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Cholesterol Treatment Guidelines: Finding Clarity in the Confusion

Mimi Secor:
One in two adults in the United States have a total cholesterol over 200. One in three adults in the United States has cardiovascular disease. The recently-released American College of Cardiology and American Heart Association lipid guidelines have resulted in a firestorm of controversy and confusion in the world of dyslipidemia. Under these new guidelines, LDL goals are a thing of the past. On the other hand, critics suggest that many patients could be placed on statin therapy unnecessarily. You're listening to ReachMD on I Heart Radio, the channel for medical professionals.

Welcome. I'm nurse practitioner Mimi Secor, your host, and with me today is nurse practitioner Joyce Ross to discuss the management of lipids. Ms. Ross is a board-certified adult nurse practitioner, clinical nurse specialist, and clinical lipid specialist. She's past president of the Preventive Cardiovascular Nurses Association, and she is current president of the Northeast Lipid Association, a chapter of the National Lipid Association. Joyce Ross, welcome to ReachMD.

Joyce Ross:
Thank you so much. It's a pleasure to be with you.

Mimi Secor:
I know you have a busy speaking schedule, so I'm glad we could book you for this interview.

Joyce Ross:
I'm thrilled to do it. We need to spread this word. It's very important information.

Mimi Secor:
Absolutely. So with all the confusion surrounding the new 2013 cholesterol treatment guidelines, why is there so much confusion?

Joyce Ross:
Well, there's big a big elephant in the room, Mimi, and what that is related to is that there was a lot of misconception about what these guidelines did and did not do. So let me first tell you what they did not support, and then we can talk about all the good stuff. So the idea was that people thought that measurement of lipids were no longer indicated, which is of course not the case. We always need to take a look at the lipids to know what we're treating and why, and then following that, they talked about that you didn't need to do follow-up lipids once you put someone on treatment. Well, of course that's not true either. How are you going to know what your treatment is doing unless you follow it?

Where that kind if falls in is that when you put a patient on statin therapy, we don't have to measure their liver enzymes quite as often as we did in the past, because these drugs have proven themselves to be so spectacularly safe. And there's a misnomer out there that young people don't need to be treated. Well, that's not true either, because we do know that one in every 500 people has a genetic disorder called familial hypercholesterolemia, and in those young people, the sooner we treat them and the more aggressively we treat them, the more we stand a chance of avoiding cardiovascular disease for them. The other thing it talks about is older people should not be treated. Well, certainly older people are more prone to heart attack, and also to stroke, and so certainly treating the elderly that are in the well category, and you know the elderly population, 45 years, putting people into one boat is not a good idea.

So the young elderly, maybe 65 to 75 certainly are young, vibrant, and certainly require just the same kind of treatment that anybody else does, and when we look at the very old elderly, and I'm talking about over 85, we might then want to consider the fact that, well, what else is going on with them, and maybe not treat as aggressively. And then the other thing, the other misnomer is that non-statin therapy should not be used. Well, that is not the case. What it did bring to light is that we should use statin therapy as the first line, because

that's where most of our literature comes from, and we know that the mechanisms by which they work are what really does help with the lipid panel.

Mimi Secor:
I understand there's no suggested LDL goals in the new guidelines. Why was this changed, Joyce?

Joyce Ross:
That's correct, and the reason for that is the expert panel wasn't able to find controlled trials, evidence to support continuation of the LDL goal, and also did that with a non-HDL goal. It doesn't mean that we don't have goals to achieve with our patient, but they recognize the fact that maybe in lieu of all the clinical trials that they looked at, that lowering the LDL cholesterol about 50 percent might be just as effective.

Mimi Secor:
Interesting. Now, you started describing-are these the new sub-groups you're referring to, that you were describing, the for-statin groups?

Joyce Ross:
That's correct. What they tried to do is to make it easier for the provider to really be able to evaluate your patient pretty quickly and not have to go through too many steps. So what they did is they created this for-statin group of people, and these are the people who are most likely to benefit from therapy, and they tried to put them in a fashion that would be reasonable for everyone to understand. So the first of those groups is the individuals who have known cardiovascular disease, and of course, we know we want to treat them aggressively, and the second group are those individuals with primary elevations of LDL cholesterol that are greater than 190 milligrams per deciliter, and those are the ones that have that genetic disorder that I was mentioning before.

