

Management of Hyperlipidemia in the Safety Net Population *A Clinician's Guide*

STEP I: Measure the patient's lipoprotein levels and estimate 10-year CHD risk

- Obtaining fasting blood samples from homeless patients can be challenging because missing breakfast may mean foregoing food all day. Therefore, the preferred screening tests for patients in the safety net may be total serum cholesterol (TC), and high-density lipoprotein-cholesterol (HDL-C) because these change minimally after a meal containing fat. Similarly, nonfasting triglyceride (TG) levels may be more useful than fasting TG. These three measures can be used to calculate the patient's low-density lipoprotein cholesterol (LDL-C). $LDL = TC - HDL - TG*5$ (*TG must be < 400 mg/dL)
- **Calculate 10-year CHD risk**
The risk assessment tool (see link below) estimates the 10-year risk for "hard" coronary heart disease outcomes, e.g., myocardial infarction and coronary death for adults without evidence of heart disease or diabetes. Patients with concomitant diabetes or CHD are placed in the greater than 20% risk category. Use this link below to determine your patient's 10-year risk.
<http://hp2010.nhlbihin.net/atp/iii/calculator.asp?usertype=prof>

STEP 2: Set Treatment Goals

10-year CHD risk	LDL-C Goal (mg/dL)	LDL-C (mg/dL) Initiate TLCs	LDL-C (mg/dL) Consider drug therapy
> 20 %	< 100	≥ 100	≥ 130
10% - 20%	< 130	≥ 130	≥ 130
< 10 %	< 130	≥ 130	≥ 160
< 10 %	< 160	≥ 160	≥ 190

Adapted from Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. JAMA 2001.

STEP 3: Initiate Therapeutic Lifestyle Changes (TLC)

- TLC involves patients in making lifestyle changes to manage their cholesterol, e.g., improved diet, weight reduction in overweight patients, and increased physical activity. These habits contribute to the risk of CHD and when changes are initiated in patients, may reduce LDL-C to targeted levels. These changes may be successful as the initial strategy for certain patients, depending on baseline cholesterol levels.
- Challenges in the Safety Net include:
 - limited food choices at soup kitchens and shelters
 - variation in size and number of meals
 - eat whatever is available-inactivity for extended periods of time

STEP 4: Initiate Drug Therapy

- Baseline Evaluation
 - *Medical history:*
 1. Review history of the lipid disorder, including lifestyle changes and drug therapy.

2. Assess comorbid diseases and current medications: certain medications may raise LDL-C or lower HDL-C (e.g., corticosteroids, thiazide diuretics, HIV protease inhibitors or other ARV therapies)

- *Social History:*

Alcohol and tobacco use

- *Laboratory Evaluations*

Baseline LFT panel: all “statins” can increase LFTs.

- If ALT or AST is < three times the upper limit of normal (< 105 U/L): therapy with statins may be started
- If ALT or AST is > three times the upper limit of normal (≥ 105 U/L): liver abnormalities must be ruled out before statins are initiated
- Starting Doses of Statins (see comparison chart for complete information)
 - first line treatment would be a statin at a moderate dose
- Dose Titration
 - should occur every six weeks based on LDL-C levels and side effects

STEP 5: Monitoring Efficacy and Safety of Therapy

- *Liver Function*
 - at six weeks:
 - if ALT or AST < three times the upper limit of normal: continuation or advancement of statin, based on desired LDL-C goal levels
 - if ALT or AST > three times the upper limit of normal, confirm by repeat measure within a week:
 - if abnormalities persist, consider dose reduction or stopping statin
 - repeat lab draw in 2-4 weeks
 - if parameters return to baseline on dose reduction, continue to monitor at current dose
- *Myopathies*
 - although the incidence of myopathies with statin use is low, monitoring should occur
 - patients on statins with new CK elevations:
 - Without symptoms
 - CK < three times the upper limit of normal: continue statin therapy
 - CK three to ten times the upper limit of normal: review concurrent drug therapy known to interact with statins (e.g. CYP 3A4 inhibitors with simvastatin and atorvastatin) and consider reducing dose or stopping the statin
 - CK > ten times the upper limit of normal: stop statin therapy
 - With symptoms
 - STOP statin immediately if patient has muscle weakness or severe pain with dark urine
 - If CK < three times the upper limit of normal, follow above for patients presenting without symptoms, provided that the patient’s symptoms are tolerable
 - If CK > three times the upper limit of normal, stop statin, repeat CK in 7 days and if CK normalized, consider rechallenge with lower dose of same or another statin
 - If CK > ten times the upper limit of normal, stop statin, and evaluate clinically for muscle weakness, renal function and urine myoglobin. Consider hospitalization if the patient has renal insufficiency.

Special thanks to Cheryl Amin, PharmD, University of California, San Francisco. This publication may be reproduced or cited with written acknowledgement of the source. It was developed especially for health care professionals in safety net clinics and hospitals. Readers are encouraged to consult current literature before making clinical or purchasing decisions.

Supported by a grant from the California HealthCare Foundation.

© April 2007, Public Health Institute/ Medpin