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Cardio-Obstetrics: Taking Better Care of Our Pregnant & Postpartum Patients

Dr. Chapa:
Cardiovascular disease is currently the leading cause of death for pregnant and postpartum women in the United States, and from a global perspective, hypertensive complications during pregnancy result in 50,000 maternal deaths each and every year. This, along with the increasing risks and rates of peripartum cardiomyopathy, is why a new subspecialty of cardiology is so very needed. So what exactly is cardio-obstetrics? And how is it helping us provide better care for our pregnant and postpartum patients?

Welcome to *Heart Matters* on ReachMD. I'm Dr. Hector Chapa. And joining me to talk about this emerging subspecialty of cardio-obstetrics are Drs. Erin Michos and Dr. Anum Minhas. Dr. Michos is Associate Professor of Medicine and the Director of Women's Cardiovascular Health at Johns Hopkins School of Medicine. Dr. Michos, welcome to the program.

Dr. Michos:
Thank you so much for having me here today.

Dr. Chapa:
And we don't want to forget Dr. Minhas. Dr. Minhas is a Chief Cardiology Fellow at Johns Hopkins School of Medicine. Dr. Minhas, to you too, welcome to the program, and thanks for joining us today.

Dr. Minhas:
Thank you, looking forward to having this conversation with you today.

Dr. Chapa:
Well to start off with some background, Dr. Michos, can you explain the cardiovascular issues that are prevalent among pregnant and postpartum women that have created the need for this new subspecialty?

Dr. Michos:
Yes. So as you alluded to, maternal mortality is rising in the United States, and cardiovascular disease is the leading cause of maternal mortality. And we think that up to two-thirds of pregnancy-related deaths that were due to cardiovascular disease are considered preventable, and some of these deaths are caused by the provider or health system factors that could lead to missed or delayed diagnoses, delay of effective treatments, or poor communication for providers. And at least in one study among pregnant women with known cardiovascular disease, almost half of all serious cardiac events were related to factors such as lack of adequate preconception counseling, inappropriate treatment, delay in treatment, late recognition of cardiac deterioration, and failure to identify cardiac condition as high risk, and so that's why this is so important that we have this new growing field of cardio-obstetrics, which is a subspecialty within adult cardiology that focuses on the management of women who either have cardiovascular disease or high risk for heart disease and are considering pregnancy or have become pregnant.

Dr. Chapa:
Now as an OB/GYN, I have to say, Dr. Michos, you've touched on something I just could not validate anymore. I mean, all of that is incredibly true, and the need is quite apparent. And as I understand it, Dr. Minhas, you and Dr. Michos created the first cardio-obstetrics training program at Johns Hopkins, so you need to be recognized for that. Congratulations. But what were some of the specific gaps that you noticed in traditional cardiovascular disease training in cardiology? And why did you want to address those in this new program?

Dr. Minhas:
Yeah, so the way cardiovascular disease programming recommendations are made right now for fellows training in cardiology are by COCATS criteria, or the accreditation body for cardiology fellowship programs, and the current COCATS criteria do not mention cardio-obstetrics at all, so there's actually no expectation that cardio-obstetrics be included within general cardiology fellowship training as it stands. And as you mentioned, there really are not many options to do this as a subspecialty training program either. In fact, when I've looked this up, I have yet to find a single document that outlines a clear curriculum for one who might be interested in pursuing this track. So some of the things notably that are missing, as you know as an OB/GYN, when we are called to see a patient on the labor and delivery service who comes in with a cardiovascular problem, we're thinking not just about the mother but also the baby, also the hemodynamic changes that might be occurring, for instance, at the time of delivery, and then breastfeeding and how the medications we use could be affecting the child by passing through breast milk. So all of those things are actually not included in traditional cardiology training except by what you might just happen to learn when you're rotating through and seeing patients here and there but in no sort of structured way.

Dr. Chapa:
Wow. So circling back to you, Dr. Michos, who should actually be part of this cardio-obstetrics team? Obviously, the cardio-obstetrics trained physician, but who else is involved? And how does this multidisciplinary care team actually work in true practice?

Dr. Michos:
Yeah, so multidisciplinary collaborative teams have been shown to improve outcomes in cardiac patients during pregnancy, and so we encourage cardiovascular fellows in training who are interested in cardio-obstetrics to have the opportunity to participate and contribute to pregnancy heart teams. And so part of this multidisciplinary approach includes specialties related to obstetrics, maternal-fetal medicine, and general obstetrics as well as cardiac anesthesia and obstetrics anesthesia. There's obviously cardiac subspecialties of adult congenital heart disease, heart failure, and cardiac surgery, as well as neonatology, social work, genetics, so it's really important that we have a multidisciplinary team involved in these patients, and fellows should get exposure to that.

Dr. Chapa:
Dr. Michos, I completely agree. I mean, this is a team sport, medicine is, and for a long time we all lived in our individual silos, but those days are gone because patients paid the price for that. So once again, I'm very thankful for this kind of concept.

For those of you just joining us, you're listening to *Heart Matters* on ReachMD. I'm Dr. Hector Chapa, and I'm speaking with Drs. Erin Michos and Dr. Anum Minhas about this emerging cardio-obstetrics subspecialty.