And then individuals 40 to 75 years of age with diabetes, but who do not have cardiovascular disease and have LDL cholesterol 70 to 189 are our third group, and certainly, this encompasses a great deal of the population. And the fourth group, which is a little bit harder to understand, are individuals with clinical atherosclerotic cardiovascular disease or diabetes, who are 40 to 75 years of age with an LDL cholesterol of 70 to 189, and an estimated ten-year risk of greater than 7.5 percent or higher. Now that sounds like a lot of jargon, but what it's really talking about is not everybody fits into the three categories above, but many people are at high risk, because they have many risk factors.

Well, the use of this new calculator that they designed, which is excellent, gives us the tool that if they score greater than 7.5 percent, then they warrant treatment. So we look at those four groups as our basis. Now, some argued that you would find many, many more people being treated with statin therapy related to that particularly fourth group, but my take on that, Mimi, is I know and you know that the most important thing is to get that patient in front of a commission and really looking at their risk factors. It doesn't mean that every person who has a 7.5 or above is going to be treated with statin therapy, but it means they warrant a sit-down with their provider to discuss their cardiovascular risk to avoid problems in the future.

Mimi Secor:
Good advice, and do you think primary care providers are really well-equipped to deal with these new guidelines?

Joyce Ross:
Well, I think that they've been very afraid of these new guidelines, directly related to that elephant that I talked about before. They've heard so many things that are not true about the guideline, they're afraid that they go away from what they're used to, they won't do as good of a job for their patients. The other part of that, Mimi, is there's a problem with the fact that they don't talk about non-HDL cholesterol, high triglycerides, and low-HDL cholesterol, which are critically important. We know that many people who have LDL cholesterols that are to the targets that we always treated at, but still have a problem with going on to develop cardiovascular disease, and this is called a residual risk, and because that's left out, many people don't trust the new guideline.

Mimi Secor:
Well, we'll certainly talk about triglycerides here shortly. Are you saying that the risk calculator is something that primary care providers should be using as part of these new guidelines?

Joyce Ross:
I think it's very helpful for the provider, especially in primary care, to use this. It's quick and easy thing to do. It can be downloaded easily, either on your computer or on your handheld phone, and it's a simple and easy to use, and it's direct, and it gives you information. Now, the downside to that is it's not really used for people under 40 or 79 years of age. So you have to still really use your clinical judgment, of course, but it is a good tool that elicits conversation with the patient about where their risks really lie.

Mimi Secor:
What's the web site for downloading that risk calculator, Joyce?

Joyce Ross:
You can look at-basically there are several different places you can look at it. You can actually look up the new guideline, which would be on your American Heart Association web site, and that's one good place to look at it. You can also find it under the article which was written by Stone, Dr. Stone, Neil Stone in 2013, and they were called the ACC/AHA Blood Cholesterol Guideline, and you can find all that information and references of how to download that, but you've just put the new ACC guideline calculator, you might find it'll pop right up. I've seen it many, many different ways.

Mimi Secor:
Awesome. Do they have an app for that?

Joyce Ross:
They sure do. I've seen many apps for that. Now, I want to really reinforce to that the other means of calculating risk for patients are not out of vogue at all. You still might want to consider using the Framingham or the Reynold's Risk Score, but the one thing about the Framingham that was poor before was that it doesn't really calculate the risk well for women, unless they're very old women. What I love about the new calculator, it really hones in on the women, and really, that's the people who are being identified more, and we all know that those are the people having the heart attacks and dying more than the men do today. So it's a big thing.

Mimi Secor:
You know, I never thought about GERD in the same way as I did a few weeks ago. I had a little bit of heartburn in the middle of the night, and I'm like, "Oh, man." I checked my pulse right away. It ended up just being probably stress related to finishing my semester, but it was funny. I never would have done that at age 30, but not being a spring chicken any longer, I went right to that pulse.

Joyce Ross:
Good for you.

Mimi Secor:
And took a little baby aspirin.

Joyce Ross:
Did you chew it?

Mimi Secor:
What's that? Yeah, I chewed it. You kidding?

