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ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Male Hypogonadism: More Than Just Low Testosterone

Dr. Paul Doghramji:
Did you know that hypogonadism affects as many as 5 million men in the United States alone? That's more than the number of men affected by prostate cancer and stroke every year, making it a prevalent, yet often overlooked, condition. So what can we, as healthcare professionals do to change that? Welcome to SexMed on Reach MD. I'm Dr. Paul Dogramji, and joining me today is Dr. Alexander Pasturszak, an assistant professor at the University of Utah School of Medicine. Dr. Pasturszak, Alex, thanks for joining us again today.

Dr. Alexander Pasturszak:
Paul, thank you so much for having me, and for talking about hypogonadism. I think this is a really important topic to discuss, particularly regarding what's going on in the field today, so glad we're going to talk about it.

Dr. Paul Doghramji:
Okay, Alex, so why don't we start with the basics, and review how urologists define hypogonadism.

Dr. Alexander Pasturszak:
So, hypogonadism by definition is a constellation of both clinical symptoms and then lab results. So, you know, a lot of people talk about low testosterone. The marketing campaign that you and others might have seen focus on low testosterone – is it low-T cell. But really it's not just about the low testosterone; it's about the presence of symptoms, as well. So that's a really important distinction. So, you know, guys need to have symptoms of hypogonadism, and the most common of which include the decrease in libido, low energy, and fatigue, and then sometimes some other sexual symptoms like erectile dysfunction. And this needs to be combined with lab tests that show actual low testosterone levels.

Dr. Paul Doghramji:
So, you know, a lot of patients come to my office, Alex, and they say they're tired, they're fatigued, but are you saying that all three have to occur at the same time; which is the low libido, erectile dysfunction, and fatigue for you to consider hypogonadism?

Dr. Alexander Pasturszak:
Great question. And no, not at all. And actually if you look at the list of symptoms, there's probably about 10 or 15 of them that are on that list, but having one or more is really what – combined with the presence of a positive lab test, is really what defines hypogonadism.

Dr. Paul Doghramji:
And what do these lab test results show?

Dr. Alexander Pasturszak:
Yeah, so this actually is a really important thing, and this is where a discussion is much better than somebody writing a paper or, you know, whatever text, chat. but generally, a testosterone level of 300 or less – or less than 300, by definition, would be considered hypogonadism. That being said, right now, there what we know about testosterone levels in men, is that once you turn 30, your testosterone levels start to go down by about 1% a year, right? Right so the lower limit of normal for a 30-year-old is going to be different than the lower limit of normal for a 70-year-old. But the problem with interpreting lab results is that, right now, there are no age-specific ranges of normal. Meaning that giving a blanket definition of a testosterone level of less than 300 as the definition of hypogonadism is inaccurate. So you know the point I want to make is that if a guy has testosterone in the low-normal range, with low-normal meaning like 300 to 400, or 300 to 500 even, depending on their age, and comes in with symptoms, that may actually be a good candidate for treatment.

Dr. Paul Doghramji:

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Interesting. So talk to us about some of the labs a little bit more. When we order blood tests, there's a testosterone level, there's a free and total; which of these tests do we do?

Dr. Alexander Pasturszak:
Yeah, so, I do all of them. And the importance of that is when you think about total testosterone, that's basically the total amount of testosterone that's in that blood, but 98-99% of all testosterone is actually bound by proteins in the blood, and these include a protein called sex hormone-binding globular, SHBG, and albumin. So what you want to know is not only the total testosterone, but also the testosterone that is available to do the work, or free testosterone, which should be 1-2% of the total testosterone. So the reason you check both is, if a patient comes in and has, say, a normal total testosterone; say that total testosterone is 500, and has a low free testosterone and also has symptoms, then, you know, that patient should be considered for therapy because that total testosterone may not be available to work. The other point that's important is that, as a guy gets older, their SHBG actually goes up. So my SHBG being 40 is going to be lower than the average 70-year-old's SHBG, meaning, by definition, that I'm just going to have more testosterone available to do work than that 70-year-old would if our total testosterones were exactly the same.

