise. Everyone else in the other group that I mentioned is probably essential for a TAVR.

Our planning began as soon as the governor started talking about the need for ventilators in the hospitals in New

York City, about a month ago (in March). Albany Medical Center is about 170 miles outside of New York City, meaning we could possibly take new patients and transfers from the city. We were told to start thinking about our elective procedures. As soon as I heard that, I sat down with my group and we put procedures that we thought were appropriate into groups, not only in the cath lab, but in the electrophysiology lab as well.

At the medical center, we proactively approached the interventional cardiologists and structural cardiologists, made a

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list of what we thought was essential and non-essential, and determined how we would work up these patients and decide who could wait and who could not wait. This happened as soon as we knew there was possibly going to be bed rationing. We wanted to make sure that there were enough ICU beds available, so we went through an essential/nonessential list and came up with our criteria based on symptoms in valve areas. We went to the administration ahead of time, before they asked us. They agreed it was a good list, that we were thoughtful about it, and they have not given us one bit of pushback.



Bassem M. Chehab, MD: These are tricky times. We didn't have to think this way before and we are all learning. In early March, our administration no-

tified us that we had to stop doing TAVR cases and do only emergent TAVR cases. But which ones are the emergent cases? These people have critical symptomatic aortic valve stenosis. It is difficult to triage in order to determine who is high risk or not. After a long discussion with the administration, we were able to keep treating these patients. We have an open dialogue with our administration about available hospital beds, PPE, and volumes.

With symptomatic valve disease, it is difficult to decide on those patients who can be delayed. In my opinion, if symptomatic valve disease is present, I don't think anyone can wait. If a patient has severe aortic valve stenosis with symptoms, their risk of death or additional comorbidities is quite high. They should not be delayed unless there are certain significant conditions. So far, we have not shied away from treating anyone. While Wichita does have COVID and we are treating COVID patients, we have not yet hit a high number of COVID patients. This is not even a state-by-state issue — more like

county by county. For us to apply what is going on in New York City or other big cities to Wichita, Kansas, is not going to work. We would end up denying treatment to many of our patients. Our administration was very open minded, and we have set up weekly meetings to assess the current situation.

Dr. DeLago: We have been very fortunate in upstate New York, which has been nothing like New York City. At Albany Medical Center, we took approximately a hundred patients on ventilators from New York City to our COVID floors. We never had the impact in the cath lab. In fact, the cath labs are kind of quiet. We are usually doing 10 to 12 TAVRs a week and now we are down to doing about 5 to 6 a week. A lot of delays, believe it or not, are due to patient concerns. At our last count, we have about 90 patients in the queue who have canceled and had their procedures moved out to June. We have a huge number of patients who have decided on their own, despite us calling and trying to get them to come in, despite us telling them how important it is, that they would like to wait. We are ready to treat them, but it is their choice.

Do you maintain contact with postponed patients?

Dr. DeLago: Yes, we do. We make sure that they have a follow-up visit every four weeks in the clinic, until they are scheduled for their valve. There is ample parking. We have even cut down the amount of patients we are seeing in the clinic, so they can socially distance in our waiting rooms. We have a separate structural clinic.

Dr. Chehab, have any of your TAVR patients deferred their procedure because of their fear of COVID-19?

Dr. Chehab: Yes, but the impact here from COVID hasn't been that high, so even in the overall population, people are still not that worried about coming in and seeing their doctors. The problem does exist. We might have a few dozen patients with severe symptomatic aortic stenosis where we have tried to get them

scheduled, but they are deferring. I call them personally. I talk with their family doctor and I hope to provide education about how important it is that their disease be treated. I would say, on average, this has allowed us to convert maybe 20% of patients to change their mind and have their procedure done. Still, some people remain determined and you cannot change their mind. We have also restructured the clinic setup. We are minimizing our 30-day and one-year follow-ups, and moving to telemedicine with these patients. It has had a huge impact on our practice. We now focus mainly on new patients and have started seeing them outside of the hospital setting and outpatient clinic. This way there is ample parking and open spaces. We enforce social distancing. We do not overbook patients in order to avoid a lot of people in the waiting room, which has created a comfort level within our patient population. However, it is sometimes very hard to predict the clinical progression of these patients. I've had patients that I have seen in clinic and I said, "Yes, you can wait." And they walked to the parking lot and collapsed. There is a lot of variation in the spectrum of presentation. It definitely depends on the echo imaging. What are the gradients? What is the ejection fraction? In general, a few patients can wait. The question is how long to wait and how long can we push it. It is sometimes hard to predict.

