Title: AHA 23: 3 Trials That Will Change My Practice
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Dr Purvi Parwani

"Hi. My name is Dr. Purvi Parwani. I'm a cardiologist and a multimodality imager at Loma Linda, California, and I'm at AHA 23 ready to present to you the three most fascinating trials that I have found that are not that much into the media and I wanted to tell you about because it really impacts my clinical practice.

So the first trial that I have picked for you is the POP HT trial. And it stands for the Physician Optimised Postpartum Hypertension Treatment. So we know that hypertensive disorders of pregnancy impact almost 10% of the women worldwide. 33% of the women, go on, these women with hypertensive disorders, they go on to develop chronic hypertension within ten years of pregnancy.

Now, during pregnancy, the heart also remodels to cope up with the additional volume that it has accumulated during pregnancy and it undergoes severe changes if the blood pressure is high, postpartum period is actually very crucial for that reverse remodeling to happen within the six weeks of giving birth. And unfortunately, if the blood pressure remains high, this remodeling is interrupted and hence this trial was very meaningful the way it was designed.

So this was a randomized control trial of 222 women 18 years or older. Almost 60% of the women had preeclampsia, 40% had gestational hypertension and they still required antihypertensives when they were being discharged from the hospital after giving birth.

So the intervention group actually received a wireless blood pressure monitor with an instruction to send daily blood pressure readings via smartphone app. And this app was then sent to the physicians who would read this blood pressure reading and then warrant the medication. If the medication change is warranted, then the physician would communicate to the participant of the trial remotely on how to adjust the medications so that their blood pressure was less than 140/90. So the primary outcome was 24 hours,

mean diastolic blood pressure at nine months postpartum, which was 71 millimeters of mercury in the intervention group compared to 76.6 in the usual care group. And the difference was around 6mm of mercury less in the intervention group. And a similar trend was observed with systolic blood pressure. At nine months, the systolic blood pressure in the intervention group was 114, and in the other group, the control group, it was 120. So again, the difference was around 6mm of mercury. Now, to remind you, this is the difference that you would see if you would take hydrochlorothiazide 12.5, a 6mm of mercury difference would be observed. So almost similar to that. Now, when the outcomes were obtained, actually just this much of difference was responsible for almost a 20% reduction in lifetime cardiovascular risk. Now, both the participants in each group, they had a similar antihypertensive treatment, and 30% of the participant at six weeks postpartum were still taking antihypertensives, which decreased to 12% by the final visit and there were no other significant differences.

So I think what was fascinating about this trial is they also published a cardiac imaging study that was published in circulation simultaneously that also showed a significant increase in the left and right ventricular systolic function, an improvement in the diastolic function in the intervention group by nine months, and was assessed by both transthoracic echocardiography as well as by cardiac MRI. So, to me, this was a very impressive study with the outcome it showed with the feedback that the physician was able to provide to these women in the very, very critical phase of their postpartum period.

The second study that I have picked up today is the CARDIA SSBP trial, which stands for the Coronary Artery Risk Development In the young Adult Salt Sensitivity of Blood Pressure. So this, again, is very applicable to any cardiologist, any internal medicine physician, to be honest, with any physician in the community or anywhere in the world because it is such a basic trial. So this was presented by Dr. Deepak Gupta at Vanderbilt. And what this trial showed is when you change the diet from a high-sodium diet to a low sodium diet, the mean difference in the systolic and diastolic blood pressure was around 8mm of mercury and 3mm of mercury. And this is again something that we can achieve with the medicines, but was achieved just with the change in the diet. And hence it is so meaningful because of its value for our patients.

So, again, the goal of this trial was to determine the effect of the high versus low sodium diet on the blood pressure in the middle-aged patients with even variable degrees of hypertension and antihypertensive use. So they enrolled around 200 patients, they had a 21-day follow-up and 65% of these patients were actually women. Patients had to be between 50 to 75 years of age and they could be normal tensive or they could have completely controlled blood pressure and they could be on less than three antihypertensive medications. So patients that had very high blood pressure or very low blood pressure, they were actually excluded from the trial. And as I mentioned the trial, what it showed was a median 7mm of mercury reduction in 24 hours ambulatory blood pressure with a low sodium diet, which was 500mg per day compared to the high sodium diet, which, of course, did not result in the outcome. So what was important to note was that the decrease in the blood pressure was consistent amongst all the patients, regardless of whatever antihypertensive status they had or antihypertensive medication use they had. However, when patients were salt-restricted, they had more pronounced effect when they had comorbid condition or blood pressure that was higher than 125. And this is important to remember because the Dash study, the Dash Diet trial that was originally, I think, published in 2002 there, they had excluded patients with any hypertensive medication use. So I think that this study kind of extended the findings from that study. I think the big limitation of this trial was the short-term follow-up which was a short duration of the intervention. They put the patient in metabolic kitchen and that ensured that these patients were getting low versus high sodium diet. So we don't know what happens if you get this same diet with low versus high salt at a longer period.

The third study that I wanted to discuss, which was the CLEAR Outcome analysis that was presented by Dr. Paul Ridker and again, this was kind of an extension of, it wasn't the late-breaking trial. We know that the CLEAR Outcome study, the late breaker was presented earlier in the year at ACC and what it showed was bempidoic acid improves the long term cardiovascular outcomes and reduces the LDL cholesterol compared to placebo amongst the patients that had established ASCVD or were at high risk of it and that were intolerant to statin.

Now, there was also a metaanalysis that was presented at ACC 23 of three major randomised control trial that showed that actually the high sensitivity CRP was associated with 30% increase in the relative risk of cardiovascular events. This CLEAR outcome analysis that was presented at present AHA, it was kind of the extension further of this trial where they demonstrated the high sensitivity CRP was a very powerful predictor of future cardiovascular risk, particularly for the patients that are included in the trial but perhaps similar patients in the community as well. And I think this is very meaningful because we have always wondered what is powerful LDL, whether it is LDL or high-sensitivity CRP.

So in this trial, what investigators wanted to assess was the value of baseline CRP, high sensitivity CRP and LDL for the future predictor of the cardiovascular risk, particularly in the population that was not receiving any statin therapy and was intolerant to statin. So what they did was they compared the quarantile of increasing baseline CRP level and the LDL level for the risk of composite endpoint outcomes which was basically all the MACE, the myocardial infarction, the stroke, the coronary revascularization as well as the overall cardiovascular death. So when they compared the highest and the lowest quartile, the results suggested that was a high sensitivity CRP that was more significantly associated with increased risk of composite endpoints for all these cardiovascular outcome and actually this effect was greater than that that we see with LDL cholesterol. So bempidoic acid was associated with quite a bit of reduction in high-sensitivity CRP I think around 22% and then 21% reduction in the LDL cholesterol at six months and it also had consistent efficacy for all the major events across all the quadriles of both high-sensitivity troponin and LDL. However, this effect was larger with high-sensitivity troponin.

So again, the question that arises there that what are we actually going to be chasing in future? Are we going to see more data emerge for high-sensitivity troponin? We have seen some trials for colchicine that had a very powerful data. And is this going to translate into something different? Only time will tell. But wrapping up from AHA 23. This is Purvi Parwani. Thank you very much for listening."