Pediatric Cardiology with Dr. Tal Gospin, MD Transcript

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Introduction to Pediatric Cardiology

Hello. Welcome to this week's episode of the Baby Manual podcast. Today, I am so excited to be talking with Dr. Tal Gospin, MD, who is a pediatric cardiologist.

Yeah, absolutely. Hi. Thank you so much for having me. And it's a pleasure to meet you and talk with you. Like you mentioned, so I am a pediatric cardiologist.

I originally grew up in the Washington DC area and have lived in Houston, Texas for just over 16 years. Also the proud mother of three. Um, and just a little bit about my background.

So how I became a pediatric heart specialist, which what a cardiologist is. So I have always loved working with children, fascinated by their growth and their development and just their interactions with everyone around them.

And when I was in pediatric training, I learned very quickly that I really, really bad at looking at ears. probably farewell as a general pediatrician.

I mean, actually, I was lucky enough as part of my pediatric training at Columbia in New York, was exposed to a very large, very robust cardiology program.

And everything we learned from the most simple to the more complicated literally just made sense to me. It was felt like it was my calling. And then shortly after, yeah, shortly, after I finished my cardiology training, Texas Children's here in Houston, I actually founded Pediatric Cardiology Care, which is a private medical practice serving cardiological needs for infants, children.

We actually do prenatal evaluations as well, and adolescents. and we have been in practice for a little over 10 years now. We have four office locations in the greater Houston area and every day is different, which I absolutely love.

That's really awesome. And pediatric cardiology is very different from adult cardiologist. There's just entirely different things that you work with that adult cardiologists don't and the other way around too.

Yes, absolutely. I think that we, as in the pediatric world, a certain amount of our focus is on congenital heart disease. heart abnormalities that people are born with.

And so taking care of them is a very different animal than a lot of adult cardiologists see. Like I said, you know, we do have some crossover. We've seen, in older children, some things like hypertension and high cholesterol, but the vast majority of what we, especially for younger children and infants, is going to be related to evaluations and then some elements of congenital heart disease.

Prenatal Heart Screening and Fetal Echoes

Yeah, so a lot of things, like the shape of the heart and the sounds that the art is making. Absolutely. Awesome. Very cool. Well, maybe we can just start like at the very earliest stage of life when parents are still pregnant.

Sometimes we refer to pediatric cardiology. So maybe you could just talk a little bit about like things that might be seen on an ultrasound that. Might then prompt them to have to get a fetal echocardiogram or talk to a pediatric Cardiologist.

Absolutely. So generally speaking, you know, when we are thinking about the heart, we think about structure of the hearts, so the way that everything is connected.

We also do think of about electricity of heart so that heart beat itself. There are certainly some risk factors for women who are pregnant who might get referrals for a fetal echo, which is a focused ultrasound looking primarily at the baby's heart.

And we also look at some other vessels to kind get a general sense of the overall circulation. And so typically the things that may come up on routine ultrasounds, so if there is a size discrepancy between the left and the right sides of heart, typically they should be fairly symmetric.

The other thing is looking at the heart valves and connections of big vessels that come out of and any concerns. Sometimes, honestly, there's a lot of referrals for just can't see things very well.

And so that, you know, that in itself is we want to make sure that we can see everything that that should be able to see. Obviously, prenatal scans, their limitations, baby is just very small and sometimes laying in a weird way, moving around, they actually can be some of the most challenging in a good way because they're never the same literally, but we can identify certain risk factors or things that need to be even evaluated more urgently after birth.

And one of those tricky things about prenatal scans is there are actually some structures with the heart that are normal and actually essential during pregnancy.

So there is a natural opening between the top chambers of the hear and also an extra vessel that connects the two big arteries that come out. Those are actually things that have to be there during the pregnancy because the circulation is different.

The baby relies on the mom for oxygen and so literally things flow differently. Those are structures that should be there and should close and go away after the baby is born.

There are a lot variety of factors that may influence those transitions happening. The other common thing that we'll see prenatally that I think you and I talked about the other day was when we see either bright spots on one of the valves, specifically on the left side, it's very common.

And most of the time, those end up not being anything. Typically, what we would recommend is depending on, we want to make sure the valve is working well.

So the valves in the heart are like little doors that kind of open and close. And so we wanna make that they're doing their job to push all the blood flow the right way.

Those are very common things that come up. In our office, do fetal echoes as well, and so we'll have a lot of, you know, just counseling to help the families kind of understand if there is something that we are concerned about or can't see very well and some of it does have to be evaluated after the baby comes.

And I've heard that bright spot called an ecogenic focus, and that just sounds a lot scarier to parents too, because it's just such a technical term, but yeah, it really just something that's a little brighter, might mean something, or might not mean anything.

