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## 5-Step Approach to Managing CVD Risk in At-Risk Patients

### Announcer Introduction:

You're listening to REACHMD. Welcome to this Medical Industry Feature entitled, "5-Step Approach to Managing CVD Risk in At-Risk Patients" sponsored by LabCorp. This program is intended for physicians.

### Dr. Birnholz:

To my colleagues listening today, I pose the following: are you managing LDL-related atherosclerotic cardiovascular disease, or ASCVD risk, with a reliable measure of LDL? Have you had a statin-treated patient or a type 2 diabetic who adhered to your prescribed treatment and still experienced a cardiac event? Today, we'll explore management alternatives that may help mitigate such outcomes.

I am your host, Dr. Matt Birnholz, and I would like to welcome Dr. William Cromwell, Medical Director for Cardiovascular Disease at LabCorp, headquartered in Burlington NC. Dr. Cromwell, thank you for being here to share your insights on LDL-related risk management in at-risk patients.

### Dr. Cromwell:

Well thanks. It is my pleasure to be here.

### Dr. Birnholz:

So, let's focus on the patient populations I mentioned earlier: those with type 2 diabetes and statin-treated patients who suffer cardiac events despite prescribed treatments. Where are the care gaps, and what can clinicians do differently that might lead to better outcomes?

### Dr. Cromwell:

Well, the causal role of LDL particles in the development and progression of atherosclerotic cardiovascular disease, or ASCVD, has been known for decades; however due to the wide availability of LDL cholesterol, e.g., measurement of cholesterol carried within LDL particles, this has been adopted in clinical practice as the customary measure to estimate LDL quantity and to evaluate LDL-related atherosclerotic cardiovascular disease risk. However, it's important to remember that diabetic patients, statin-treated patients, and those with cardiometabolic risk factors often have variable amounts of cholesterol within LDL particles, so managing these patients with traditional LDL-C measures may not accurately reflect their ASCVD risk. Two readily available measures can assist clinicians in evaluating these patients and neither relies on the variable cholesterol content within LDL particles. The FDA cleared LDL particle number, or LDL-P, by nuclear magnetic resonance, which directly counts LDL particles, and apolipoprotein B, which estimates LDL particles.

### Dr. Birnholz:

And how would clinicians integrate particle measurement into the care of these patients?

### Dr. Cromwell:

So, let me share a suggested 5 step algorithmic approach that I use with patients in the context of an actual patient case. So, consider a 45-year-old female with a 5-year history of type 2 diabetes mellitus who presents for evaluation of dyslipidemia. My findings include a past medical history of type 2 diabetes with, what was described as, mildly elevated cholesterol and triglycerides noted by the patient at the time of her diagnosis. Otherwise, findings are unremarkable. Her current medications include: metformin 500 mg extended release, twice daily, and enalapril 2.5 mg, once daily. Her family History includes coronary heart disease in a father who had 3 heart attacks, first at age 45. The patient also reported high cholesterol in the father and high triglycerides in one brother, but details are unknown in both. Her review of systems was unremarkable with weight unchanged for the past 6 months. And on physical examination we are talking

about a blood pressure of 120/76, pulse of 72, weight 156 pounds at 5'6" tall, and a waist circumference of 30". That gives her a BMI of 25.2, but otherwise, unremarkable. So, the patient also reports walking 45 minutes, 5 times per week that she tolerates well, and she is also generally following an 1800 calorie ADA diet. So, the first step is, I would assess her 10-year and lifetime ASCVD risk. Given that she has type 2 diabetes mellitus and 1 additional major risk factor -- in this case, family history -- this would confer high ASCVD risk according to the 2013 AACE guidelines, and a 10-year ASCVD risk of 2.0% according to 2013 ACC/AHA guidelines. Her lifetime ASCVD risk would be high at 39%. So, based on that level of risk, step 2, I would initiate an appropriate course of therapy. In this case, clinical judgment indicates lipid lowering therapy is appropriate, and I prescribed atorvastatin 20 mg, once daily. I also specify an LDL target goal, and I do so for all of my patients, because individual response to therapy is variable, and it's important to be able to identify patients' compliance and those who harbor residual ASCVD risk, as well as incremental risk reduction following adjustment and therapy. So, I would also, and I did at this time, reinforce the importance of an ADA diet.

