- Hello, my name is Dr. Amos Levi. I'm an Interventional Cardiologist working in Rabin Medical Centre in Petah Tikva, Israel. So today we'll be discussing the ASTRO-TAVI collaboration study. This is a study dealing with stroke complicating Transcatheter Aortic Valve Implantation.

Importance of the Study

So, stroke is a serious complication of TAVI. We know that rates were in the range of 5 to 6% in the early days of TAVI. And they had since declined to about 2 to 3%, but actually have plateaued more or less on that rate. So it remains a serious issue with TAVI. There is a lot of data regarding risk factors for stroke, but actually we are the first to collect data directly relating to stroke outcomes in respect to severity and then on the interventions directed to treat acute stroke after TAVI.

Study Design and Patient Cohort

So we collaborated with 14 centers in North America, Europe and Israel. And we looked at data from more than 16,000 TAVI procedures. Actually, we identified 387 strokes out of these 16,000 cases. Then we looked at stroke severity and outcomes. Our main outcomes of interest were mortality at one year and then neurological disability scores at 90 days. And then the last thing we looked at interventions to treat acute stroke and their outcomes. So, 39 patients out of the 387 have undergone interventions to treat acute stroke.

Key Findings

So several important findings. Most strokes occurred within 48 hours of TAVI. We've also noticed that there was a direct correlation between stroke severity and survival at one year. So, survival after severe stroke, mortality after severe stroke, was more than 50% at one month. And mortality after mild stroke was about 30% after one year. We also looked at outcomes of neurointervention. So, 39 patients have undergone neurointervention, 26 of them have undergone mechanical thrombectomy and 13 received thrombolytic therapy. And what we've seen was that odds ratio for independent survival at 90 days after neurointerventions were three compared to conservative therapy. So the outcomes were much better. The neurological outcomes were much better with neurointervention as compared to conservative therapy.

Embolic Protection

So I think that the evidence so far for using protection for every TAVI cases are not very strong. I think we still need to identify the population which will benefit from using protection for stroke prevention.

Take-Home Messages for Clinicians

Okay, so I think that in the recent years, we've talked a lot about prevention of stroke after TAVI which is very important. But we have to acknowledge that we cannot eliminate stroke after TAVI completely. There would continue to be strokes after TAVI. So we need to discuss stroke treatment after TAVI and to find better strategies to manage with stroke after TAVI.

Next Steps

I think that our study is mainly thought provoking and the lot of questions that need to be answered. So for example, we need to compare mechanical thrombectomy to thrombolytic therapy. We know that not all centres can offer mechanical thrombectomy and therefore we need to understand whether thrombolytic therapy is effective and safe to treat stroke after TAVI. And then another question is what should be the strategy in centres that don't have an onsite neurointervention service, what should we do? And there's a lot more to study in this field.

Call for Collaboration

So of course, we need more stroke cases to analyse all of these questions. So, we would be very happy if anyone who is interested to join us in that collaboration will contact us and will share their TAVI and stroke cases with us as well.