Many times it doesn't, unless we're seeing other concerns as well. Awesome. And then when the baby is first born, like you had mentioned, so the circulation is very different when they're on the inside.

All their oxygen is just from mom. So every baby has born kind of a grayish blue color because the oxygen in their blood is supposed to be like 65 to 75 for that minute.

But then as the babies take some breaths and, you know, pinks up a bit, then gets better. Then when their 24 hours old, we do a CCHD screening, which is for critical congenital heart disease.

So every baby has a CCHD screening right before they leave the hospital to check for really critical things. All I know is when to send somebody on to the cardiologist.

So if they fail that test, then they get sent on. What sorts of things do you see with that or what could be reasons that someone would fail? just for those who don't know what that screening involves.

So the important thing is that it's actually, number one, not done too early. Like I mentioned, there's that extra vessel that connects the two big arteries that actually needs time to close.

And really we want to make sure that as that vessel is closing, it is not causing any issues with it, meaning that's it not pulling any tissue from the other arteries, that historically was connecting.

And there are also other types of more complex congenital heart disease that actually rely on that vessel staying open. Going back to the screening, so the way that the screen is performed is that they take a pulse oximeter, a saturation monitor to measure the oxygen levels, and typically it should be done in the right hand and either one of the feet.

And the main things that they're looking for, and it's really, really important that people understand that this type of screening is not meant to screen for all congenital heart disease.

That can mean literally a hundred thousand different things. What we are trying to identify are any congeneral heart defects that would cause the oxygen level to be lower than normal and also any anatomy that depends on, again, that vessel being open.

So we're checking for good oxygen levels both in the hand and the feet, but also making sure that we have a good pulse in foot.

Newborn CCHD Screening and Murmurs

And we'll get into murmurs and importance of a really good exam and all that stuff because it really, really goes hand in hand. So a lot of times if there's either a difference in a hand or foot or an overall lower oxygen level, then that would kind of prompt a more urgent evaluation and more likely than not an echocardiograms or an ultrasound to actually take a look at that baby's heart.

And that should ideally be done immediately, right? They should be transferred maybe to a hospital that has a pediatric cardiologist. I think a lot, you know, really depends on also how the baby looks.

So there are some things, I mean, there a a of actually very complicated congenital hair issues that actually the babies do just fine. They're clinically well appearing, they're breathing comfortably, and so many times I think just to have a more definitive answer would be helpful depending on where the baby is born to be more urgent.

And then what sort of murmurs get referred to you? I know that it's normal for babies to have a murmur as that big vessel is closing. So almost every baby at some point in the hospital has a murmer in that first one to three days of life, but then that goes away.

And sometimes we hear other murmures, even as early as infancy. Yeah, absolutely. So a lot of people, we first like to start when we do a a education in our office about what is a murmur.

When we are examining a baby, meaning that we're listening with a stethoscope, typically the classic lub-dub sounds that everybody most people are familiar with.

Those are the sounds of the valves closing. And then if we hear an extra sound, many times that is what a murmur is. It's another sound. From a cardiology standpoint, we typically kind of categorize murmurs into what we call innocent murmures.

versus pathologic murmurs. And what that means is that we talk a lot, we are very descriptive in kind of how loud that extra sound is. What does it sound like?

Is it more of a flowing sound? the timing of it. And sometimes, honestly, in newborn babies, it can be really challenging because their heart rates are naturally faster.

So really listening in between those love doves and kind of where it falls is something that can helpful in trying to figure out where do we fall in those categories.

Typically, like you mentioned, right when a baby is born, there's a ton of transition that goes on. And so many times we're initially hearing that flow through that vessel that is now closing, and then that typically should go away.

There are other innocent murmurs for newborns, often that come up around, I would say on average, two to four weeks of age is a really common one. And a lot of times that's when families are going to the pediatrician, they're getting their first newborn check.

A lot if they referrals to a specialist, like our practice. Honestly, sometimes comes down to the comfort level of the primary care provider who's seeing them, but also the quality of that noise and also kind of looking at the baby as a whole.

And we talk a lot about for newborns and infants, are they feeding well? Are they breathing comfortably? And are the gaining weight? That is their role in life at that point in time.

And then, and if any of the answers to those questions are no, then we need to look into it further and make sure that there's not a heart reason why.

For a lot of those initial kind of new, what we call newborn innocent murmurs, they typically disappear. So those sounds go away, often at around two months of age or so.

But I would say, you know, just from a safety standpoint, or you know, a lot of times these types of topics make parents really, really nervous, which is understandable, you're kind of like adjusting to having a newborn, it doesn't matter if it's your first baby or your tenth, like having newborn is hard.

It's really hard and a lotta times very overwhelming. And so kind Is there something wrong with the heart? It tends to create a lot of anxiety. And so help doing some of the testing that we do, and we can talk about that in a minute, but can help give them reassurance that their heart is normal.

