

Heavy Menstrual Bleeding in Pediatric and Adolescent Patients, PHO Perspective - Pediatric Grand Rounds-5-15-2026-Meeting Recording

May 15, 2026, 12:30PM

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● **Calderon, Delia** started transcription



Ranch, Daniel 0:07

All right, it's 730, so we'll get started. Good morning, everybody, and thank you for attending University of Texas Health San Antonio Pediatric Grand Rounds. As you're logging on, please don't forget to mute your devices. Also, the CME participation code will be placed in the chat box periodically, so you can check there for it. Otherwise, it is that time of year again where we have our fantastic graduating fellows doing their presentations before they ride off into the next phase of life. And so I'm going to hand this over to Dr. Melissa Frei Jones to introduce our wonderful speaker.



Lehrmann, Victoria Elizabeth 0:34

Yeah.



Frei-Jones, Melissa Joy 0:43

Thank you. It's my pleasure to introduce Dr. Victoria Lehrmann. She joined us after a pediatric residency in Albuquerque, New Mexico, and is at the end of her pediatric hematology oncology fellowship. She has concentrated on, I guess, benign or classical hematology and has spent Her scholarly activity was in our hemophilia treatment center. And we are very, very happy to be able to have her join us this fall as a third hematologist, something that we've needed for a while, and we look forward to seeing her develop in that field. I will pass this off to you. This is a topic that is, I think, grown near and dear to her heart as she's worked diligently on it the past couple of years. And we're hopeful that we may be able to one day offer a women with bleeding disorders program within our institution based on her work and interest in this topic.

LE **Lehrmann, Victoria Elizabeth** 1:45

Oh, oh, thanks, Dr. Frei Jones. Yes, yes, so I'm Victoria. Thanks very much for letting me come and talk. I thought about just getting on and talking about my research because that's what I've been doing, like a lot of, for the last couple of years. And my research was specifically focused on women and girls with hemophilia A or hemophilia A carriers.

But then there was like kind of a sub focus on their experience related to heavy menstrual bleeding. And so I thought about doing that, but then it seemed more maybe fruitful or helpful for other people potentially to take a broader scope and talk just about heavy menstrual bleeding in general in our pediatric and kind of AYA or adolescent young adult population. And then how we might approach that and things like that. So I was

kind of gearing it towards Gen Peds, like general pediatrics and maybe like trainees, but that Dr. Ranch just said that he has his, one of his lovely dialysis patients has been struggling with it too. So I think everybody can probably get something out of it, hopefully. So I don't have any disclosures. The goals for today is to define kind of normal versus abnormal menstrual bleeding because like

what even is normal or abnormal. Recognize red flags, suggesting that there may or may not be an underlying bleeding disorder. Review some common kind of hematologic causes of heavy menstrual bleeding. Discuss diagnostic evaluation and laboratory workup for this issue. And then review a little bit about acute and chronic management, just touch on those things.

and talk about kind of the multidisciplinary approach to care that these patients can require. I also, one of my big goals was to provide just access to some validated tools to help out with the evaluation of heavy menstrual bleeding, because those are things that I learned in fellowship that I was like, man, I wish I'd had before I came here. So

So those are some other things I'm hoping that you guys are able to get out of it today.

So why do we care? Why does it matter? So aside from the fact that like 50% of the population would potentially have that possibility to have this be an issue for them, it is one of the most common gynecologic complaints in adolescent patients. And it can be a first manifestation or

almost even like an only manifestation, but still severe, of an inherited bleeding

disorder can tell us that that's what's going on. So delayed diagnosis of this issue can impact a patient's quality of life, in the pediatric or AYA world, their school attendance, they can develop iron deficiency and anemia and so quality related to that.

and then also can like strongly affect their future reproductive health, which is a thing that lots of folks are very concerned about. So I thought I would kind of give hopefully some evidence-based practice information and then kind of sprinkle in just what

just practice things that I have seen and learned over the past few years. And I'm sure that that will change as I move through into my career. But I wanted to focus on like peas and then also the gynecologists. The family medicine folks have their own like series of algorithms and things like that, but it's pretty similar to both of these. But for us, I think

looking at the GMA Pediatrics, one of their big articles that they put out in 2020. And then the ACOG has like very specific information about screening and management of bleeding disorders in adolescents with heavy menstrual bleeding. So that's where most of this evidence-based information is going to come from.

Okay, so what is normal? What's the menstrual cycle? All of those things. I feel like this particular picture is one thing that I have never quite liked, even though I'm really interested in women's health and I like helping gals. But what are the different reasons why you may or may not

develop like abnormal menstrual bleeding and then what you know is normal and what's not normal. So one of the main things that we talk about in pediatrics for sure is going to be that like hypothalamic pituitary ovarian axis. That's very much the most common cause of it of having like heavier abnormal kind of menstrual.

uterine bleeding in our patients. And ovulation is really commonly seen in adolescents and associated with their ovulatory dysfunction, because you really don't have like a functional corpus luteum yet. And you really don't have the normal kind of LH surge and progesterone surge. All of those things are just immature. So that can lead

there's like an imbalance in those hormones and that can lead to excessive and or uncontrolled bleeding, particularly kind of in that early phase right after menarche. So the hypothalamic pituitary ovarian axis immaturity, even though it is the most common cause, is kind of a diagnosis of exclusion because it's not like, oh, we're going to go

test these hormones and prove that that's the problem. So it is the most frequent cause, but it's not the only thing that we talk about.

