- Hi, my name is Ajay Kirtane. I'm a Professor of Medicine at Columbia University Medical Centre in New York. And I'm here to present the results of the six-month data from the RADIANCE-HTN TRIO study, which I presented at TCT.

**RADIANCE-HTN in the Context of Other Studies**

RADIANCE-HTN was two parts of an overall programme of studies. The first was a RADIANCE-HTN solo study, which took patients off medicines and then tried to compare renal denervation versus the Sham procedure. RADIANCE-HTN TRIO, which is what I presented was an on-med study or taking patients on one single combination pill of three medications, and then randomising patients to renal denervation versus a sham control.

**Design and Eligibility Criteria**

In order to be eligible for this study, patients had to have elevated blood pressures despite multiple medications. In average, in this study, patients had blood pressures of 160 mmHg despite being on four medications at baseline. They then were taken off their home regimen, put on a combination pill, consisting of a Calcium channel blocker, thiazide diuretic and an angiotensin receptor blocker and if they still had elevated blood pressures, they then underwent anatomic screening and then randomization to renal denervation versus a Sham control. They then were followed for two months at which the primary endpoint was ascertained, which was a reduction in blood pressure: renal denervation versus Sham. We published that data earlier this year in the *Lancet,* demonstrating that Renal Denervation, decreased blood pressure to a greater extent than the Sham control and the data I presented at TCT, looked at these patients from two to six months, as medications were added back, to try to see if blood pressure could be further lowered and we could achieve better rates of control.

**Key Findings**

What we found is that there were less medications that needed to be added back in the renal denervation group compared to the Sham control. Why is that? Well, I think that if you think about the study design, if renal denervation lowers blood pressure relative to Sham, and in order to achieve further control, you would actually have to add less medicines to the renal denervation arm compared to the Sham arm and that's exactly what we showed. Now, one of the things you'd be wondering about those, if you add more medicines, to the Sham arm, would blood pressure be lower in that arm than the denervation arm? And in fact, what we found is that ambulatory blood pressure was the same, despite less medicines being added in the renal denervation arm, and home blood pressure, which is actually what the physicians taking care of these patients were using in order to titrate their medicines, was lower than the denervation arm compared to Sham, despite the fact that more medicines were added back in the Sham arm. So, it does suggest there's a treatment effect that's persistent with renal denervation. The one other point I'd like to add is that in terms of the specific medications that were added, remember these patients were already on three medications, so, this was a fourth line agent being added at step one of the programme. And that medicine was spironolactone. What we showed is that spironolactone was added back to a greater extent and at higher doses in the Sham arm, compared to the denervation arm, suggesting again, that there was a persistent benefit in terms of blood pressure lowering with renal denervation compared with Sham.

**Which Patients Would Benefit from RDN?**

The Holy Grail question here is, who should we do renal denervation at? And this is an important question because it's an invasive procedure. I think the key point here is that we know medications work and we know lifestyle modification can work, but it doesn't always work. And in many patients, they can't adhere to these regiments, or they perhaps don't want to. And I think it's for those patients that renal denervation offers promise. We've shown through multiple studies that renal denervation can work in more controlled versions of hypertension. Also less controlled, such as resistant hypertension as shown in this study. And so the real question is, is if patients have had a legitimate effort to control their blood pressure with lifestyles and traditional medications, the way we'd like them to be citrated, and they still have elevated blood pressure, then they would be great candidates for renal denervation in my opinion. If, denervation can be proven to be safe over the long period.

**Take home Messages**

My take home messages would be number one: we know renal denervation can lower blood pressure compared to a Sham procedure. We know that it's part of an armamentarium that includes lifestyle and medications, and it can be additive in this regard. And finally, that at least out to six months from these data, the effect does appear to be durable. So, with those three things in mind, there does appear to be promise for this technology going forward.

**Next Steps**

The next steps here really relate to longer-term follow-up of these randomised trials, additionally, larger series of patients to be able to determine that these benefits can be durable over time and can be safe over time. Once we have those established. I do think that we're going to start seeing renal denervation being used in clinical practice.