But at the very least, I would say if the primary care provider is Hearing something in that two-week visit might be a good idea just to revisit that at the month mark.

I know that many general pediatrician practices often will have a two week visit and then the next visit is a 2-month visit. If they're hearing something at about two weeks, it might not be at that idea to check again at one month's mark just make sure that that sound has gotten louder, again that the baby that clinically is doing well and then kind of go from there.

Sometimes we refer babies who are not gaining weight enough and if we can't explain why because they're eating enough like at least enough volume for their size sometimes that can have a cardiology reason behind it.

Yes, so there certainly can be types of congenital heart disease. Probably the most common would be like an opening or a hole typically between the bottom chambers.

That's called a VSD. A lot of times if there is an imbalance of blood flow, typically in a structurally normal heart, the right side of the heart pumps out to the lungs and the left side to heart pump out the body.

If you have an open or communication between those bottom chamber, Sometimes we like to say that blood is not a very smart organ. It goes the path of least resistance.

And so many times the pressures in the lungs and on the right side of the heart are much lower.

Office Evaluation and Common Infant Concerns

So the blood will sort of float across if they're developing an imbalance of blood flow to their lungs versus out to the body. Many times it will kind of present an Sometimes babies are breathing a little bit faster than normal.

Sometimes it can take them longer to feed because they're having to stop and take breaks and sort of catch their breath. And then that can result in they actually getting in a bit less and they are also working harder.

So they burning more calories that we're trying to get them to hold on to. It can kind of create this cyclical pattern where even though they might be taking in enough, they're actually kind of burning more than they are taking.

So many times it will go along with some other signs where we might see them breathing a little bit faster, if they see their muscles under their ribs kind pulling in a bit more, and then the weight gain, we obviously follow very closely.

But sometimes a lot of that cannot necessarily present right at birth. it's a little bit over those first few weeks when all of those transitions are going on.

And again, it can be really tricky because babies, newborn babies especially, they breathe kind of funny to begin with. So we talk to families a lot about in this first couple of weeks, you're getting to know your newborn really well.

If something seems different, if it seems off, then that might be a reason to reach out to your pediatrician and then think about whether another referral might Yeah, I always tell parents when the babies are really little like that, the only exercise they get is eating and crying.

That's how they exert themselves. So if they're doing those things and also getting really sweaty and out of breath when it's happening and it seems like they are working extra hard, that could be a reason.

There could something going on with their heart that's just making them have to work extra to pump extra blood around. Awesome. So then what sort of things do parents see when they come into the office with you?

Like, what should they expect when the walk in and what kind of testing do you do? We have, you know, I think what we consider a somewhat unique environment.

You know we are a private practice but in a very large city. We pride ourselves on our office being very comfortable. The testing that we do in our typically includes an EKG, which is a, most people know it as the test with all the stickers.

It doesn't shock the baby. Doesn't electrocute the babies. Like we get a lot of questions about, is this going to hurt them at all? Honestly, the worst part is just peeling the sticker off because they tend to be pretty sticky, but it really takes a look at the electrical rhythm that creates each heartbeat.

We can look for other features on that test to look if there are any signs of the size being abnormal, whether the heart is shifted in the chest at all, things like that.

They also then get a, we do height, weight, blood pressure, heart rate. We check their oxygen levels and then we bring them into the examination room where the cardiologist will see them.

Um, We do like a pretty thorough examination. we listen for those murmurs. One of the other things I forgot to mention about like in hospital, um, as well as, A really, really important part of the physical exam is checking for the pulses in the groin.

It might seem a little bit crude, but it's the best place to feel for a heartbeat in lower extremities, especially on chunkier babies, where you might not feel it in their feet, But you can really feel a good pulse in a crease where they're in.

where the leg starts. And so that's a really important part of what we do as well. The last component is the echocardiogram. So the ultrasound and that literally lets us look at the structure, we measure the heart size, and we look all the valves, check that the flows are normal.

We have the unique ability to discuss everything in the room with the parents, sometimes not we're scanning because we want to try to get through it and some babies don't give us all that much time.

So then we kind of like let them get the baby dressed and then go over everything with a lot of drawings in our office because a of it is really understanding kind the anatomy and what it we are looking at if there's anything that we need to follow and kind things that they should be looking for at home.

And then do you also sometimes start children on medications? Um, it's actually fairly rare. So the, I mean, we are an outpatient pediatric cardiology practice.

The main things that we would consider medications for, so, um, heart rhythm abnormalities. And that's. That does come up sometimes in that newborn period or kind of first year, where the rates are abnormally fast.

and many times if we see any risk factors on the EKG, we'll talk to families about, you know, the main things to look out for from a heart rhythm standpoint would be like inconsolable fussiness.