Now Dr. Minhas, if we look at the real world implementation of this new subspecialty, cardio-obstetrics, what are some challenges that you see in getting this off the ground and actually implemented across the states?

Dr. Minhas:
So the reality is that cardio-obstetrics is a fairly new specialty, not only in the United States but globally, and because it is a fairly new area, at least for cardiologists—I know as obstetricians you've probably been thinking about it forever—but as cardiologists, it's really just come to the forefront recently. There may be institutions where there is no existing cardio-obstetrics program. So even at Hopkins, when I first became interested in this area, we did not have a dedicated cardio-obstetrics program. So there are institutions where there might be women's health programs but not necessarily cardio-obstetrics programs, so I think for a fellow or a trainee who's looking to go

into this area, the first challenge then is, well, if there's no program, then you have to work on creating a program and building those relationships with the obstetrics team, with the maternal-fetal medicine team, because that would be the core of what you do is working in collaboration with our colleagues in OB.

Dr. Chapa:
Yeah, and unfortunately, we do need much more of these types of practices and these subspecialists throughout the country. And in that same vein, Dr. Michos, how do you think we can increase the awareness and the exposure of cardio-obstetrics and just get more programs out there in the field?

Dr. Michos:
Right. So again, I think it's important to outline the competencies that should be achieved in cardiology training related to this. I would hope that our trainees would understand how to perform preconception risk stratifications using established tools and risk scores, such as the modified World Health Organization or the CARPREG II classification schemes. They should understand how to optimize cardiovascular health prior to pregnancy. They should understand how to determine appropriate antenatal monitoring and delivery plan based on the patient's cardiovascular complexity in conjunction with the obstetrical team. They should understand how to identify and treat cardiovascular complications that arise during pregnancy and the postpartum period that we commonly refer to as the "fourth trimester." So training competency should really aim to educate trainees on also common adverse outcomes in pregnancy that could affect the cardiovascular system, such as postpartum hemorrhage.

Dr. Chapa:
I'm going to tell you something, be very honest in transparency. I know this will just make you cringe. But historically, in obstetrics, we were taught the cure for preeclampsia, obviously a cardiovascular manifestation, was delivery. We now know they are not cured. That's a marker of later cardiovascular disease. So I see these patients. I see you both and others as being that link in this chain that once they deliver with preeclampsia or severe preeclampsia or preeclampsia with severe features, then we would shift them over to cardio-obstetrics to give them this roadmap to try to prevent them from having this later cardiovascular disease that they have already proven themselves to be at risk for. Does that make sense?

Dr. Michos:
Yes, absolutely. It's really important because not only are we talking about during pregnancy and postpartum, but adverse pregnancy outcomes heighten the risk of cardiovascular complications long-term, even more than a decade out from the index pregnancy, and understanding how that impacts long-term cardiovascular risk is so important.

Dr. Chapa:
Exactly. And as we come to a close, are there any final thoughts that you would like to share with our listeners? Dr. Minhas, I'll start with you.

Dr. Minhas:
Yeah, so I think that it is important for us to realize that the rates of cardiovascular disease and complications during pregnancy are likely going to continue to rise. As the population of mothers who are pregnant is rising nationally and perhaps internationally, it's more likely that women will have cardiovascular disease that's preexisting by the time that they are pregnant. We're doing such a great job now with our adult congenital heart disease patients that many of those women are now making it to childbearing age and successfully able to get pregnant and have children, so that's another population where we're going to expect to see a rise in cardiac disease during pregnancy. And then lastly, there's an increasing prevalence of cardiometabolic disorders, such as hypertension and obesity, across the country and really across the world. And so for all of these various reasons, I think it's going to be even more important in the next decades to come that we have providers who are comfortable and specialized in this area to take care of our patients.

Dr. Chapa:

Absolutely. Thanks for that, and I completely agree. And Dr. Michos, I'll give you the final word.

Dr. Michos:
Oh, well, I completely agree. One of the biggest risk factors for adverse pregnancy outcomes is entering pregnancy in poor cardiovascular health, so we really need to focus on upstream contributors, social determinants of health, to support young women before, during, and after pregnancy because gestational cardiovascular health influences the offspring's cardiovascular health. And part of our cardiovascular cardio-obstetrics program is not only clinical training, but really a focus on education and research and basic science; translational research and personalized medicine really offer the opportunity to elucidate disease mechanisms and impact pregnancy-related cardiovascular disease on long-term health.

Dr. Chapa:
Absolutely wonderful. Well, it's evident from our discussion today that ensuring the health of our pregnant and postpartum patients is absolutely paramount. So I want to thank my guests, Dr. Erin Michos and Dr. Anum Minhas, for joining me to discuss the role of cardio-obstetrics and helping us achieve that goal. Dr. Michos, Dr. Minhas, it was a pleasure speaking with you both today.

Dr. Michos:
Thank you so much for having us on your program.

Dr. Minhas:
Thank you.

Dr. Chapa:
For ReachMD, I'm Dr. Hector Chapa. To access this and other episodes in our series, visit ReachMD.com/HeartMatters, where you can Be Part of the Knowledge. Thanks for listening.