Video Transcript: Excellence in Hypertension Award Lecturer Joey Granger, PhD
Published: September 10, 2022

**Barbara Alexander, PhD** - Welcome. We are coming to you today from the Hypertension Council meeting of the American Heart Association. And my name is Barbara Alexander and I have the pleasure today of introducing you to Dr. Joey Granger. Dr. Granger will be the recipient this year of the Excellence in Hypertension and Research award from the Hypertension Council of the American Heart Association. And I'm going to interview him today about this wonderful honor. Welcome Dr. Joey Granger. So Joey, you received your PhD in physiology from the University of Mississippi Medical Center. What led to your interest in science and how did you wind up in physiology in Jackson, Mississippi?

**Joey Granger, PhD** - Well, I've been very fortunate in that I had two older brothers who entered the field of physiology and both of 'em received their PhD at Jackson, Mississippi at the University of Mississippi Medical Center in the department of physiology where the world-renowned physiologist, Dr. Arthur Guyton was Chairman. And as a undergraduate student, I had opportunities every summer to work in the lab of expert physiologists. And it was during that time I really became interested in biomedical research and specifically physiology.

**Barbara Alexander, PhD** - Thank you, Joey. So tell me a little bit about your research and how you became interested in the area of preeclampsia.

**Joey Granger, PhD** - Yeah, so for the past 20 years, my lab is focused on preeclampsia. Over the last four 40 years, my interest has been in hypertension in general, but 20 years ago I've became interested in the specific form of hypertension that occurs in pregnant women. And the preeclampsia is again, a pregnancy specific disorder that occurs in typically the third trimester and it's associated with hypertension, proteinuria, and other dysfunctions of various organs in the body. And I became interested in preeclampsia 'cause my work prior to that was focusing on the role of endothelial factors in the regulation of blood pressure and hypertension. And an interesting review came out with a concept that preeclampsia is a disorder of endothelial dysfunction. And at that point in time, I started to focus on preeclampsia with a specific purpose to understand the pathophysiology of the disease.

**Barbara Alexander, PhD** - Can you discuss what led you to development of the reduced uterine profusion pressure, or the RUPP model? The model that really has kind of started this whole field of inquiry for you in preeclampsia?

**Joey Granger, PhD** - Yeah, so, one of the prevailing theories when I got into the preeclampsia research was that placental ischemia was an important initiating factor that resulted in the syndrome of preeclampsia. Now, while there was a lot of correlational data linking placental ischemia with the maternal syndrome, there was very little cause-and-effect evidence. And so we decided to produce a model of placental ischemia by reducing profusion of the utero placental unit. And we found that in doing that, the animal model that we developed mimic many of the characteristics that you see in women with preeclampsia. And we first used the model to understand the pathophysiology, the factors that link placenta ischemia with the maternal and cardiovascular dysfunction. And then later we started to focus on potential treatments for preeclampsia by giving these, treating of animals with various compounds that could potentially be used for the treatment of preeclampsia in women.

**Barbara Alexander, PhD** - So where do you see the field of preeclampsia research headed? What do you think are the challenges in this field and the benefits clinically that may exist?

**Joey Granger, PhD** - Mm hmm. You know, I think over the last decade, 10 to 15 years actually, there's been tremendous progress in our understanding of the pathophysiology of preeclampsia. Unfortunately, very little of that has been translated into the development of it for treatment of women with preeclampsia. And of course that's a major challenging, challenge, and coming up with a therapeutic that can be beneficial to the mother and not harmful to the baby. However, there's been some exciting work that's being done now that a lot of these compounds can be limited to the maternal circulatory compartment and not crossing the placenta. So some of these compounds can be used to treat preeclampsia without having adverse effects. So hopefully with some of the research that's ongoing now, and has been done over the last 10 years, we ultimately will come up with a treatment for preeclampsia which, I should say now there's no treatment for preeclampsia, but early delivery of the fetus and the, more importantly, the placenta.

**Barbara Alexander, PhD** - So Joey, you've been an outstanding researcher in the field of preeclampsia. And what many people may not realize is that you've also been an incredible mentor. You've actually built a set of investigators of a lot of your colleagues and former trainees at the University of Mississippi Medical Center that really are vested in this area of preeclampsia research. So what would you suggest for others that might be interested, say, early career investigators moving forward into the field of preeclampsia research? Do you have any advice to give them?

**Joey Granger, PhD** - Well, the preeclampsia field is certainly an exciting field of research to be in. And one major reason is that there's a major unmet need in that there's a lack of treatment for preeclampsia. In addition, even though we've gained a lot of knowledge about the links between placental ischemia and maternal cardiovascular abnormalities, there's still a lot of unanswered questions that exist. So if I was a young cardiovascular physiologist I would think this particular field would be a field that could be very fruitful not only as a basic scientist, but fruitful hopefully, in that we can eventually translate some of our findings into improved care of women who have preeclampsia.

**Barbara Alexander, PhD** - Thank you Joey. It's been a delight talking with you this afternoon. Again, I cannot congratulate you enough on the, as being one of the recipients of this year's Excellence in Hypertension Research award from the American Heart Association and wish you the best with the rest of the meeting and the remainder of your career.