January 1998

Management of hyperlipidaemia in general practice

Waris Qidwai
Aga Khan University, waris.qidwai@aku.edu

Follow this and additional works at: http://ecommons.aku.edu/pakistan_fhs_mc_fam_med
Part of the Family Medicine Commons

Recommended Citation
Available at: http://ecommons.aku.edu/pakistan_fhs_mc_fam_med/180
Management of Hyperlipidaemia in General Practice

Waris Qidwai (Family Medicine Division, Department of Community Health Sciences, The Aga Khan University, Karachi.)

Hyperlipidaemia is a powerful predictor of coronary artery disease, with a strong, independent, continuous and grades positive association between cholesterol levels and risk of coronary events. Several large studies have shown the benefit of cholesterol reduction and there is clear evidence of the efficacy of statins in the reduction of events in primary and secondary prevention\(^1\). A 1% reduction in the total serum cholesterol reduces the frequency of fatal coronary heart disease by at least 2\(^2\). A 10% mean decrease in the total serum cholesterol level reduces the incidence of both fatal and nonfatal myocardial infarctions\(^3\). Family physicians need to recognize patients at risk for hypercholesterolaemia, institute appropriate therapy and counsel family members about disease prevention\(^4\).
Table I. Classification of Serum Cholesterol and triglyceride levels.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Total Serum Cholesterol</th>
<th>Low density lipoprotein cholesterol</th>
<th>High density lipoprotein cholesterol</th>
<th>Classification of triglyceride levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desirable</td>
<td>&lt;200 mg per dl</td>
<td>&lt;130 mg per dl</td>
<td>&lt;35 mg per dl</td>
<td>Ideal: &lt;125 mg/dl</td>
</tr>
<tr>
<td>Borderline high</td>
<td>200-239 mg per dl</td>
<td>130-159 mg per dl</td>
<td>35-59 mg per dl</td>
<td>Border line: 125-250 mg/dl</td>
</tr>
<tr>
<td>High risk</td>
<td>240 mg per dl</td>
<td>&gt;160 mg per dl</td>
<td>&gt;60 mg per dl</td>
<td>Elevated: 250 mg/dl</td>
</tr>
</tbody>
</table>

Adapted from summary of the second report of the National Cholesterol Education Program (NCEP) expert panel on Detection, Elevation and treatment of high blood cholesterol in adults (Adult Treatment Panel II). JAMA 1993;269:3015-23.

Table I classifies the cholesterol and triglyceride levels.
Table II. Risk factors for coronary heart disease*

<table>
<thead>
<tr>
<th>Risk Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Men 45 years of age and older.</td>
</tr>
<tr>
<td>Women 55 years of age and older, or women with premature menopause who are</td>
</tr>
<tr>
<td>not receiving estrogen replacement therapy.</td>
</tr>
<tr>
<td>Cigarette smoking (presently a smoker)</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
</tr>
<tr>
<td>Family history of myocardial infarction or sudden death before age 55</td>
</tr>
<tr>
<td>years in male first degree relative or before age 65 years in female first</td>
</tr>
<tr>
<td>degree relative.</td>
</tr>
<tr>
<td>HDL cholesterol level of $&lt;35$ mg per dL.</td>
</tr>
<tr>
<td>Hyper tension</td>
</tr>
</tbody>
</table>


*The HDL cholesterol level is also a negative risk factor for coronary heart disease if level is $>60$ mg per dL.

Table II lists the risk factors for coronary artery disease.
Table III lists the LDL-cholesterol level to be targeted in a particular case.

**Screening**
Total cholesterol should be measured at least once every five years in all adults 20 years of age and older.