Dr. Paul Doghramji:
So it's important to know the free and total. So once a patient is diagnosed, what treatment options are available, Alex, for our male patients? And what circumstances do you consider using them?

Dr. Alexander Pasturszak:
Yeah, so I think that's a really important and nuanced question in many ways. So, you know, obviously what most guys know about is, 'I have low T, treat me with testosterone.' Right? That's not always the answer. That's sort of the most common treatment, but you really have to talk – you really have to assess the actual patient, and what his goals are. And what I mean by that is, you know, in a young guy who's say in his 20s or 30s, who comes in with hypogonadism because it does happen, we need to know if this guy wants to have children, when he wants to have children, you know, and what risk he is willing to take. And the reason I say that is because testosterone – and I'm sure we'll talk about this – testosterone comes with a number of side effects; one of those being infertility. So in terms of returning back to your question, treatment options include testosterone, but they also include other drugs like clomiphene citrate, anastrozole, which is an aromatase inhibitor and blocks the conversion of testosterone to estrogen, as well as human chorionic gonadotropin, or hCG. So both Clomid and hCG stimulate natural production from the body, but are very safe for fertility in contrast to testosterone. So all those are treatment options, but again you need to know what the patient wants.

Dr. Paul Doghramji:
So just testosterone isn't the only option. So for those just tuning in, you're listening to SexMex on Reach MD. I'm Dr. Paul Dogramji, and today I'm speaking with Dr. Alexander Pasturszak about diagnosing and treating hypogonadism in our male patients. So, Alex, now that we've explored the signs and symptoms of hypogonadism and the different treatment options available, what are some of the risks or side effects associated with these therapies?

Dr. Alexander Pasturszak:
So just to talk strictly about side effects of testosterone, because this is where the rubber meets the road, and where most side effects happen. One of the most common side effects is infertility, and that's because testosterone will shut down the testicles, so the testicles will no longer make not only testosterone, which is where testosterone from me comes from, but they'll also stop making sperm. The testicles, because you know its sort of use it or lose it, start to shrink. The other two most common side effects include elevation in estrogen levels, and you know when I tell guys that, they kind of furrow their brows and look at me and say, 'Doc, what am I, turning into a woman?' And the answer is no, but you need testosterone to actually make estrogen. So even in women, the basis for estrogen is testosterone, but when testosterone levels go up, so do estrogen levels because those enzymes that convert testosterone to estrogen are pushed to make more estrogen. And that can cause nipple sensitivity, and it can cause breast growth. And then the other most common side effect of testosterone is an elevation in red blood cell count, or hematocrit. And that's because testosterone pushes the bones to make more red blood cells. All of these are easily managed, but men on testosterone in particular, as well as any of the other therapies that we just discussed need to be regularly monitored for these side effects, which again can be very easily treated.

Dr. Paul Doghramji:
And you know, interestingly, Alex, there's a lot of direct consumer advertising. There's been a huge increase in testosterone prescribing. Patients are coming to me and saying, 'I have low-T.' What do you make of all of that?

Dr. Alexander Pasturszak:
So, you know, this is – and I'm actually really glad you brought that up because this is one of those cases where the direct to consumer marketing has entirely changed the field of hormone and testosterone management in men. And the reason I say that is this direct to consumer push, the awareness that has happened that, you know, that patients now know or at least know to ask the question, 'well, is

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it low-T?' has sort of driven a drastic increase, in part – the drastic increase in testosterone prescriptions. Part of the problem is, you know, not all of these prescriptions were made on the basis of laboratory testing and symptomatic evaluation, right? So in study, about 30% of these prescriptions were written with zero testing. So patients ask their doctor for testosterone and, 'yeah sure.' And just like we talked about, testosterone can be a great drug, but it can be a dangerous drug, as well; it has a lot of side effects. So, you know, I think to answer your question, Paul, I think this is a good thing because I think patient awareness of conditions is really important, especially for guys who don't like to go see the doctor, you know but we need to take the responsibility as physicians and caregivers and sort of the, you know, gatekeepers to healthcare to evaluate and treat these patients appropriately.