Have you seen any patients with severe aortic stenosis who are COVID positive?

Dr. DeLago: I haven't yet seen a COVID-positive patient with severe aortic stenosis.

Dr. Chehab: I don't think they are reaching us. I am actually not the one going to the patient concerned about their COVID risk. They are coming to me and sharing that concern. Family members are asking, "What's going to happen if we wait on my grandad or mom's procedure, and they catch COVID?" I've had a few questions like

this coming from family members and it was tough to answer. We were not ready for that kind of question. These patients are starting at a disadvantage. There are no data, but if you then add COVID to this elderly and very vulnerable population, theoretically they would not fare well.

What about your communication with referring physicians?

Dr. DeLago: I've had good luck with our referring physicians. The primary care doctors continue to refer, even though the volume that they are referring is probably less, because they are not seeing as many patients in their offices. We communicate with them on a regular basis. Every time I do a TAVR, I call the primary care physician after the procedure. For me, that is probably the best way to communicate, because they always ask, "You're at the medical center with all these COVID patients. How's it going? What are you treating?" I have been in practice for 30 years and I never lose that opportunity to talk to a primary care physician who is referring patients. It is probably the best way to keep that referral base open and educated.

Dr. Chehab: I agree. This has been our experience, even before COVID. For example, when we are launching new trials, I always make sure to call my referring physicians, whether other cardiologists or family doctors. Many of our referring physicians assumed that we were not doing TAVRs anymore because they thought it was an elective procedure. I personally reached out to them to discuss the situation and they were very happy to hear that we are still treating these patients. Once I called them and had this discussion, we saw new referrals come in. Keeping open communication with the referring system is a very important tool, not just for COVID, but for anything else we do. My mission is to spread the message to everyone that we are still open. We are not New York City. We're not Chicago. We are still open to treat your patients and take care

of them. When that time comes, I will let you know, but we're not there yet.

Dr. DeLago: If a patient was referred, I make sure I see them in the clinic. We talk and I can evaluate them face to face. Then we talk to the referring physicians about next steps. Again, if the patient is truly asymptomatic, with good left ventricular function, and an acceptable valve area, maybe we will defer that patient. But it is very important to make that contact. You can't do these consults with a patient over the phone. You need to see them, usually with their family member.

Dr. Chehab: The institution asked us to do telemedicine for new patients, but I adamantly refused and I am glad I did. It is so hard to make these kind of assessments via telemedicine. I am a huge fan of telemedicine, don't get me wrong, but it is very hard with a new patient, someone that you don't know, to assess where they are in their disease and at what level. It needs a face-to-face.

Dr. DeLago: You also establish a lot of credibility with these patients and their families, because you get to talk to the daughter and the aunt, not through a screen, but face to face. We're going to try to do some aspects electronically, but certain things, particularly in and around high risk procedures, require talking to people face to face.

Are there things that have changed as a result of COVID-19 that you will continue to do in the future?

Dr. Chehab: Yes, we have learned ways to become more efficient. Initially, when we first started our structural heart/TAVR program and valve clinic system, we were limited to having everything done within the hospital system. Since COVID, we have figured out new techniques to help us have patients seen and the workup done in an expedited

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fashion outside of the hospital system. Many families don't want to come to the hospital. As a result, we opened up our ancillary outpatient clinics, our outpatient imaging centers, for echos and ancillary services. We started using CT imaging, for example, in our ambulatory centers. Seeing these patients in smaller outpatient locations offers more options and time, and has added value to how we are seeing and streamlining these patients. I don't think I will let go of that even when COVID risk relents, because it has made my time more efficient. It has also made the patients and the families' time more efficient, since they are spending less time getting the workup done. We are becoming more like a one-stop shop, rather than requiring patients to come back and forth multiple times. Social distancing may also continue.