Joyce Ross:
Well, you have baby aspirin, you want to chew three of them.

Mimi Secor:
Chew three of them, okay.

Joyce Ross:
Yep, because you want a 325-milligram aspirin, so you can take three or four, depending on what your small aspirin is.

Mimi Secor:
All right, good to know.

Joyce Ross:
And you want to chew it for sure, get right into your system to work.

Mimi Secor:
All right. Well, what do clinicians need to know about metabolism and drug-to-drug interactions with statin therapy?

Joyce Ross:
Well, I think this is a really incredibly important thing. You know, statin therapy over the years has gotten a bad reputation, and it's gotten a bad reputation not because statin drugs are bad. The biggest side effect of statin drugs, as far as I'm concerned, is they save lives, but many people have developed these problems with muscle ache and pain, and some other things like maybe increased ALTs and AST, but we know that part of the problem is that our patients, especially as they get older, are taking so many other medications. And the Cytochrome P450 pathway is one of those pathways that really is responsible for breaking down so many of the drugs that we

commonly use in practice, those are common things like Biaxin, erythromycin, and diltiazem and verapamil, any of those cyclosporins and the protease inhibitors.

These are all drugs that really use that pathway, and of course, the protease inhibitors are something we have to use for our patients. So we have to be smart in how to use the drugs appropriately so that they don't cause a drug-to-drug interaction. Of the four basic, strong statin drugs that we've used in the past, we have Crestor, which of course is rosuvastatin, Lipitor which is atorvastatin, Pravachol which is pravastatin, and Zocor which is simvastatin. Now, when we talk about the new guidelines in a little bit, we'll talk about the fact that they recommend a use of the rosuvastatin and the atorvastatin and their dosage because of being the strongest of the statins, but there's a difference between the two of them, and you need to understand that.

The rosuvastatin is hydrophilic, and the Lipitor or the atorvastatin is lipophilic, which means that the body has to break down that drug before it can be used. So the Cytochrome P450 is responsible for converting those lipophilic substance into water-soluble products. So if we have a product that doesn't have to go through that step, much healthier for the patient. So that's one of the important things about the Cytochrome P450 pathway. So the other two, pravastatin also is a water-soluble or hydrophilic drug, and Zocor or simvastatin is lipophilic. So they're all different. They are different in how they act, and they're different in how the body metabolizes them.

Mimi Secor:
That was very concise, thank you. I might still have to come to your lecture and listen to that again.

Joyce Ross:
For sure. I'm so used to it.

Mimi Secor:
Are triglycerides a cardiovascular risk factor?

Joyce Ross:
You know, Mimi, they sure are, and if you asked me that question several years ago, I would have probably said, "I don't think so," and it's not because I wanted to ignore the fact the triglycerides were there, but in the beginning, we just didn't have the kind of literature that supported exactly what that meant, and we know today that the triglyceride always when it's high, always gives you low HDL cholesterol. It's an inverse relationship between the two, and today we know that there's many, many more problems when triglycerides are high. And of course I did mention the low HDL cholesterol, but you have these very small, dense LDL particles when you have high triglycerides, and these small, dense particles can wiggle their way into the endothelium, causing places for plaque to start to develop, and of course, that's the beginnings of cardiovascular disease.

We also know that high triglycerides are affected by coagulation change. So you are more clotty when you have that. You're also more prone to have inflammatory markers at that point too, so that's very important, and non-HDL cholesterol, which had been the second treatment parameter for cardiovascular risk is high when you have a high triglyceride, and that non-HDL cholesterol, I think we should really still be adhering to, because if you want to know, "Is my patient doing okay," I've got my LDL in order, but my triglycerides and my HDL are not in order, what do I need to do? You don't need a special test. If you just take total cholesterol minus HDL cholesterol, it gives you non-HDL cholesterol.

So that means that you are having all those _____ (12:50) proteins that are atherogenic right there in one reading, doesn't cost a penny, non-HDL cholesterol, and it shouldn't be higher than 30 points above your targeted goal for your LDL cholesterol. And when that was presented in the last set of guidelines years ago, it wasn't presented clearly, and people didn't use it. Today people still ignore that, and consequently, we still people going into the hospital very often with very good LDL cholesterol, unfortunately, high triglycerides, low HDL, and a heart attack.