So that's important, I think, to start with. So to define heavy menstrual bleeding, we used to call it menorraja. I think the main, the kind of the nomenclature has been shifting over the last decade or so. And the main thing I hear or I see kind of now in a lot of, especially in like the GYN world seems to be like abnormal uterine bleeding. I'll call it heavy menstrual bleeding because that's very much still on our lexicon and that's like something that I think is easy to understand or talk about. And abnormal uterine bleeding and heavy menstrual bleeding aren't totally the same. So we'll talk about that in a little bit too. But a clinical definition of heavy menstrual bleeding is excessive menstrual blood loss interfering with your physical, emotional, social, or material quality of life.

So common clinical indicators of that would be soaking through your, like your menstrual kind of pads very rapidly, bleeding for a longer period of time. So greater than, we usually, it's like 7 or 8 days, different, different ones will just say different things, but greater than seven days for sure.

If you're passing large clots, and we'll talk about what constitutes large versus not large. Flooding through your clothes or your bedding can be a sign again of having heavy menstrual bleeding or and then developing iron deficiency anemia. So iron deficiency anemia is pretty common. I feel like we all probably know that. We take care of lots of girls in our practices, gen peds and hemo.

for sure. And that would be if you have developed iron deficiency anemia, it's a sign that you're losing blood or you're not making enough, you know, blood to keep up with your needs. And so frequently in menstruating females, one of the first places that you'll think to maybe like, what are, where are we losing? That's a big place. and you can lose more than you think you lose, if that makes sense. So again, I talked a little bit about like heavy menstrual bleeding versus this abnormal uterine bleeding. I put a little like thing at the bottom that just says the abnormal uterine bleeding is bleeding from the uterus that is abnormal in like regularly volume, frequency, or duration. So again, it's kind of a little bit of more of an umbrella term and then heavy menstrual bleeding specifically is just you're having like more loss.

In the gynecology world, this is not really as much something that I have done very much of in the last 10 years. But in gyne world, Palm coin is something that they talk about. And it's like a classification system for the causes of abnormal uterine

bleeding, specifically in non-pregnant reproductive aged persons. So they like that overall abnormal uterine bleeding. You can have heavy menstrual bleeding as a part of it or inter-menstrual bleeding. So you can bleed between the times when you would normally have your menses. And then they break it down into structural causes versus non-structural causes. And you can see that they're listed there and that Palm coin is there. It's just meant to jog your memory about the different reasons why those may be occurring. So for in Pedi world, the structural causes of heavy menstrual bleeding are like much less common. They occur, they're not, it's not a zero, but they're, it's very, it's much more common in older folks for them to have these like structural causes like polyps or leiomyomas or malignancy and hyperplasia, all of those things not as common in PD world. In pediatric world, again, the ovulatory dysfunction is the most common thing that can cause the heavy menstrual bleeding in young people. And then I put, you know, the three little stars just as a reminder for that. And I put the big star next to coagulopathy because that's heme world. And then I did say just really quick, because even though I'm big H, there's the little O, there's malignancy. It's very uncommon in kiddos or young people, AYA patients to have malignancy of, you know, the cervix or the GYN cancers, but it's not impossible. And so I just, that should still be on the differential. And I say that because I have a cervical cancer patient that I take care of and her presenting symptom was heavy menstrual bleeding. So So this is, so, okay, so we've gone from, you know, the different reasons why it may be, it's less likely to be structural, it's going to be more likely to be something like an inherited bleeding disorder, but more likely, again, the inovulatory, but we have to prove that it's not the inherited bleeding disorder since it can be like a presenting symptom for that. Everybody's favorite slide ever, the coagulation cascade. But the important thing is, like in the general population, inherited bleeding disorders are not wildly uncommon. You can have, they're inherited bleeding disorders are diagnosed in about 10 to 17 kind of percent of women. But in adolescents with heavy menstrual bleeding, it's up to, it's between like 20 and 50 percent, like 21 to 46 percent is one of the studies that I was reading. So many women or many young people who are coming in with heavy menstrual bleeding, your index of suspicion should be higher because the odds that it might be an inherited bleeding disorder are higher in that group of people as opposed to just like

the general population, if that makes sense.

Von Willebrand's disease is the most common inherited bleeding disorder in the general population.

And it happens, they were saying, we estimate that it happens at about 1% of the general population, which is pretty high, but also we also estimate that it's like pretty underdiagnosed. It's probably a lot more common than that, actually. It's followed by the hemophilia A and hemophilia B. We think of those as a bit rare, but we definitely, I think frequently here, especially we definitely know patients who have these. These diseases, about like one in 5000, one in 10,000 males will be diagnosed with hemophilia. There's other rare bleeding disorders that occur, and we can talk a little bit more about those in a little bit. But again, like for heavy menstrual bleeding specifically, like 1/3 of those patients that come in and who actually require like hospitalization. So it's a little bit different than who presents.