So, a lot of times, like you mentioned, babies cry, they cry a LOT and it can be totally normal. But if, counsel our, you know, and educate our families that if they don't seem to be responding to their normal things, getting them changed, making sure they're not cold, they are tired if their hungry and things like that, but they really seem not themselves, that can be an indication.

And I would say many times first step is to go see their primary care doctor, unless they have like a known rhythm thing, in which case they call us. Many times for newborns who have not been diagnosed, we want to make sure that they don't have any fever or illness or other things that might be causing their heart rate to be that fast.

So that may be one indication for medication to help kind of slow things down.

Medications, Breath-Holding Spells, and Closing Remarks

And many times, for babies with heart rhythm issues, typically we'll use medications Many times for the first year of life, unless they have recurrence of those rhythm issues, in which case we might extend that longer, many times the rhythm problems that we see in the 1st 3 months of live typically, those often will kind of quiet down and go away.

They sometimes can come back many time in like elementary age and even teen years, but many of the times kids are asymptomatic and when they're older, it's a little easier because they can tell you the stuff that's going on.

What they are feeling, yeah. Yeah, what they were feeling because, they know. The other things, so for some of our congenital heart disease patients, if they, you know, in the bucket of patients that we are fairly confident they are going to need some sort of surgery or intervention.

Sometimes we will start them on medications to help them breathe a little bit more comfortably. Many times we use what are called diuretics, so medicines that can help him pee off some of that extra fluid that might be kind of building up in the lungs.

But those are really the main ones. And many times those are temporary until they get referred for whatever surgical repair or surgery they have. And then many time we're able to successfully wean them off of those.

I will say a really common topic that we hear of and get refered for in toddlers is breath holding. Oh, yes. Those are no fun. Mine does that. Not awesome.

It is one of the more scary things and it's almost like the fact that they snap out of it so quickly, you're like, what just happened? And so that's a very, very common one.

We see it a lot in the like 18 months to three year range. Many times it is kind of preceded by either just significant crying, many times if they've fallen and hurt themselves, And really what it is is what we call kind of like a exaggerated vagal response.

So basically they are typically crying so hard that they literally hold their breath because they can't regain like their composure. And so the brain kind What's going on?

Help me." And so many times they will actually faint. They get this horrendous dark gray-purple look to them. And then typically, as soon as they fall or pass out, then their body naturally starts breathing.

So they regain their… And it's like they act as if nothing happened. It's just nuts. So we get a lot of referrals for that to say, Hey, do we need to check the heart like my, you know, my one and a half year old just like turned purple.

And most of the time, again, we do look, typically we'll start with the EKG to make sure there's no like weird rhythm things. might be associated, but a lot of times just getting a really good history can be helpful.

And sometimes we'll do an ultrasound, sometimes, we won't if it's a very classic history. It's always so hard because the parents are trying to recount what happened.

I will even say sometimes I know it seemed like an eternity, how long were they out? And then they kind of recall and they're like, Okay, maybe it was just like 30 seconds or not even, but it feels like forever.

Right. So yeah, that's a really, really common one. Most outgrow it. And the other thing that parents can do if their child has done it, there's decent likelihood they might do it again.

If the parents or family members, whoever's taking care of them sees it happening where they are like crying real hard, If you actually blow in their face, literally get up in there face and just blow air in the face it kind of snaps them out of it.

Many times it won't go down that rabbit hole. It's very helpful. I learned that as a parent too. Yeah, it works with mine. He hasn't actually fallen yet.

They knock on wood because I blow on them if I need to. Awesome. Well, great. Thank you so much for talking to me today. This sounds really awesome. I feel like parents have gotten a lot of great things that they can look out for at home.

Oh, right! I'm so glad. A lot reassurance, a lots of things really are normal in kids. Yes. Yeah. Do you have any other sort of like closing remarks? No, not at all.

You know, we have like a a of, you know helpful information kind of on our website and, for people who are local. We'll link that in the description. Check us out and reach out.

I think that I'm a big proponent of private practices all over the nation and the world. We do some incredible things and we work with our hospital partners in the area as well.

But I've think a lot of the A lot of the kids that we see are truly amazing, even the ones who have been through a lot in their little lifetimes. They're just incredible people and definitely keep us going every day.

Yeah, definitely. Well, thank you again for the opportunity and I look forward to speaking with you. Again, I hope we can do more. Thank you so much for being here.

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You can also listen to the First Four Seasons of this podcast on your favorite podcasting platform. and you can also check out my YouTube channel. I have lots of videos and shorts that will help you feel empowered as a new parent as I talk about all the common stuff that comes up in the first couple of years of life.

Thank you so much. Have a wonderful day.