Dr. Paul Doghramji:
Alright, so, based on what you just said, Alex, what does the future treatment landscape of hypogonadism look like? I mean, are there any therapies in the works that aim to address some of these side effects that you talked about?

Dr. Alexander Pasturszak:
Yeah, so I think the future is pretty bright for the future of hormone management. Now, I think testosterone is going to remain a mainstay of hormone management. The trick with testosterone I'm finding out is appropriately dosing it, right? So, if you look at the FDA recommendation for testosterone injections right now, the recommendation is to inject 200 mg once every two weeks. This symptomatically really doesn't work for patients because they get a huge peak in testosterone levels, and then, you know, within a few days – and they feel great, and then within a few days, those testosterone levels drop back down to close to normal, and they don't feel as good anymore. But then they have to wait another week or so for another injection. So what I'm getting at is you know most folks that do this on a regular basis have learned to prescribe less testosterone more frequently, right? So that's one sort of improvement that we've had in recent years. And then there's actually a lot of exciting drugs in the pipeline. You probably know, one of the first questions a patient asks you when you talk about treatment options is, 'Hey, is there a pill for that?' And they're really serious; they want the pill. They don't want to stick themselves with a needle, and they don't want to put something in some other orifice, right? You know, so there is an oral testosterone that has been approved in Europe. It will probably be approved in the U.S.; it wasn't approved first pass a year to year and a half ago. There are other drugs, which are called selective androgen receptor modulators, or SARMs, which are very exciting. And you know the cool thing about these drugs is that, depending on the tissue, they do different things. So you know there is the potential that some of these SARMs are going to be able to treat the symptoms and signs, meaning like muscle wasting, obesity, or weight gain, and bone density issues that are associated with hypogonadism without any of the side effects. So then there are some new technologies in the pipelines in various places throughout the country and the world that can also help us deliver any one of these drugs in a more controlled fashion. In a way, right now patients have to either put a gel on daily, do an injection once or twice a week. You know, it's definitely not the type of medicine that you would associate with 21st century, but these new technologies are going to be like really slick, you know, ways of delivering drug that the patient isn't going to have to worry about, that are really going to optimize and bring back to physiologic how the system should be working in the first place.

Dr. Paul Doghramji:
I see. So, Alex, any final takeaways to leave us with, and our listeners? Anything we haven't covered?

Dr. Alexander Pasturszak:
Yeah, so I think people need to walk away from this knowing that low testosterone, or hypogonadism actually, is common and readily treatable, right? But as both physicians and patients, if you end up on testosterone, really regardless of what you end up on, you need to be monitored regularly, so you need to see a doctor, you know, two to three times a year, have blood tests, have your dosing adjusted, and any other medications adjusted to treat any side effects, you know, in order to really dial it in. You know the other important point is that there are good treatment options for guys who want to be fertile. So the young guys who have hypogonadism and want to be treated, can be without sacrificing their fertility if they talk to the right person.

Dr. Paul Doghramji:
Well, Alex, I'd like to thank you for sharing your insights on how we can be more aware of hypogonadism in our male patients. It was great having you on the program today.

Dr. Alexander Pasturszak:
Paul, thanks so much. You know, this is a really important topic to discuss. We probably could have spent an hour on it. But pushing the awareness and letting people know that there are good treatment options and good monitoring is really important. So thank you.

Dr. Paul Doghramji:
Oh yeah, absolutely. I'm Dr. Paul Dogramji, and you've been listening to SexMed on Reach MD. To access this episode and others in this series, visit ReachMD.com/sexmed, where you can be part of the knowledge.

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