But a third of the hospitalized patients that come in and need to be inpatient for heavy menstrual bleeding will be diagnosed with a bleeding disorder. So it's not entirely uncommon, if that makes sense. The most common bleeding disorders that these young people are diagnosed with is going to be von Willebrand's disease. So similar kind of, since it's the most common in the gen pop, it's also the most common thing that people who come in with heavy menstrual bleeding that have an inherited bleeding disorder will be diagnosed with. The next thing that you might see is going to be abnormalities of platelet dysfunction. And so I will say, like, I'm including ITP in that. And so von Willebrands, platelets,

And then we should be thinking kind of hemophilia type.

concerns and then after that it would be more like the rare bleeding disorders, factor deficiencies, things like that.

So when do we suspect a bleeding disorder? Like the people have, they've come in, they've told you to your clinic, they've told you I'm having bleeding. Maybe they're tired, maybe they're fatigued and you're worried about some like anemia or something like that. When is it?

Oh, it's heavy, heavy bleeding, heavy menstrual bleeding or regular menstrual bleeding or whatever, versus like, when should I really be worried about a bleeding disorder? There's like several slides about this, but I think this slide is a pretty good rundown. So it talks about like specific menstrual like history elements, and then it breaks it down otherwise into the bleeding symptoms that you may be concerned about.

So there are some tools and I'll go through those and that's actually that those tools are what's going to kind of what this table is based off of. But I do think that it's some of the things here specifically that might be like of interest would be again. Something that's important is like heavy bleeding at menarche. Like if the very first time you ever have a period, you end up in the that's something that we should be paying attention to. Or if the, when I, when the patient comes in or the person comes and tells you like, I'm having these heavy periods and you ask them, oh, when did it start? They're like, oh, since the very first time I ever had a period when I was 11 or whatever.

then every single period is pretty heavy, then that's something to be mindful of and have in your, that should kind of prick your ears up a little bit, if that makes sense. So prolonged bleeding makes sense, right? Frequent menstrual bleeding. So that's like happening more often than the regular kind of 30-ish days, 28 days.

If you have severe iron deficiency requiring a transfusion. So I think that that's another thing. And I see that a little bit more often probably than the average person, just because they come to us. But if you're eating a transfusion, that's like a lot of bleeding. That's abnormal. So we should have our minds thinking like, what is the cause of that much bleeding?

Other things that are important, like flooding and leaking in your clothes, I always ask that as a part of the question. We'll talk about taking a good history, but that's important. I did say something about like, oh, clots, like little clots or big clots, because that's people will, when you're talking to patients, they'll like talk to you about, oh, a little, but nothing crazy. So like large clots, like I usually will talk about it in

in the context of coin sizes, like a dime, like 1/4, those kinds of things, passing a bunch of those, you're actually losing like a lot more blood than you think you are. Something else, and then, so any of those things are, should prick your ears up. And then if it's in conjunction with any of the other kind of bleeding symptoms that are like, then you should be like, oh yeah, I have.

I have worries for an underlying issue. So if they bled a whole bunch after they had their dental procedure, all of those, any of those types of things occurred too. Again, it's those, it's the gestalt, like the whole picture of the patient is going to be what really increases your suspicion.

Okay, so that's why, that's when you should kind of start to be suspicious, I think. The most important thing I would say is a really good history. And I know that everybody

in Jen Pede's world has all the time in the world to spend with during their well-child teen check, talking a whole bunch about all of this.

But I would advocate at that point, if somebody does do something like that, like, oh yeah, by the way, I have terrible periods, make its own appointment maybe because it does take a lot to do these appointments. Y'all probably all know that. But asking all of these questions is really important to know where you need to look and how you need to look.

So the first thing I would say is taking a really good menstrual history. I think we all learn that pretty well. When did you start having your period? How often do they come? How long do they last? That kind of a deal. And overall bleeding history is important. And again, I recognize that the bleeding histories we take are probably a little bit more involved than the bleeding histories other people take potentially. which is super fair. But I think something just interesting, again, you're going to ask things like, did you ever bleed with surgery? Do you ever have weird bruises? Do you get nosebleeds? Stuff like that. I also think it's important to talk about like developmental history as a part of your bleeding history. So did you come out, you know, was it a vaginal delivery?

Did you have, did the baby have a bleed? Mom, if mom or dad's in the room or whatever, you ask them that. Did they have a head bleed? Maybe things like that. Did they come out and they were just covered in bruises? Did they bleed when they cut their teeth? Those are like some, like just some things that I wouldn't have for sure, wouldn't have thought about before I started speaking to all these families.

that I think are important and can, again, kind of really tip you over into being a little bit more concerned about something underlying. Family history, I just ask if anybody has bleeding problems and then I'll specifically like say certain like bleeding term, like bleeding disorder terms. I'll be like, have you ever heard of something called hemophilia? If they have, they'll tell you yes. If they haven't, they'll tell you no. I usually will say hemophilia or von Willibrian specifically.

just because people usually know if that makes sense. I also like family history wise, just to like a tidbit, asking if a mom or a grandma or whoever is there, I usually ask them about their families, kind of other women in their family, have they had heavy bleeding? Have they had

hysterectomies, have they had, do they bleed a whole bunch whenever they had their babies, that kind of a thing. And families know a lot. Like women all know a lot about all the women in their family and all of the people who have had these issues and

these problems. So I think that's a very helpful and useful.

tool is your family history. You should always ask your medication history. That's important. There are some meds, obviously, I think we know that, that can lead to impaired hemisthesis. So are they taking a bunch of aspirin or NSAIDs or something? Are they taking out, are they on a blood thinner and we, for whatever reason, are not in charge of that blood thinner? Knowing those things are important. The other thing I would say is important is taking a sexual history.

