**Assessing Risk**

**Lp(a) Screening for Individuals at High ASCVD Risk**

**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.**

**WHAT LEVEL IS HIGH RISK?**
Lp(a) >50 mg/dL or >100 nmol/L:
- Correlates 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.

**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

**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).**

**CAUSAL EFFECT**
Epidemiological, Mendelian randomization and GWAS studies confirm high Lp(a) is a causal factor for:
- 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.**

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