

Congenital Heart Disease and Blood Clots

Children with heart conditions are at increased risk for life-threatening blood clots according to a statement from the American Heart Association. Pediatric hematologists and cardiologists at Children's Mercy are leading a multidisciplinary effort to reduce risk of clots in this fragile population of patients.

Michael Silvey, DO is here to explain that the goal of treatment is to reduce clotting risk, without thinning blood too much and promoting bleeding.



Featured Speaker:

Michael Silvey, DO

Michael Silvey, DO, is a pediatric hematologist/oncologist and part of the pediatric hematology/oncology hospitalist team at Children's Mercy Kansas City. Dr. Silvey received his degree from the Chicago College of Osteopathic Medicine. He completed a residency in pediatrics at the University of Texas Health Science Center in San Antonio, Texas and a fellowship in pediatric hematology/oncology at Children's Mercy Kansas City. Dr. Silvey's specialty interests are in coagulation medicine, hemostasis/thrombosis and platelet function disorders.

[Learn more about Michael Silvey, DO](#)

http://www.childrensmercy.org/Clinics_and_Services/Clinics_and_Departments/doc=8284

Transcription:

Dr. Michael Smith: Our topic today is congenital heart disease and blood clots. My guest is Michael Silvey. He is a pediatric hematologist and oncologist and he is part of the hospitalist team at Children's Mercy Kansas City. Dr. Silvey, welcome to the show.

Dr. Michael Silvey: Thank you very much.

Dr. Smith: When we look at the increased risk for blood clot in kids with congenital heart disease, what type of risk are we really talking about here?

Dr. Silvey: Well, there are actually terrible risks for these patients that develop blood clots. Number one in our patients with congenital heart disease, specifically patients with single ventricle physiology, they need to undergo through multiple surgeries to correct their defect. So, when they have all these surgeries, they have a lot of time in the ICU so they are going to be monitored very closely and have central lines. And central lines have been shown to increase of risk of developing thrombus in pediatric patients. These patients have two or three surgeries, and they are going to have multiple central lines at the same time. So that's one of the big risk factors. Another risk factor is the actual surgery themselves. Sometimes during these surgeries, they create artificial shunts and they put shunts in these patients which creates low blood flow states and that's going to increase their risk, too. So, this it's probably multifactorial for these patients.

Dr. Smith: So, Children's Mercy now is taking what you guys are taking a multi-disciplinarian effort or approach to handling this in this patient population. Tell us a little bit about how you guys approach children that are at risk for the blood clots and how you treat them and what kind of improvements and outcomes you've made.

Dr. Silvey: Trying to figure out who's at risk for blood clots in pediatric patients is really hard to predict at this point in time just because we don't have any data on that just yet. So, we are really trying to focus on identifying patients who are at risk of developing blood clots. For patients on the floor, we make sure the teams are aware if they are immobilized. We either make sure that they are either moving around or they have some sort of prophylaxis, just trying to prevent them from having blood clots. So, we work with the hospitalists all the time with that. We work on our external hem/onc service as well in strategies in trying to prevent this and the ICU does a great job, too, as well, in thinking about that every time they are around. Is this patient at risk of developing a DVT? Do we need to do something about that? We work hand-in-hand with a lot of services to try to prevent the development of these blood clots.

Dr. Smith: How many patients do you guys see every year that you have to treat for blood clot or that you are following because they might be at risk?

Dr. Silvey: We see about, I would say, around seventy to eighty new blood clots a year in the hospital. Those are patients that come into the hospital admitted for blood clots or develop blood clots while they are in the hospital. And, over the past three or four years we keep on seeing those numbers slowly increasing over time.

Dr. Smith: So, here, Dr. Silvey, obviously, this is a serious complication for these children and we definitely want to identify them. Prevent the clot in first place but if they get it, it can have horrible consequences in this patient population, right? Where do you see the future of this going? Are there any new treatments, new screening tools out there? Where does Children's Mercy kind of stand as an innovator in this?

Dr. Silvey: The biggest question we really need to ask is, what puts these patients at risk of developing blood clots? And, again, like I said, there is really no data out there. You mentioned a screening tool. We don't have a screening tool right now. One of the things that we have done is, we've actually partnered up with the Children's Hospital of Los Angeles, The Children's Hospital of Colorado and the Children's Hospital of Orange County and we are part of what's called "The Children's Hospital Acquired Thrombosis Registry" or the "CHAT registry". And what we are doing is right now we are looking retrospectively at patients who did develop blood clots in the hospital and try to identify specific certain markers in the central line infections, surgeries, what types of surgeries, What could have increased the risk of developing blood clots. And once we have collected enough patient data, hopefully, we'll be able to develop a nice screening tool to help try prove and see, okay. This patient had surgery this date and had a central line on this date. This patient is at risk of developing clots versus another different type of patient. We are partnering up with them to kind of help develop this screening tool and, hopefully, use that prospectively to see this is what we really need to do for these patients.

Dr. Smith: When you are able to put all this together, you'll be able to review kind of what that patient has gone through. Maybe you end up giving them a number. This person's at "X" risk for a blood clot

because they've gone through "X: number of things, procedures, what is it. And then, you can start laying out preventative care, right?. Maybe in some patients it's as simple as being more mobile and others it's actual medicine. So, that's kind of where you are moving with this type of data, correct?

Dr. Silvey: Yes. We are trying to find the best way to screen this patient's and say, "Okay. So, this patient cannot get out of bed, so let's go ahead and put the zero compressive devices on their legs to try and prevent a lower extremity DVT. Okay. This patient probably needs to be on some sort chemical prophylaxis, so we'll start them on some sort of anti-coagulation prop before they develop a blood clot."

Dr. Smith: As all this data is being gathered right now, how far away do you think you are at Children's Mercy is from kind of developing a nice screening survey of what a patient's gone through to predict risk?

Dr. Silvey: Hopefully, over the next couple of years, we'll be able to develop the tool. It does take a lot time to collect all this data because again in this retrospectively we have to have, again, enough manpower to do it--to look back through all these patient charts. So, hopefully, within the next couple of two or three years, we'll be able to kind of develop this tool and be able to utilize it.

Dr. Smith: Got you. What great work that you are doing, Dr. Silvey. I want to thank you for working with Children's Mercy on this incredibly important issue. Good luck to developing that screening tool and thanks for coming on this show this morning. You are listening to Transformational Pediatrics with Children's Mercy Kansas City. For more information, you go to: www.childrensmercy.org. That's www.childrensmercy.org. I'm Dr. Mike Smith. Thanks for listening.

powered by:  doctor
podcasting (<http://doctorpodcasting.com>)