

Conversations in Cardiology: Should a Lipid Panel Be Required Before Coronary Angiography or PCI?

Morton J. Kern, with contributions from Sam Butman, Scottsdale, Arizona; George Dangas, New York, New York; Tim Henry, Cincinnati, Ohio; Ajay Kirtane, New York, New York; Lloyd Klein, Sonoma, California; Kreton Mavromatis, Atlanta, Georgia; Phillip Mumford, Houston, Texas; Jeffrey Moses, New York, New York; Srihari S. Naidu, Westchester, New York; Kimberly A. Skelding, Seattle, Washington; George Vetovec, Richmond, Virginia; Peter Ver Lee, Bangor, Maine; Bonnie Weiner, Worcester, Massachusetts

Percutaneous coronary intervention (PCI) long-term outcomes depend on more than just technical expertise in stent placement and optimization. Maintenance of optimal post PCI medical therapy, including drugs to control lipids, is a key part of best practices. However, at least two conditions prevent many of our patients from getting the best post PCI care: (1) Lipid therapy, (eg, statins) are not prescribed routinely after the procedure, and (2) patients do not always continue the recommended drugs.

Dr. Ajay Kirtane recently published an opinion (The Case for Inclusion of a Lipid Panel in the Standard Precatheterization Laboratory Blood Draw — Stating What Should Be Obvious)¹ in *JAMA Cardiology* addressing lipid testing as part of standard pre-cath labs. Dr. Kirtane and colleagues have implemented this approach at Columbia University in New York, New York.

Dr. Kirtane asks, “I know of a couple of other places who do [pre-cath] lipid testing, but I think it is by far the exception rather than the rule. What are your thoughts?”

This question is important. I sent it around to our cath lab experts for some responses.



Mort Kern, Long Beach, Calif.: Ajay, this is a good idea, but at this point, I think there will be some pushback. From our more technical approach, we (the interventionalists) usually don't take a role in the patient's lipid management but may call the referring MD to get him on board and recommend starting statins or Repatha (Amgen). I'm sure some other colleagues take a more ownership role of the cath patients, but turnover and workflow issues, as you note in the article, are real barriers. Duplicate lab draws are an issue, but a review of the labs not directly impacting the procedure doesn't usually raise a flag.

George Dangas, New York City, New York: At Mount Sinai, we include lipids, C-reactive protein pre-cath, and specific recommendations for lipid

Rx in post cath report. A survey would need several more questions to be considered; this issue is an area of clinical interest since it affects outcomes in a major way.

Peter Ver Lee, Bangor, Maine: I remember reading a paper years ago where if a cardiologist started a statin on a patient, the primary care provider (PCP) tended to continue it and not change it. If we left it up to the PCP, it never got started, or they started Pravachol (Bristol-Myers Squibb) at 10 mg. I start every ST-elevation myocardial infarction (STEMI) and non-STEMI at 40 mg or 80 mg of atorvastatin. Every elective PCI I see in the office is on a high-dose statin if they can tolerate it. PCPs up here in Maine are now almost 100% physician assistants (PAs) or nurse practitioners (NPs). If cardiologists don't look at the lipid values, nobody does.



Bonnie Weiner, Worcester, Mass.: I agree with Ajay that we should take some responsibility for this as well at least identifying new or incompletely treated diabetes. The STEMI population may not have accurate lipid assessments acutely, but other risk factors need to be addressed and data would suggest that these patients should get aggressive lipid management anyway with appropriate follow-up. We don't think twice about treating blood pressure (BP) or smoking cessation, so why should we not take the larger view? My experience is that primary care and even some of our cardiology colleagues don't always stay on top of these things or are not as aggressive as we think they should be, or doubt the data suggesting optimizing outcomes. I wish this was not the case, but experience tells me otherwise.



Phillip Mumford, Houston, Texas: I think that's a great point, Bonnie, but will the cardiologist follow up with the patients' progress? But what if the patient stops following up? It then falls back to the PCP again, someone

who didn't address it before. I agree this issue is just as important as any other [aspect of PCI] to be treated, it just needs to be followed and maintained. [For example,] Some STEMI patients don't even have a PCP, so treating all issues during the STEMI visit is necessary. [The interventionalist must] also give the patients the information as to what and why these issues need to be addressed. [It may be that the STEMI] is the key that makes them complete regular treatment.



Bonnie Weiner, Worcester, Mass.:

Thanks, Phillip. Many of these patients who do not have previous physicians, particularly cardiologists, may wind up being “ours” [ie, the interventionalist], further making it our responsibility to optimize their care. Patients choosing not to follow up with anyone are always going to be an issue and this is one of the gaps in the health care system in general.



Sam Butman, Scottsdale, Ariz.:

Here are my humble thoughts.

1. Lipid testing was part of my order set for my entire life as a Cath Lab Director. No patient ever received a bill for this lab order, be it outpatient or inpatient.
2. I did so my entire 21-year tenure at University of Arizona and the 15 years in clinical practice that followed, since it seemed both a good “doctor” thing to do and a potential valuable research report (which I never did in either institution!).
3. In the teaching hospital arena, it is amazing how many patients come and go without lipids being done, even STEMI! This can lead to lipid testing being done later with inevitable lower values due to the acute phase reactants, to some extent.
4. Hospitalists may think a cardiologist will order the testing, so at times, no testing is done!
5. In office-based practices, PCPs cannot follow up “everyone” and cardiologists are not immune to the same in a busy practice.
6. This simple blood draw and report is a great chance either to get someone started on the needed meds or keep them on track with their current lipid status.
7. Finally, it just seems like a good thing to do as a doctor who cares for a patient, rather than as a transient point of care.