Just do it. Like I think in PD world, sometimes, especially in, I think, subspecialty PD world, at least for us, you may not always take the time to do that, but that would definitely be something that's important to know. So again, clues that again, maybe should make us more concerned about an underlying bleeding problem.

would be that bleeding, heavy bleeding since the very first period. Family history of anybody, if everybody in the family bleeds a ton, that's important to know. Has this kid been also having nosebleeds all their life? That's important to know. Easy bruising is a weird one because everyone thinks they're, most people think that they're easy bruisers. So when I ask about bruising, sometimes I'll ask about like a typical kind of. locations of bruising, which I think is sometimes quite useful. So like when you held the baby on their back, did they get fingerprints? You know, did they get bruises on their bottom or on their face or on their trunk? Those are all places that are not super typical. I think we know that as peds, pediatricians will frequently, you know, talk about, oh yes, they have them on their

their arms and their anterior shins, their legs, things like that. But bruising on your actual bottom, like your buttocks is not super duper. It can happen, but not as normal. So that again can be a clue. Surgical dental bleeding is huge. That's a big one. Postpartum hemorrhage in the relatives is important. And then also just like families,

patients who have been iron deficient for like ages and they took their iron and they're like swear up and down that they did, that can be a sign again that they're having losses. Like even more than you know, even more than we can understand, we just can't keep up for whatever reason. Are they bleeding just more? And is it like enough?

That is concerning, right?

So we took a solid history, but then also all of these things that I just talked about were a lot. And I didn't, it's very hard to remember and like jog your own memory about all of these different things. You're going to take a developmental history and

all these things, like that's a lot, right? So there are validated tools to help you to turn, like remind you what different kind of domains of bleeding you should be asking, you can or should be asking about. And I think that this is one of the ones that I found really helpful. It's like very widely used in the hematology world, and I ask everybody about this every time they come in for bleeding. And so having like a score, a baseline or whatever of this.

ISTH, this bleeding assessment tool is very helpful and so that it's very, that would be very fancy if you sent, you know, you send your console and then you've got a bat score already. But it's a diagnostic tool. It's been validated. It was originally validated for von Willebrand's disease, but we use it pretty widely in like inherited bleeding disorders.

and it's used to evaluate bleeding symptoms. An abnormal score is dependent upon your age and gender. So like less than 18 and greater than 18 and female versus male sometimes have different, well, they do, they have different scores and that's a different like cutoff for abnormal.

So there is a MedCalc for it. I put that here on this slide and that QR code should just take you directly to the MedCalc if you want. Also, like the websites on the bottom. Also, if you just Google it. But it's really nice. It's like a 14 symptom kind of questionnaire. There's, you can get a score of zero, like one through 4 for each. and then it'll help you kind of score from there. Again, depending upon the characteristics or the demographic of the person that you're scoring, it'll be normal versus abnormal. Normal doesn't rule out a bleeding disorder, right? That's, I think, a very important thing to say.

But abnormal will help you know, like, yeah, we definitely should probably do a little bit more work up and look into it. So I think just some of the domains that they talk about, if it's like useful to know, but I, because I think it's useful to know, is it asked specifically about things like epistaxis.

cutaneous bleeding, like bruising and things like that, minor wound bleeding, oral cavity, GI bleeding, GU bleeding, trauma, surgical, that kind of stuff. And it goes all the way through. For the boys, they don't have menorrhages, so that's okay, but there is a specific one. And then depending upon the severity or the amount of kind of intervention you're required for each of those,

Um...

those domains, it will help again get that score.

So...

That's the ISTH bat. I really like it. It's really good. 10 out of 10 would recommend. And again, I just, I'll say it again, I had one more slide here just to say like, if they have, if a patient has a normal score, that doesn't mean that they don't have a bleeding disorder. They could never have a bleeding disorder kind of a thing. It's really just,

It's very dependent upon what your bleeding kind of challenges or exposures have been. So like, yeah, you're not gonna, you can't score high if you've never had a surgery or a dental procedure or any on all of those domains. And so you're not gonna, you're not gonna score if you're high on those things if you're a boy or if you're a little girl who's premenable. So those are just domains that you can't even, you know, you haven't achieved yet, if that makes sense.

So we talk about things like bleeding challenges that patients have had. And so your BAT score, it can change over time and it likely will change over time.

So that's again, just kind of an important thing. Some of the new recommendations related to hemophilia have been coming out that we should be like rescoring people frequently on their bats just because again, your bleeding challenges and exposures will change over time. So bat score, good, helps decide normal versus abnormal bleeding sometimes.

Something that else that I like really don't use that often, but I kind of like it, is the, is this, it's like more of an obstetric kind of gynecology tool that they use. It's a questionnaire. I think it's got 12, 12 questions on it, but it's asking specific questions related to

like the menstrual, your menstrual bleeding. So this is, I mean, I don't think it's going to be for the dudes, right? But it'll be for the menstruating persons. And it has some other kind of portions that are really nice. So it asks some more questions about family history and things like that as a part of the questionnaire.

Um, it's again 8 questions, 4 categories, um, and then when they when they actually validated this measure the first time, it resulted in a sense.

Oh, I think someone else is in control of the presentation. I don't know what happened.

Hold on.

Okay, let me get back to where I was, y'all. Sorry.

Okay.

Um...