Mimi Secor:
So what causes high triglycerides?

Joyce Ross:
That's a great question. You always have to remember that if you didn't choose your parents carefully, there could be a genetic disorder, and of course, there are primary causes of hypertriglcyeridemia related to genes. These are not as often found as what of course we see related to the other risk factors. The biggest one, Mimi, is really dietarily-related, and high carbohydrates, high fat intake, and high alcohol intake really pushes up those triglycerides too, and we have to remember that lack of physical exercise, which is a big problem in our society today, is part and parcel to these triglycerides going up. We also have to think a lot about medications.

Many of the medications that we prescribe for our patients can affect the triglyceride, and they're particularly estrogen, and we always give our women these estrogen things, whether it's birth control pills or status post-cancer with tamoxifen therapy or something like that,

but those can dramatically push up the triglyceride level. So you need to be aware when patients are put on new medications, you might want to know what that triglyceride looks like. Protease inhibitors and thiazide diuretics, beat-blockers and steroids are another bunch of the group of the medications that can affect the triglycerides dramatically.

Another thing that I've really become more aware of and think about a lot more these days are the use of psychotropics. We know so many people in our society are now taking these type of medications, and they are known also to increase the triglyceride level. Now, it doesn't mean we can't use them. What it means is that we need to be prudent about when we put them in place, how much we use them, and if there's something else that we can use that will do the same job for us.

Mimi Secor:
Wow, you are really educating us today. Are there any new medications, Joyce, on the horizon for treating dyslipidemia?

Joyce Ross:
Yeah, there are. It's really exciting today, because we have really recognized that we have so many more reasons why people have high cholesterol, and when we're looking at the genetic disorders, that's how we've learned much of this, and of course, we always know. We learn from those who have disease an those who don't have disease, and in familial hypercholesterolemia, which is one in 500 of the population, there have been new drugs out there, but these have been totally designed for the person who has homozygous FH, and of course, homozygous FH means that you got a bad gene from your mother and a bad gene for your father. Talk about really choosing the wrong parents, but these are parents that have premature heart disease a lot.

And these children will have their highest level of cholesterol at age two, and that's why there's recommendations when there's high risk in the family for early disease or for high cholesterol, the child be tested by their pediatric provider at age two years old. If not, these children can die from their heart attacks when they're 15, 20 years old, and that's so sad, and so preventable, because today, we do have products just for them. We have two new products out there that are designed for the homozygous FH population. I'm hoping that maybe one day we might see them in the severe heterozygous FH, but one of the names of them is Juxtapid, you might have heard about that, it's lomitapide, and what's good about that is it works differently than what we use our other drugs for.

So what we're looking at now are other mechanisms. So when you look at this Juxtapid, it is an MTP inhibitor. It's not a statin drug at all, and it works very differently for your patient population, and so we look at today how we can treat this patient and get their LDL cholesterol down by other means other than just the statin drug. Now, what's great is you can use a statin drug together with this and have some really great response. The second one is called _____ (16:43), which is _____ (16:44). It's an interesting thing. It's called an antisense oligonucleotide, and that's why we kind of call it just the _____ (16:50). This is another way of treating LDL cholesterol that is different from the MTP inhibitor that I mentioned, and also different from the statin drug.

So it's an exciting time, and the last bunch of drugs I'd like to talk about are those potential things, and potentially we have a really hot drug that's coming up soon, I hope. It's called a PCSK9 inhibitor. What was found through research is that people who have this mutation have very, very low HDL cholesterol, when they have this particular genetic disorder, and they don't get cardiovascular disease, and they have low LDL. So what has happened is the drug companies have produced now a product that's in phase three right now that really works that way, to give to people to help them lower their LDL cholesterol. So isn't that fabulous? And then we have other things for HDL cholesterol that are in the pipeline, but other than that, there's not a whole lot else going on at the moment.

Mimi Secor:
It is. You know, we're running out of time today, Joyce. We're going to have to have you back on another show to talk more about this. As always, it's a great pleasure talking with you. We always learn so much from you.

Joyce Ross:
Thank you, thank you.

Mimi Secor:
I'm nurse practitioner Mimi Secor, and you're listening to ReachMD. Thank you for listening.