Dr. Birnholz:

If you are just tuning in, you are listening to REACHMD. I am your host, Dr. Matt Birnholz, and I'm speaking with Dr. William Cromwell about reliable measures of CVD risk in at-risk patients. Dr. Cromwell is sharing his 5-step algorithmic approach for physicians to use in their own clinical practices. So, to review, step 1 is to assess the patient's 10-year and lifetime ASCVD risk, and step 2 is for us to institute an appropriate course of therapy. Now if we continue from there, what comes next in your 5-step plan?

Dr. Cromwell:

Well, step 3 would be, after approximately 12 weeks of therapy, it's a good idea to assess the patient's response with an outcome-proven LDL-P measure. The patient's baseline values showed a total cholesterol of 194, a triglyceride of 135, HDL cholesterol of 42, LDL cholesterol of 125 and a non-HDL cholesterol of 152. When I assess therapy efficacy, her LDL cholesterol level after 12 weeks of atorvastatin therapy, had gone down 43% to 71. However, at that time, her LDL-P value was 1325, significantly elevated and well above the target of less than 1000 recommended by the American Association of Clinical Endocrinologists. So, in this setting with persistently high LDL particle number, due to the variable amount of cholesterol and LDL particles frequently encountered in diabetic patients, statin-treated patients and those with cardiometabolic risk factors, clinical judgment may support an additional adjustment of therapy. Now, due to her suboptimal LDL particle number response, I changed her statin therapy from atorvastatin 20 mg daily, to rosuvastatin 20 mg once daily, and reenforced the importance of diet. At 3 months followup, her labs have improved, in that her LDL cholesterol went from 71 to 62; her particle response to therapy went from 1325 to 1210. So, what is shown here is a significantly elevated LDL particle number still above a 1000. So, step 5 would be that at 12 weeks of therapy, we would further assess therapeutic response looking at LDL particle number and adjust as indicated. In the case of my 45-year-old diabetic patient, I added ezetimibe 10 mg once daily to her rosuvastatin 20 mg once daily dosage and reenforced diet. Twelve weeks after this adjustment her LDL particle number response had improved even more. She went from 1210 to 923, which is below the 1000 mg/dL LDL particle number recommended by the American Association of Clinical Endocrinologists. I also charted an 8-pound weight loss during that period of time. So, since this patient is tolerating her medical therapy well and has had a good LDL-P response to therapy, thereafter, I would check annually to make sure that this was an LDL particle number response that was maintained.

Dr. Birnholz:

Dr. Cromwell, before we wrap up our discussion today, is there a particular practice pearl that you would like our listeners to take away today?

Dr. Cromwell:

Absolutely, and that would be that the metabolic status of diabetic patients, statin-treated patients, and those with cardiometabolic risk factors typically alters the cholesterol content of LDL particles. Managing these patients with traditional LDL cholesterol measures may not accurately reflect their ASCVD risk. Two measures: LDL-P by nuclear magnetic resonance, which directly counts LDL particles, and apolipoprotein B, which estimates LDL particles, are readily available to clinicians and neither method relies on cholesterol content within LDL particles.

Dr. Birnholz:

Well, with that, I very much want to thank our guest, Dr. Cromwell, for speaking with me today and sharing this information with our ReachMD audience. Thanks again, Dr. Cromwell.

Dr. Cromwell:

Well, thanks. It's been my pleasure.

Announcer Close:

You've been listening to REACHMD. The preceding program was sponsored by LabCorp. If you have missed any part of this discussion, visit [ReachMD.com/LDLQuantity](https://ReachMD.com/LDLQuantity). Thank you.

