Title: EuroPCR 23: TVT Registry Analysis: TAVR in Patients with Cardiogenic Shock
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Dr Abhijeet Dhoble

" So I'm Abhijeet Doble. I'm one of the associate professors of medicine. I work at University of Texas in, in Houston and also at the Memorial Hermann Heart and Vascular Institute in, in Houston, Texas Medical Center. I lead the structural heart program there and I'm the director of Structural Heart Disease.

What is the background of the analysis? What do we know about contemporary TAVR in cardiogenic shock patients?

So, in the contemporary era, patients who come in with aortic stenosis and cardiogenic shock, we really don't know what to do with these patients. So, every center is very - their own data driven, kind of and they would do what's best for the patient at that time, but there is not much of a data to support any of those decisions. There was actually another study that came out about five or so years ago, looked at the same database but using all the valves, which included majority of the older generation valves at that time. Based on that background to kind of define what happens to these patients, we selected to do this analysis from the TVT registry.

How did you define cardiogenic shock?

It was not an easy task because it's the largest registry in the US. It's a TVT registry. So, data that's reported to this registry is site driven and we basically trust the data that's been entered by an individual site. So, it was not as easy to define the cardiogenic shock. Basically, when we looked at other literature, we decided to include patients who were labeled as cardiogenic shock in that registry. We also included patients who were on some kind of inotropic therapy or had a mechanical circulatory support device in place within the last 24 hours before the TAVR. And the third category was we included patients, any patients who had cardiac arrest within the 24 hours.

What is study design and patient cohort?

So, this is a registry study from the largest registry in the United States. This was a longitudinal observational study. We included patients who were defined as cardiogenic shock and compared them to a cohort of patients who was matched based on the characteristics as a control group. And we longitudinally followed these patients for about a year. So, we have one year follow-up data for these patients.

What is data presented at EuroPCR? What conclusions can be made?

We presented the outcomes of TAVR patients with cardiogenic shock here at the EuroPCR and one of the two conclusions is that if the patient survives the initial impact from shock, they do well in long term. After a landmark analysis at four weeks post TAVR, the outcomes of patients were pretty similar in the two groups. And the second conclusion is, if the patient survives this initial impact from shock, not only they're alive at one year, but they're doing pretty well, reflected by their NYHA functional class, which was either class one or class two. At the end of one year in majority of the patients and their quality of life was improved, reflected in the improvement in the KCCQ questionnaire, which was almost50 point increment at one year from baseline.

Are there any predictors or risk factors that can help identify patients who would benefit the most from TAVI in cardiogenic shock?

So again, we didn't present this at the EuroPCR, but there is a manuscript in process right now. Hopefully it will be accepted, and all this data will be revealed. But one of the indicators that we saw, one of the patient subgroups that we saw do really well, is the patients with prior bioprosthetic valve in place. So, if this patient presents with cardiogenic shock, and if you do TAVR in them, they do really well. On the other side, we have seen that the patients who are already on dialysis or the patients who already have mechanical circulatory support device in place, they don't do as well as the other patients.

Where are the knowledge gaps, and how can this be aided with further research?

It’d be very nice to have a randomized controlled trial, but I think in patients with shock, it’s extremely challenging to perform a clinical trial. So, a lot of time we just have to base our decision based on registry data, such as our data that's been presented here. After this data comes out in the form of manuscript, I think the largest gap that will remain is the timing of TAVR in patients with shock. So, from the timing of their arrival to the hospital, what's the appropriate time for the TAVR? Is it sooner rather than later? How long should you wait? Should you really optimize them before the TAVR? That's number one. And number two is to identify patients who won't do well after the TAVR. In another word, in which situation TAVR will be futile, so to speak. And again, I don't think we can draw any major conclusion based on this TVT data.”