It had a really nice sensitivity for if you did like when you fill it out, when you score it based on their their scoring tool with this with this tool that you could like it was nice to and it was pretty good about determining like who actually requires more work up, who requires, you know,

like a hemostatic workup. They actually did something in where they added the next tool that I'll show you as well. And once they did both of those together on their GYM patients that they that they validated this through, it actually had a sensitivity of about 95% to see if you were if you scored on both of those high, then you were 95%.

you know, sensitivity for finding out who has actually had an underlying inherited bleeding disorder. So I think it's a useful tool.

So I mentioned one more. This is one more thing that I did, and this one I use pretty frequently as well in our clinic, but it's the pictorial blood loss assessment chart, or the PBAC is what people are calling it. So it's a validated tool used to help diagnose and quantify like menstrual losses.

and you score blood stains on like menstrual aids, like pads and or tampons or whatever. It looks a little wonky here. And I have one more and I do have like some, again, I have it linked because I think it's useful and you could potentially use it in your own clinic in life. But the way that it works is that it has day by day, It shows you like a little bit stained, medium stained, totally stained, and then it also has a little portion where it talks a bit about the...

about the like clock size and things like that. And through all of those information, you obtain a score and it teaches, it'll show you how to score it. A normal score is less than 100 points. So it's points on this PBAC and that score of less than 100.

means that it seems like it's a normal amount of blood loss. So that meaning less than 80 CCs for that period or for that menstrual cycle. If you're greater than 100, then you have more than the 80, and it's more, and that's abnormal. That's more than we anticipate or whatever. That's a kind of the cutoff that's been.

that's been decided. So that's kind of like we talked about like what's too much based on like symptoms, but like how much is too much based on like amounts.

I think this is a little bit tricky, just something to have in our mind, because it's a little bit hard. I don't have, I have not seen, and I'm sure it potentially exists, but I just haven't had access to or seen this. But I haven't seen non-English versions of this one. And I do have lots of families who are non-English speaking and non-Spanish speaking.

And so trying to explain this sometimes is a little bit challenging, but it is like, it can be kind of intuitive once you sit and go through it with folks.

And then I do say, I will say like, you do have to be, have it be in your mind that there's some recall bias that can happen. So if a patient hasn't had a period and you just bring them to the office to talk about their last period two months ago, because they have irregular periods too, then it can be a little bit hard to know how accurate it's actually going to be. So sometimes I'll actually send these home with patients and ask them to try and keep track like in real time, if that makes sense.

I like this version of it a little bit better and that's why I put the QR code on this one. I think it's a little bit easier to use. And so, and again, it's pretty easy to score once you actually just like sit down and take a look at it. So if anybody's interested in that, I think it's good. And then also again, when you're like sending people like on for the people that we're concerned about, I would say having like a baseline one of these like having a feedback from before we started, you know, OCPs or whatever is really nice.

I included this one as well because this is just a nice resource. So this is as opposed to doing like kind of the feedback or the monthly menstrual log. This is a daily menstrual log. I like this too because it has, it's a little bit more inclusive of other types of.

like menstrual aids, if that makes sense. So like cups and stuff like that. There's other ways because we still are trying to like quantify, but how do you quantify if people are using like a cup or the period panties or whatever? It gets a little bit harder to do with those things. But the Hemophilia Federation of America does have these good trackers that you can print out. And there's a whole bunch of different, there's daily, there's weekly, whatever.

It's a cool resource. I do have to tell people who don't have hemophilia, but I'm not telling them they have hemophilia. So just as that, that's a caveat. Okay, so your patients come in, we've talked about their period, we've assessed, you know, their symptoms, all of their different bleeding symptoms, their family history, all of those things. And we've also

decided or we've, you know, quantified the amount of losses they're actually experiencing with their period. So that's a lot of nice data that we have about the patient already. What else do we need to do? We should probably look at them. Like we should probably do a physical exam. Physical exam findings are not, again, I feel like the history is a little bit more.

high yield for this patient subset frequently by the time at least they get to us, because they're usually not, you know, acutely ill if they're coming to my clinic. Not never, but not always. But things you might see for a patient on physical exam that may indicate that they are having, you know, extreme heavy menstrual bleeding or heavy menstrual losses would be signs of anemia, so pallor. You might also see like things like bruising and petechiae, depending upon the reason that they're having those losses, if they're having dermocytopenia or something like that. Orthostatic signs, so the syncope and presyncope, it's not really a physical exam finding, but you can get that and you should probably be getting orthostatic vitals on these patients as well.

I would, actually, you should just do that. We should also be looking out just for other things. Like there are other reasons people have bleeding, and we'll talk a little bit about that more. But signs of endocrine disorders, we should be, when you're evaluating the patient head to toe, you should be looking for all these other things. So are they here soon? Are they having skin changes? Do you think they have PCOS? Are they hypothyroid?

What are we, what are we thinking here?

