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Lp-PLA₂ testing recommended in major Guidelines

Two major guidelines were recently published that include recommendations for Lp-PLA₂ testing:

The *2010 ACCF/AHA Guideline for Assessment of Cardiovascular Risk in Asymptomatic Adults* as published in the *Journal of the American College of Cardiology* in November 2010 recommended Lp-PLA₂ testing to be performed or administered (Class IIb, Level B Evidence)¹. In accordance with the nomenclature of the ACCF/AHA Guidelines recommendation, the impact of the treatment effect as indicated by a Class IIb designation suggests the benefit outweighs the risk and the procedure may be considered. For a further description of the Guidelines classification see reverse*.

It should be noted that, upon examining the reference list and discussion of the *Task Force on Practice Guidelines* (the "guidelines writing committee"), there is often a year or two gap in reference materials that the committee considered for the report. There are important peer-reviewed, published Lp-PLA₂ studies from the 2009-2010 period that provide further supporting evidence to bolster the Lp-PLA₂ recommendation that were not included in the present ACCF/AHA Guidelines. Most notably, missing from the references considered by the committee for these guidelines was the publication in *Lancet*, The Lp-PLA₂ Studies Collaboration (LSC) of 32 prospective clinical studies². The researchers found elevated Lp-PLA₂ levels remained an important risk factor for heart disease even after adjusting for existing risk factors such as high cholesterol and high blood pressure. The strength of this predictive effect was equivalent to that seen for such well-established markers of CVD risk as systolic blood pressure and non-HDL cholesterol. With inclusion of this publication that contains a meta-analysis of multiple populations, it is reasonable to argue for Level A evidence over the stated Level B evidence.

Take Home Messages

2010 ACCF/AHA Guideline for Assessment of Cardiovascular Risk in Asymptomatic Adults:

- Lp-PLA₂ testing is recommended to be performed or administered (Class IIb*) in intermediate-risk asymptomatic adults. This means the benefit outweighs the risk and the procedure may be considered.
- CRP testing received a similar recommendation of Class IIb for asymptomatic, intermediate-risk men ≤50 years of age or women ≤60 years of age.
- HbA1c testing also received a Class IIb recommendation in asymptomatic adults.

AHA/ASA Guidelines for the Primary Prevention of Stroke:

- The Lp-PLA₂ testing recommendation indicates that measurement of inflammatory markers such as hs-CRP and Lp-PLA₂ in patients without CVD may be considered to identify patients who may be at increased risk of stroke.
- Of the five inflammatory serum markers cited by the Guidelines, only two, Lp-PLA₂ and CRP were recommended for testing.

See reverse for more information

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Furthermore, the current recommendation for the measurement of Lp-PLA₂ in CVD risk assessment is comparable to that for CRP for intermediate-risk adults (Class IIb, Level B evidence). In the same context, Lp-PLA₂ testing received the same recommendation as Hemoglobin A1c (HbA1c) testing and exceeds that for other CVD risk assessment tools such as NT-proBNP.

In December 2010, the *AHA/ASA Guidelines for the Primary Prevention of Stroke* were published in *Stroke* and include recommendations for Lp-PLA₂ testing³. This ASA guideline for stroke also utilizes the same nomenclature, namely, *Classification of Recommendations and Level of Evidence*, as the ACCF/AHA guideline for CVD. Measurement of Lp-PLA₂ was recommended (Class IIb, Level B evidence) with the same class recommendation and level of evidence for Lp-PLA₂ as given by ACCF/AHA guidelines for CVD risk.

The ASA Guideline is organized by stroke risk and treatment sections, with Lp-PLA₂ being recommended in the section titled *Inflammation and Infection*, which lists stroke risks associated with several inflammatory conditions and markers. Lp-PLA₂ is listed together with CRP measurement for patients at increased risk of stroke, each with Class IIb, Level B evidence. Of the five inflammatory biomarkers mentioned (Lp-PLA₂, CRP, fibrinogen, interleukin-6 and serum amyloid A), only two, Lp-PLA₂ and CRP, were recommended for testing.

References

1. Greenland P, Alpert JS, Beller GA, et al. 2010 ACCF/AHA guideline for assessment of cardiovascular risk in asymptomatic adults: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol* 2010;56:e50-e103.
2. The Lp-PLA₂ Studies Collaboration: Lipoprotein-associated phospholipase A₂ and risk of coronary disease, stroke, and mortality: collaborative analysis of 32 prospective studies. *Lancet* 2010; 375: 1536–44.
3. Goldstein LB, Bushnell CD, Adams RJ, et al. AHA/ASA Guidelines for the Primary Prevention of Stroke: A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association. *Stroke* 2011;42:517-584.

* Recommendations are classified as:

- Class I- Recommends procedure /treatment should be performed or administered
- Class IIa- Recommends it is reasonable to perform procedure or administer treatment
- Class IIb- Recommends procedure/treatment may be considered
- Class III- Recommends procedure/test has no benefit and is therefore not recommended or that the procedure is potentially harmful

Three levels of evidence exist representing the estimate of certainty (precision) of treatment effect:

- Level A- multiple populations evaluated
- Level B- limited populations evaluated
- Level C- very limited populations evaluated.

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