**Management**
- **Life style modifications**
- **Dietary therapy**
  - Begin with step-i diet of the American Heart Association
  1. <300 mgs cholesterol daily
  2. <30% total fat daily
  3. < 10% saturated fat daily
  - Continue for six months. In case of failure, consider step-2 diet.
  1. <200 mgs cholesterol daily
  2. <30% total fat daily
  3. <7% saturated fat daily

<table>
<thead>
<tr>
<th>Coronary heart disease (CHD status)</th>
<th>LDL cholesterol level</th>
<th>Goal LDL cholesterol level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Without disease</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifestyle modification therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fewer than two risk factors or CHD</td>
<td>&gt;160 mg per dL</td>
<td>&lt;160 mg per dL</td>
</tr>
<tr>
<td>Two or more risk factors for CHD</td>
<td>&gt;130 mg per dL</td>
<td>&lt;130 mg per dL</td>
</tr>
<tr>
<td>Pharmacologic therapy fewer then two risk factors for CHD</td>
<td>&gt;190 mg per dL</td>
<td>&lt;160 mg per dL</td>
</tr>
<tr>
<td>Two or more risk factors for CHD</td>
<td>&gt;160 mg per dL</td>
<td>&lt;130 mg per dL</td>
</tr>
<tr>
<td><strong>B. With disease</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifestyle modification therapy</td>
<td>&gt;100 mg per dL</td>
<td>&lt;100 mg per dL</td>
</tr>
<tr>
<td>Pharmacologic therapy</td>
<td>&gt;130 mg per dL</td>
<td>&lt;100 mg per dL</td>
</tr>
</tbody>
</table>

Adapted from National Colesterol Eucation Program. National Institute of Health, National Heart, Lung and Blood Institute, 1993; DHHS publication No. (NIH) 93-3095:5.
Controlled studies of the step 1 diet for hypercholesterolemia in outpatient-patients have shown reduction in total cholesterol levels of up to 4 percent over a two to five year period. The step 2 diet was found to lower total serum cholesterol levels by 13 percent over five years.

**Exercise**
The favourable effects of exercise on lipoprotein metabolism, particularly evident in the postprandial state, may help to decrease susceptibility to atherosclerosis in exercise trained people.

**Smoking**
Active smoking has an adverse impact on serum lipid and lipoprotein levels in patients with familial combined hyperlipidaemia.

**Treatment**

**a. Hypercholesterolemia**
Treatment is advised if LDL-cholesterol >159 mg per dL or >130 mg per dL with two or more risk factors.

Dietary management is treatment of first choice.

Choices for drug treatment are in order of preference.

1. HMG-CoA reductase inhibitors like lovastatin (Mevacor) 20-80 mgs daily are required. Liver function tests, plasma lipids and creatinine phosphokinase need to be monitored.
2. Niacin in daily doses of 0.5 to 3 gram daily

Liver function tests and creatinine phosphokinase need to be monitored. Side effects includes gastric irritation, increase in serum uric acid and blood sugar levels. Cutaneous flushing and pruritis can occur.

3. Bile acid sequestrants
Like cholestyramine 4-8g once or twice daily. No systemic absorption. Gastro-intestinal upsets are common side effect.

**b. Hypertriglyceridemia**
Look for secondary cause such as diabetes mellitus, oral contraceptive use or alcohol use.

Dietary management is the first choice of treatment.

Gemfibrozil is the drug of choice. Usual dose is 600 mg twice daily. Common side effects are gastrointestinal upsets.

Role of simvastatin in the treatment of hypercholesterolemia and mixed hyperlipidemia is increasing, whereas fibrates are increasingly limited to hypertriglyceridemia.

Caution is required in combining hypolipidaemic drugs as side-effects of individual drugs may be potentiated when used in combination. The combination of bezafibrate and simvastatin was more effective in controlling mixed hyperlipidemia than either drug alone and did not provoke more adverse events.

**Follow Up**
Once pharmacologic therapy is begun, the LDL cholesterol level is measured in four to six weeks and again in three months. If the desired LDL cholesterol level is achieved, therapeutic response and medication side effects can be evaluated every three months.

If a patient fails to achieve the therapeutic goal, lifestyle modifications are reemphasized. In addition, the patient can be switched to another drug, or two drugs can be used in combination. Therapy usually continues for the patient’s lifetime.

**References**