As far as like a GU exam, I think this is an important point. An external exam is actually reasonable and appropriate. You should be checking Tanner stage and you should just be looking to make sure that there's no external signs of like trauma or anything like that that could be leading to vaginal bleeding. You know, the Tanner stage should match a person who is having, who has you know, achieved that level of adolescence and that, you know, sexual maturity and all of those things, they should match. You shouldn't have a kid who's like totally pre-pubertal appearing that's having vaginal bleeding, that would be very abnormal. And it's pretty, the PD and the, you know, gyne or OB literature really does agree that for the most part, in adolescent girls who have heavy menstrual bleeding, you don't have to do a speculum exam. It's not required. Now, like you may find something else on your physical exam or on your history taking or whatever that leads you to need to do that. That can absolutely occur, but you don't have to do it every time. I know that's something that I used to, I definitely used to think

And I'm glad to know that we've been doing it right. But abnormalities on your physical exam can help us know what do we do with our labs, which I know is a big important thing. So initial lab evaluation that I would recommend for pretty much everybody, and this is again borne out.

This is pretty, the PS, the PS GMA article and the OBGYN folks pretty much agree on where you kind of should start, if that makes sense. So getting a CBC affair 10. kind of screening PT, PTT, and a fibrinogen, and then a pregnancy test is always the right thing to do. I only say that because every once in a while people won't have had one at all. And so my rule that I tell families is usually like 9 to 90, pretty much everybody is getting one, just because then it's not anything that I'm saying. or insinuating or anything like that. It's just an important part because you never know somebody's experience. So that's initial lab evaluations that people should probably all have. There's also really more like the heme focused lab. So if on any of our history, any of those things, all of those things led us to have higher suspicion or concern.

for an underlying bleeding disorder, then we should probably be doing more testing to see if that's true or not true. So the first thing, again, being the most common cause, like of underlying bleeding disorder cause would be von Willebrand's disease. So we would check for that. We have a panel here at UH. Other folks might not have that.

Our panel includes these three things that I've listed there. So the activity antigen and then also the factor 8 activity. If you don't have that panel, which is totally fair in the outpatient world, you can still get things like Yvonne Willebrand's activity antigen and factor 8 level. Frequently patients that come to us like from gynecology who've been referred to us from them.

they'll already, they like almost always already have these things. I also like a peripheral smear. It's nice to, if somebody's like taking a look at the cells, particularly like the platelets, just to make sure they look normal and healthy and not extremely like morphologically wild. And then underneath a little bit more, you can do other things. And again, we'll talk about that in just a sec, but like platelet function testing and then specific kind of things.

fact other factor assays.

I kind of broke it up where like the first half is like the go for it labs. I think those are very reasonable and appropriate people who are being, you know, evaluated for heavy menstrual bleeding should have those pretty much always. The second half, the heme focused, it's not unreasonable. And again, outpatient folks do this like not infrequently and it's nice to kind of have a baseline sometimes.

of the von Willebrand testing and stuff like that. But I will say the only kind of caveat to that is that.

There's potential spurious results, not uncommon for that to happen either. So they have abnormal von Willebrand testing outpatient, and then they come to us and repeat the coags in our coag, in our specific kind of co-specialty coag lab, and they've normalized or whatever. And so it's not the wrong thing to do at all, but it is something just like

when you're interpreting those tests and you're telling the family, I would say like, it is possible for these to have been, because they're just very persnickety, they're very, very sensitive, if that makes sense. That's how I kind of talk about it with families. I would probably, the ones on the bottom there, I probably just let him take care of it, because some of those platelet function, platelet aggregation studies, things like that are like,

you have to plan and talk to the right people and all of those things. And I don't know, you just have to know when to use it kind of a deal and it's really expensive and a big deal. So I probably would leave those to the next group. Oh, one more thing that's very important. That's why I put that note there is.

It's also important, again, I think when we're interpreting things, particularly maybe like in the emergency department setting and things like that, is that certain things like when you're like actively bleeding, like if you're bleeding and you went to the emergency room because you're bleeding and you want to pass out and whatever else, so bleeding, you know, inflammation, those things, they can actually falsely elevate some of these lab values. So you check the von Willebrands when they're bleeding and they're fine. But like at baseline, they're definitely not fine. So that again can just cycle back into those like results not always being completely accurate or whatever, if that makes sense.

The other thing that's important is having, once we start hormonal therapy on a patient, we usually kind of have a little bit of time before some of those tests can kind of settle back out because your estrogen and things like that, those combined hormonal contraceptives will frequently, they bump up your von Willebrand factor levels. And so that can also kind of change things too.

So just again, when you're interpreting, if you order those labs, interpreting them, just having that in your mind.

Oh yeah, I had one more note for myself. As for the ferritin, that's a big important part of this is the screening for the iron deficiency. I know I don't have like an iron panel on there. I'll be honest, I probably would just get the iron panel. But ferritin is the one that's listed in all of the resources and all of the evidence-based kind of

practice guidelines that I'm talking about. So ferritin is a nice, you know, screening lab, but it's not, again, this can also be a little bit tricky because if you're inflamed or you're sick or whatever, your ferritin can be falsely elevated. So you may, so a low ferritin will always tell you that they have low iron stores, but a high ferritin might not be truly reflective of their iron.

if that makes sense. So again, keeping in mind.

Okay, so what are the causes? We have decided, you know, we think that this person has an underlying bleeding disorder. They've been bleeding a ton. Heavy menstrual bleeding that came in. What are the most common, again, kind of causes of what that might actually be then if it is an underlying bleeding disorder? So Von Willebrand is again the most common

overall inherited bleeding disorder. About 1% of folks can have it. And again, like up to like 50% of people or 40% of people with heavy menstrual bleeding may or may not have it. There are different types of von Willebrand's disease. Some of them are qualitative dysfunction, some quantitative.

