ASSESSING RISK

Lp(a) Screening for Individuals at High ASCVD Risk

NATIONAL LIPID ASSOCIATION

WHAT IS Lp(a)?

A LDL variant, in where apo(a) is covalently bonded to Apo B, Lp(a) has been established as a pathogenic entity and proven to be an independent risk factor for atherosclerotic cardiovascular disease (ASCVD).

Elevated levels of Lp(a) are estimated to be prevalent in 20% of the population.

INCREASE IN MORTALITY

INCREASE IN CV EVENTS

INCREASE IN Lp(a)

CAUSAL EFFECT

Epidemiological, Mendelian randomization and GWAS studies confirm high Lp(a) is a casual factor:

- Myocardial Infarction
- Coronary Heart Disease
- Ischemic Stroke
- Calcific Valvular Aortic Stenosis
- Coronary, Femoral and Carotid Stenosis CVD Mortality

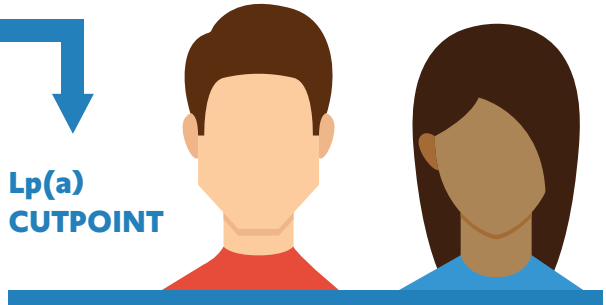
THESE CAUSAL RELATIONSHIPS ARE INDEPENDENT OF CONCENTRATIONS OF OTHER LIPIDS AND LIPOPROTEINS, INCLUDING LDL CHOLESTEROL.

WHAT LEVEL IS HIGH RISK?

Lp(a) >50 mg/dL or >100 nmol/L:

- Corresponds to the 80th population percentile in populations which are predominately Caucasian
- African Americans have higher Lp(a) levels than Caucasians (74 nmol/L vs 20 nmol/L) but it is unclear if a different risk threshold should apply
- Some labs report elevated Lp(a) as > 30 mg/dL or > 75 nmol/L, which is roughly equivalent to the 75th percentile in Caucasian populations

Lp(a) CUTPOINT



> 50 mg/dL or > 100 nmol/L for both men and woman

WHO SHOULD GET SCREENED?

Primary Prevention

- **Adults and Youth with:**
  - A personal history of premature ASCVD and/or ischemic stroke
  - Familial Hypercholesterolemia
  - Primary severe hypercholesterolemia (LDL-C ≥ 190 mg/dL)
  - First-degree relatives with premature ASCVD (<55 years of age in men or <65 years of age in women)
  - Children or parents with elevated Lp(a)

Secondary Prevention

- **Adults with:**
  - Premature ASCVD (<55 years of age in men or <65 years of age in women)
  - Recurrent or progressive ASCVD, despite optimal lipid-lowering
  - Calcific valvular aortic stenosis (VAS)
  - Less-than-expected LDL-C lowering on statin therapy

WHEN ORDERING AN Lp(a) TEST

- Testing doesn't require fasting
- Results may be affected by inflammation
- Results may be reported in mg/dl or nmol/L with measurement in nmol/L preferred due to greater accuracy
- The test is widely available and generally inexpensive
- May not be covered by insurance
- Levels generally don't change over a person's lifetime

WHAT NOW? TREATMENT

- **Lifestyle therapy,** including a heart-healthy dietary pattern and regular physical activity, is recommended although not effective in lowering Lp(a)
- **Manage LDL Related Risk** by maximizing LDL-C lowering therapies shown to reduce ASCVD
  - **High intensity statin therapy or maximally tolerated statin therapy** remains the cornerstone of treatment despite minimal effects on Lp(a) levels
  - **Non-statin therapy (Ezetimibe, PCSK9 Inhibitor)**- It is reasonable to consider combination therapy with Ezetimibe or a PCSK9 inhibitor in "high" and "very high risk" patients on maximally tolerated statin therapy who remain above their LDL-C (and Non-HDL-C goals).
- **Manage Lp(a) Related Risk**
  - **Consider therapies (i.e. PCSK9 Inhibitors)** that lower both LDL-C and Lp(a) and reduce ASCVD risk
  - **In very select patient populations** (i.e. recurrent ASCVD events on optimal lipid lowering treatment), consider **lipoprotein apheresis**
- **Avoid** lipid-lowering agents that lower Lp(a) but have not been shown to have benefit in clinical outcome trials **(niacin, hormone replacement therapy)**

Wilson, Don P., et al. "Use of Lipoprotein(a) in Clinical Practice: A Biomarker Whose Time Has Come—A Scientific Statement from the National Lipid Association. Don P. Wilson, MD, on Behalf of the Writing Group." Journal of Clinical Lipidology, 17 May 2019, doi:10.1016/j.jacl.2019.04.010.