The Importance of Non-HDL Cholesterol Testing

NON-HDL TESTING.

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Hi, this is Dr Thomas Bersot, President of the National Lipid Association and I would like to welcome you to Lipid Luminations hosted by Dr. Larry Kaskel and presented by the National Lipid Association.

My guest today Dr. Terry Jacobsen, Professor of Medicine, Director in the Office of Health Promotion and Disease Prevention at Emory University School of Medicine and we are going to discuss non-HDL testing.

DR. LARRY KASKEL:

Dr. Jacobsen, welcome to Lipid Luminations.

DR. TERRY JACOBSEN:

Thank you. It is a pleasure to be here Larry.

DR. LARRY KASKEL:

For all those listening who have never heard of this, they have heard of HDL, they have heard of LDL, but what exactly is non-HDL testing?

DR. TERRY JACOBSEN:

Non-HDL is a test; a measure of all your atherogenic lipoproteins while LDL is one of the best measures of risk assessment. It turns out, it underestimates risk in certain patients and on every laboratory slip that folks get; one can get or calculate a non-HDL. It is simply subtracting HDL from total cholesterol and it measures not only LDL, but all the other atherogenic particles.

DR. LARRY KASKEL:

Such as?

DR. TERRY JACOBSEN:

Such as it measure what we call the LDL, which is a measure of triglycerides, measures what we call intermediate dense lipoprotein and also measures lipoprotein A. Now on a typical laboratory slip, one does not get these individual measurements, but simply subtracting the good cholesterol HDL from the total, you are really capturing all the bad atherogenic proteins. I call it the poor man's glycosylated hemoglobin of lipids. It captures all the risks and all the different particles that are atherogenic in the blood stream and it is not that LDL is a bad measure of risk, it still is our main target, but our secondary target of treatment particularly in patients with elevated triglycerides above 200, is the non-HDL. So here is something very simple, on every laboratory slip that one can calculate themselves. Hopefully, labs in the future will calculate this for physicians and health provider, but it has been a battle to get them to do that frankly.

DR. LARRY KASKEL:

So, whatever battles are going on in our government seem to be also going on between the major labs and we cannot come to any bipartition agreements on getting this as a national guideline?

DR. TERRY JACOBSEN:

Ya, I mean with lipids, there is no such thing as a bipartition agreement. The goal is to reduce cardiovascular risk in our patients. I think all of us agree with that and the thing is that we have done tremendously great job getting LDL down and LDL to goal, but what we have appreciated over the years is many patients still have events even at goal and we call this residual risk, the risk beyond their LDL measurement and this is captured in the non-HDL cholesterol and that is why the National Lipid Association believes it is a very important target of therapy that is being overlooked on every lipid panel received in the United States today. So really to reduce cardiovascular disease in this country, we want to optimize all lipids as well as lifestyle and other therapies. Non-HDL is the secondary goal of therapy after LDL particularly in patients with triglycerides above 200.

DR. LARRY KASKEL:

Let us take an example case. Let's say we have a 46-year-old gentleman with total cholesterol of 260 and an HDL of 40. By your calculations, simply all we do is take the 260 subtract 40 and we have non-HDL of 220. Is that correct?

DR. TERRY JACOBSEN:

That is correct. See very simple. Took you all 5 seconds to calculate that.

D. LARRY KASKEL:

And that 220 obviously sound high. For some reason, we need to have the non-HDL 30 points higher than the LDL. Can you explain where that comes from?

DR. TERRY JACOBSEN:

Sure. Essentially, we all know the LDL goals. For CHD, it is LDL less than 70. We now advocate even for diabetics less than 70. For patients with primary prevention and 2 risk factors, their LDL goal is 100. We set the non-HDL goal 30 points higher than their LDL goal. So if your LDL goal is 70, your non-HDL goal is 100. If your LDL goal is 100, your non-HDL goal is 130. The way it is set and the reasons 30 was chosen is that generally the measurement of triglycerides if you divide that by 5 that equals what we call the VLDL, very low-density lipoprotein and since a normal triglyceride is considered less than 150; dividing 150 by 5 gives you 30. So on top of your LDL, adding these 30 points that is what we consider a normal and that is where the derivation of the 30 mg came from with the understanding that we want triglycerides below 150. If you have elevated triglycerides and other particles in your blood stream that are atherogenic, your non-HDL will be high and the beauty of non-HDL is that we can intervene on it like we can intervene on LDL. We have great treatments, both nonpharmacologic and pharmacologic to get non-HDL to goal.

DR. LARRY KASKEL:

Let us talk a little bit about what some of those interventions may be, assuming we have a patient that is at goal with their LDL and they are on a maximum dose of the statin and whatever dose of statin that took to get their LDL down to 70 and now we are going after the non-HDL. What is the first line of attack? Do you use lifestyle change? Do you use exercise? Do you use carbohydrate avoidance? Do you use different oils? What do you like to use?

DR. TERRY JACOBSEN:

The lifestyle change is still the first thing we do in all patients. Often, we do it simultaneously with drug therapy if you are at high risk. If you have CHD and diabetes, I will start lifestyle, diet and.

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