So just types one, two, and three, but I think just knowing that a person has von Willebrand's disease is the first most important thing for the general person. Clinical manifestations of von Willebrand's are frequently heavy menstrual bleeding is pretty common. Nose bleeds are common, and then mucosal bleeding, like your uterine bleeding is mucosal bleeding. The diagnostic testing we talked about a little bit ago. but I've listed it there as well. And we'll talk about treatment. Platelet function disorders are kind of the next thing. We talked, I said a little bit about ITP, but ITP was in there. And so I think that's what kind of bumps these up. These other platelet disorders like Glanzman's, Bernard Soulier, all the storage ones, those are pretty rare. pretty uncommon, but they are important to have in our minds. I think the clinical clues, what would clue me into this more than the other is the mucosal bleeding that's just like wildly out of proportion to their routine coagulation tests. Like your coags are fine, it's those platelets that are not acting normally or not doing their job. So

That's an important kind of thing to keep in mind as well. If you're seeing that, but their PT and I, their PTT are totally fine, you're like, okay, maybe that's the deal.

And then that's those are kind of tough to test. So again, if you're starting to think about that, send them over to him like ASAP.

Females with hemophilia and hemophilic carriers, this is my jam. I didn't want to do too much, but there is changing terminology. I know like in med school, we always

talked about how hemophilia is a boy's disease, but women can definitely have it. And there are symptomatic carriers. So people who have, you know, normal factor levels but are not having

And.

but are not having, but are having symptoms, if that makes sense. So it is important. Why does it matter? Heavy menstrual bleeding is not uncommonly A presenting symptom for folks. GYN bleeding outside of that, so the postpartum hemorrhage, things like that are pretty common. And then again, factor levels may not correlate well with phenotypes. So all of those things are, it's not, you can't not have it, if that makes sense.

It's pretty under-recognized in women. And then there's a little bit about X-chromosome inactivation. So you can have one, even though one of your chromosomes is normal, that one maybe doesn't work quite as hard as your abnormal one. So you may have lower factor levels or more bleeding. So that's a group of folks that can definitely be these women or folks who have menstrual bleeding.

that might show up for you.

Other things, again, rare factor deficiencies. Oh, thrombocytopenia. Things I think are really important, like when it might be like really serious or what people might be really scared of would be things like leukemia or aplastic anemia. That's why you're getting your CDC for sure. Don't forget connective tissue disorders. They totally exist and they can totally make you bleed.

RW **Robert Wymer** 43:04

Naba.

Thank you.

LE **Lehrmann, Victoria Elizabeth** 43:21

And so I put a little note about like a biting score. So if a person is really flexible and they bleed, that might be somewhere to start. We should be asking about anticoagulation use, and then again, the endocrine contributors. So what do we do? We need to acutely manage, you're going to assess, make sure they're hemodynamically stable.

You'll transfuse based on whatever your institution's transfusional thresholds are. We probably transfuse under 7 here, and depending upon how they look and how they

feel. And then hospitalization criteria. I'll go through just an example of like an algorithm of when you might, of the hospitalization that some people have published. Things that you will do in the acute setting.

you should probably just go ahead and start the combined hormonal therapy.

Estrogen helps kind of directly act on the endothelial cells. It promotes higher synthesis of von Willebrand factor and it increases some of your other clotting factors too. So it can work pretty good. It maybe won't work like this second, but you should probably go ahead and start it even in the acute phase.

and get progesterone. We do a great job of getting tranexamic acid here. And then I think having iron therapy in our minds, like early on, like right off the bat is an important thing. You'll get the blood products if you need them. The condition specific kind of treatments, including like desmopressin or, you know, factor, whatever factor you may or may not need.

you should call us for. But those are treatments in the acute setting specifically.

Long-term management, the things we want to do is control your bleeding. We want to prevent you from having anemia, like correct and prevent your anemia, and then make your life better. That's an important thing. The different ways that we could do that in like the long-term goal setting would just be like,

We can do hormonal suppression. You can have an IUD. That's actually one of the like best ways when they've evaluated like a ton of folks to treat heavy menstrual bleeding. The IUDs work very, very well. It's one of those things in PD world we're not going to do quite as often. That makes sense. But that's definitely in the GYL literature.

We're going to replace iron when we need to. And then you're going to follow up with heme. Those are all really good ones. We know in our adolescent patients that adherence is hard and following up is hard. And so trying to provide that structure and support is really important.

I like this. It's very hard to see, I think, on y'all's screen, so I apologize for that. But there are really nice algorithms published for like how you should be thinking about it in like the heavy menstrual bleeding and like the acute setting and how to treat it and what to do. And so I do think that it exists. It's out there and it's really nice. So it'll talk about like, these are the things you should be looking at right away.

look at their vitals, orthostatics, all those things, which labs you should get before you're going to do any treatment, how to treat, how to reassess. All of those things are, there's some nice published guidelines out there. And I would recommend just

taking a look if you're like an ER doc or if you're going to go work in the ER or in a clinic or whatever.

The next thing I looked at, because I have had this conversation several times, is like, do we need imaging? We've done all this work up, we've got these labs, we know what to do, kind of, we have an idea, but do we need imaging? The answer is it depends, which is very annoying. But structural abnormalities, like I said way back at the beginning, are just a small minority of the cases of heavy menstrual bleeding in adolescents. It's a lot more common in the grownups.

