**Title: ACC 23: Statins to Protect Heart During Cancer Treatment: The STOP-CA Trial**

**Participants: Dr Marielle Scherrer-Crosbie**

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**Dr Marielle Scherrer-Crosbie**

"- I'm Dr. Marielle Sherrer-Crosbie, and I'm a professor of medicine and the director of the echocardiography lab at the hospital of the University of Pennsylvania in Philadelphia. I'm very pleased to talk to you about our trial, the STOP-CA trial, which I have co-led with my co-PI, Dr. Tom Neilan from the Mass General Hospital in Boston.

What unmet need does the STOP-CA Trial address?

We were interested in patients with cancer. This is a growing field, the cardio-oncology. There's many survivors of cancer. And so now we're worried about the possibility of heart failure in these patients, especially in a population of patients who are treated with anthracyclines. Anthracyclines are a very commonly used anti-cancer drug. There's more than 1 million people treated with anthracyclines per year, and they have a cardiotoxic effect, and they can lead to left ventricular and cardiac dysfunction, and then in some cases symptomatic heart failure, which we want to avoid. And we were interested in particular in patients with lymphoma. Lymphoma is a reasonably common type of cancer, 90,000 per year in the US. They have a high survival rate, and they also have, unfortunately, a high rate of heart failure. So we wanted to test whether statin therapy would be able to decrease this cardiotoxicity and the rate of cardiac dysfunction in those patients. There are some experimental arguments and some retrospective studies that showed that. And when we started the trial, there was also one small prospective trial.

What is the existing evidence supporting the use of statins in this specific patient population?

So as I mentioned there are some animal studies that show, you know, that statins can decrease the toxicity of anthracyclines. There are some retrospective studies that show that patients who were on statins had less heart failure than patients who were not. And then at the time that we started, there was this small prospective trial that enrolled 40 patients, and that was very encouraging.

What is the trial design, patient population and outcome measures?

So we enrolled patients, as I was mentioning, with lymphoma, newly diagnosed lymphoma that were scheduled to be treated with anthracyclines. And we basically were looking to see if those patients, when they were randomised to atorvastatin 40 milligrammes daily for a year would develop less cardiac dysfunction. And the way we define cardiac dysfunction was a decrease of more than 10 points, 10 points or more in the left ventricular ejection fraction to less than 55%. So we wanted to compare the proportion of patients in the group treated by atorvastatin to the proportion of patients in the group treated with placebo who reached this degree of cardiac dysfunction. The key findings was that the proportion of patients treated with atorvastatin who reached the level of cardiac dysfunction that we were looking for was 9%. And in the placebo group there were 22% of patients who reached that point. So it was highly significant. And another way of saying it is that the patients on the placebo group had a nearly three-fold increased odds of getting cardiac dysfunction than the patients on the atorvastatin group.

What are the implications for patient care?

So we did a few more analysis in the subgroups where we had pre-specified subgroups that we wanted to analyse. And we could say that women and older patients, patients who had more than, you know, were more than 52 years of age, which was our median age, patients who had high doses of anthracycline, more than 250 milligramme per square metre. Our median dose was 300, so it was high as we know in lymphoma, and obese patients. They all benefited from atorvastatin. So that's the population that we really think can benefit from atorvastatin. Another important point is that the side effects were not higher in the atorvastatin group than in the placebo group, especially muscle pains, myositis which was non-existent, and liver enzyme elevations.

So in conclusion, I think that, you know, what we have shown is that in patients with lymphoma treated with anthracycline, especially in those patients in whom we're worried about cardiac dysfunction because they have high dose of anthracycline or they're older or they're obese, statin, atorvastatin 40 milligramme per day for a year seems to decrease the rate of cardiac dysfunction.

What further research is needed?

This is a study that has taken left ventricular ejection fraction as a surrogate for heart failure. I mean, we have taken this degree of decrease in LVEF because we know it's correlated with the occurrence of heart failure, but it's not a hard point. It's not heart failure itself. We would have needed many, many more patients for that. And also the racial balance of patients was not reached as we would have wanted to. So that's another, you know, area where we don't know what the results would be. And we can only speak at this point of patients with lymphoma. We do not know if we can extrapolate to other cancers.”