Dr. DeLago: Our separate structural clinic outside the hospital works well. We have only cut back on the daily number of patients we are seeing. Another positive development is that out of the 5 patients that I am taking care of now, 1 to 2 are going home the same day. Same-day discharge is efficient for certain subsets of patients.

Can you share more about your same-day discharge experience?

Dr. DeLago: Good candidates include patients who have good vascular access, are without a significant amount of comorbidities, don't have any conduction disturbances at the time of the procedure, and who are done early in the morning so we can watch them for 6 to 8 hours. They also have to live within a zip code that is appropriate to Albany

Medical Center Hospital. They can't be living an hour and a half or two hours away. We put trans-telephonic monitors on all our patients for two weeks when they are discharged in order to monitor their heart rates. With the right family support, the right age, and the right vasculature, probably 10 to 20% of patients can go home the same day.

Both of you talked about having wait lists resulting from patients not wanting to come to the hospital. Do you expect that some of your patients may pass away while waiting?

Dr. DeLago: Yes, it is just the natural history of the disease. Patients can wait too long. The amount of fear in and around hospitals needs to be quelled a little bit. The amount of COVID patients in Albany County is 400 total right now.

We have a very vulnerable population that could be massively affected by COVID, and we are treating them with limited resource use and limited impact on the system, and that is the beauty of TAVR.

We've had 9 COVID deaths in Albany County. This is not New York City and we can't have everyone treating the whole country like it's New York City. It's awful in New York City and my fellow clinicians down there are suffering through this madness. But COVID has materialized at a different level up here in Albany. Meanwhile, we have patients scared to death to come to the hospital. Action is going to have to be done at national and state levels to calm people and lessen their fear of going to the hospital.

Dr. Chehab: We have a massive pool of patients that come from everywhere in Kansas, but it's still not New York City. My discussion with the administration was, "Our patients are very sick. They're sicker than how they look. We're going to see them die if you stop our elective cases, or stop these cases 3-4 weeks

ahead of the supposed surge. These people will be impacted and they're going to get hurt waiting." The second concern that I expressed was that if we do stop TAVR procedures, and then six weeks from now we decide that it is safe to reopen, we cannot do 90 cases in two weeks. We don't have the capacity or infrastructure. People who have been waiting for so many weeks, sick with symptoms, they're going to have to wait again for us to move them through the pipeline. This isn't even counting new cases. Our administration was very reasonable; they listened.

Can you share more about your conversations with your administration?

Dr. DeLago: Administration did want us to document in the chart exactly why we thought the patient needed to

not taking away from their resources. We don't use ventilators. All our TAVR procedures are done with conscious sedation in the cath lab. We are not using OR rooms. We are not taking away ICU beds. Our patients go to a step-down unit, and then home the same day or home the next day. We have a very vulnerable population that could be massively affected by COVID, and we are treating them with limited resource use and limited impact on the system, and that is the beauty of TAVR.

Is there anything that we haven't talked about that you'd like to share with other heart teams?

Dr. DeLago: Teams need to be more efficient, in general. There is going to be some pent-up demand when COVID breaks. There may be a tremendous amount of people that are going to need to be treated in a short period of time. If hospitals are not working on their efficiencies now, they are going to have difficulties. Dr. Chehab mentioned how he is seeing patients in outpatient areas just to be more efficient. Hospitals are not going to be able to go back to the old way of doing things.

Dr. Chehab: I am worried about what is going to come in the next few months. There are centers that do 4 TAVRs a month. I have no idea how they are going to change their efficiencies and models to take care of all the people who have been waiting. I have now been doing TAVRs for 10 years and have spent my career advocating that we not let go of this untreated population, those who are being forgotten and falling through the cracks. We should not sit on this population; we need to treat them. ■

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be done, and certainly, we make sure that we give the reasons right in our reports as to why we felt the patient was essential. Keeping the labs busy was always part of the conversation, in order to treat patients that are ill and who need to be treated.

Dr. Chehab: We have been meeting with administration on a weekly basis to discuss the bed situation, how many COVID cases the hospital has, staffing, and any red flags for the next week telling us if we should downsize or do something differently. Fortunately, we have not yet had any red flags. If anything, the hospital is currently at 40-50% capacity. Almost every other department had to send staff home except in the cardiovascular service line, where we are keeping the cath lab busy. Administration realized TAVR is