So clinical evaluation should really help guide your whether or not you're going to include imaging. Some certain things that might tip you over into doing it would be if a person is having like a lot of menstrual pain.

That's refractory, kind of the first line treatments for that. Also physically, any physical exam findings when you're doing kind of your external exam, that would be like a pelvic mass or some sort of outflow obstruction, you go ahead and get some imaging at that point. Most people will start with a transabdominal pelvic ultrasound. which is like pretty good if you're looking for like a big significant anomaly. You can see most of those, but a transvaginal is a lot more sensitive to text moll like cysts and things like that, which can still exacerbate menstrual bleeding. But again, I would also still start with the transabdominal just because.

Like repeats patients, right?

I wanted to do just a quick, I'm running out of time, but I wanted to do just a quick, a quick kind of talk, like little plug about iron deficiency and quality of life. Because we talked about ferritum, we talked about that iron, you know, repletion should be part of your upfront therapy, even though giving some iron orally is not going to, you know,

increase their hemoglobin of four today. But we need to be, that needs to be like kind of forefront in our minds, I think, for a lot of these women, because again, you're having ongoing losses regardless. And a lot of people are, like many, many, many of these patients are iron deficient. And so iron deficiency actually has some pretty significant consequences.

for quality of life, fatigue, cognitive, school impairment. They don't play, kids don't play sports as much. It's a lot of psychosocial impacts that they've reported in a bunch of different studies. Iron deficiency is like a big, big topic right now in HemeWorld. And so I just put some of the more like recent articles that have been published. And then in that little upper

corner, you can see that like the publications in PubMed is like skyrocketed. So this is something that's very interesting and people are like patient kind of patient centered outcomes are like very important because

it really negatively affects these young people's lives. So one other thing just down at the corner there you can see in the ferritin goal for menstruating folks or menstruating females or people is actually like higher. So when you see your ferritin come back on the computer, it's definitely going to be

you know, black or not red after whatever, like 12 or 15 or something like that. But we actually have a slightly higher ferritin goal for most of our menstruating females. I always, I will say like, if this is not the end all be all, you have to get to 30 or you're not successful, even though they're not anemic and their iron is fine. That's okay.

But it is something like we would try and, you know, the goal would be to try and get them up, especially if they're having like ongoing symptoms, like they're super fatigued or something like that. Those are a lot of the things that we are thinking about in our iron deficiency kind of world. Again, oral repletion is the most physiologic and the best, but

but IV does exist and work quite well as well. So that's most of what I had to say about heavy menstrual bleeding. It was a lot. Some of the take-home messages that I would, that I think are most important is that this topic, even though it's like fairly common, like lots and lots of women and young people,

experience this, report this, come to the doctor for this. It does require and warrant kind of like mindful evaluation. And then I just plug that bleeding disorders are relatively common and probably significantly under-recognized. So just having that in your mind and making sure that we're looking in that area and for that.

And then iron deficiency should be addressed. We should have these gals on iron. If it's not working, switch the iron. If it's not working, switch the dosing regimen.

There's a lot of good information about it. And then also if it's really hard, hematology is there. Caring for patients for kids is like a team sport. I know everybody knows that here.

And so multidisciplinary care, especially like kind of for this issue, is really important. And if we have that option, and if we can, utilizing it is really good. And it really, really helps these patients. So I think the quarterback of all of this is generally like primary care, kind of like first line caregivers kind of a deal.

I think the next thing would be, you know, it's PTMonc and adolescent medicine are really good resources. And we can, again, if you find an underlying bleeding short,

definitely, definitely, it's always PMonc, right? But I think that the supporting and the iron deficiency and all of those things are really helpful and we can do a lot with that. Gynecology is like super important and they help these patients very much. And then again, just having in our minds that the psychosocial kind of ramifications of this are very real. And so if we have like support that we can give for that or social work, which I know that we have so much extra of that everywhere. But if we have those options, I think that's just really helpful and nice for these patients. These are my references from today, and then the QR codes and everything were there. And then I had just a side questions, comments, and advice, and then a shout out for our South Texas Center for Bleeding Disorders. Because if you do have a bleeding disorder, it's a good place to come. And it's, you know, Federally designated and important. That's all I got.



Kamat, Deepak M 52:40

Thank you, Dr. Lehrmann, for that wonderful presentation. Let's see if anybody has any questions, comments. They can put the questions in the chat box or raise your hand and ask the questions, please.



Lehrmann, Victoria Elizabeth 52:50

Jack.

Dr. Kissoon had a really nice point about, particularly in non-ambulatory like kiddos, that if you're having these abnormal kind of bruising sites and locations that we should be having, we should have, you know, abuse and non-accidental trauma, like at the forefront of our minds. I super agree with that. I think I was kind of focused in my mind on our older kiddos and people, but you're super right. That's all.



Kamat, Deepak M 53:31

I don't see any comments or questions. Thank you, Dr. Lehrmann, for that wonderful presentation. Thank you all for attending this morning's Grand Round. I'm going to conclude. Have a wonderful Friday and a wonderful weekend. Thank you. Please try to attend this afternoon's research forum for the Department of Pediatrics. Thank you.

LE **Lehrmann, Victoria Elizabeth** 53:34
It's.

PM **PRIMROSE MEIER** 53:43
Yes.

● **Calderon, Delia** stopped transcription