Kreton Mavromatis, Atlanta, Georgia: I agree with checking lipids for every cath patient, the vast majority of which have atherosclerotic cardiovascular disease (ASCVD). Low-density lipoprotein (LDL) is an easy number to look at and act upon for even a busy interventionalist; it is a very teachable moment for the patient (and every ASCVD patient should be aware of their LDL, just like they are aware of their BP and hemoglobin A1C); and in many cases,

it is the only proven lifesaving “intervention” the interventionalist has the opportunity to perform. While we don't follow up many of our patients, a recommended “plan” can be put in the cath report.

We did a study showing how poor medical therapy is for post-PCI patients² [MK: The study concluded that consistent declines in medical therapy use following PCI over time were associated with worse outcomes. Further efforts are needed to promote long-term adherence to secondary prevention therapies after revascularization.] Checking lipids would be a step in the right direction.



Srihari S. Naidu, Westchester, New York: I see this more like cardiac rehab. We absolutely must treat the patient holistically with intervention, and then recommend and guide the patient toward appropriate secondary prevention alongside of cardiac rehab, nutrition, and weight loss programs, and of course lipid management, diabetes management, and hypertension control. All of these can be recommended and handed off to the patient or referring. I agree that we can do a better job at discussing these aspects while the patient is a captive audience for their PCI. Like STEMI patients and smoking cessation, compliance is always highest when you have the patient's attention.

Kimberly A. Skelding, Seattle, Wash.: I am an outlier, but I believe that a coronary event is a teachable moment. I look at lipids and I screen for diabetes/glucose intolerance. It may be our only chance to have this conversation. Maybe they won't follow up or don't have a PCP. But if we can affect even a fraction of these patients by showing them data, I believe it is important. I would LOVE to never wake up or rarely wake up for that 2 am STEMI!



George Vetovec, Richmond, Virginia: I will perhaps be a greater outlier than Kim and others. My experience was that PCPs, likely a result of their overwhelming practice numbers, do not “hone” lipid levels well and hope to have good outcomes (patients and referring docs rarely distinguish restenosis from progressive disease – it is simply that the patient/procedure “failed”). I even followed patients short term to optimize lipid management. So I think getting lipids is reasonable.



Jeffrey W. Moses, New York, New York: Back in the 90s when stenting was inpatient, we got a grant from Park Davis (when it was still independent) for a full-time employee (FTE) to run a predischarge class for patients and families, educating them on their dual anti-platelet therapy (DAPT), but also to emphasize statin use (then the new kid — Lipitor [Pfizer]). We thought in-house initiation would increase compliance as part of the package that keeps the

	Unit	Optimal	Intermediate	High
Total Cholesterol	mg/dL	<200	200 - 239	>239
	mmol/dL	<5.2	5.2 - 6.2	>6.2
LDL Cholesterol (calculated)	mg/dL	<130*	130 - 159	>159
	mmol/dL	<3.36	3.36 - 4.11	>4.11
HDL Cholesterol	mg/dL	>60	60 - 40	<40
	mmol/dL	>1.55	1.55 - 1.03	<1.03
Triglycerides	mg/dL	<150	150 - 199	>199
	mmol/dL	<1.69	1.69 - 2.25	>2.25
Non-HDL-C (calculated)	mg/dL	<130	130 - 159	>159
	mmol/dL	<3.3	3.3 - 4.1	>4.1
TG to HDL ratio (calculated)	mg/dL	<3	3 - 3.8	>3.8
	mmol/dL	<1.33	1.33 - 1.68	>1.68

*New LDL level goal <70mg/dL is now accepted.

stents open (and more). We continued it until the hospital stays became so short there was virtually no time for the class. The idea was if you start an outpatient drug and you feel lousy the next day, you drop it. But if it is part of a lifesaving “package” of meds, you won't. We did lose some opportunities with our high-throughput models.



Tim Henry, Cincinnati, Ohio: Not only should you measure lipids, but it is OUR responsibility to make sure their LDL is <70mg/dL. So we should have standardized protocols that if you are not at goal you should (1) optimize statin; (2) add Zetia (Merck/Schering Plough Pharmaceuticals); (3) start the PCSK9 inhibitor and give them the first dose. If someone wants to disagree and say <50 mg/dL, I won't disagree with them. Table 1 is normal lipid values. This is especially important for acute coronary syndromes (ACS): absolutely, positively should be in your standardized NSTEMI/STEMI protocols, but I think it is true for PCI as well.



Lloyd Klein, Sonoma, Calif.: A fasting lipid panel should be part of the routine interventional evaluation. It has been my practice to manage the abnormal lipids to goal if the PCP does not. It is essential that we manage these cases aggressively because my experience is that many PCP start the lowest dose of statin and never check the values again. We also should evaluate for particle size, lipoprotein (a), and high-density lipoprotein abnormalities when appropriate. This is as much our responsibility as advising smok-

ing cessation, weight loss, diabetes optimization, and hypertension therapy.

The Bottom Line

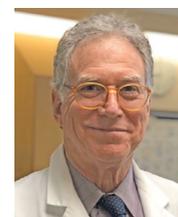
Mort Kern, Long Beach, Calif.: Small things can have big impact. I had not paid attention to this until Dr. Kirtane raised the issue. I agree with him and Dr. Ver Lee that if we don't start the ball rolling, lipid treatment may not get started by the PCP, to the detriment of the patient. Let's test the lipids, start the medication, inform the PCP, and use best practices for our patients. ■

References are available with the article online. Scan the QR code:



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References

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