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Management of hyperlipidaemia in general practice

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Pages with reference to book, From 285 To 287

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Hyperlipidaemia is a powerful predictor of coronary artery disease, with a strong, independent, continuous and grades positive associationbetweencholesterol 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 inprimazy and secondary prevention[1].

A 1% reduction in the total serum cholesterol reduces the frequency of fatal coronary heart disease by atleast 2%[2]. A l0% meandecrease inthe total serum choelsterol 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.

Total Serum Cholesterol

Desirable: <200 mg per dl
Borderline high: 200-239 mg per dl
High risk: 240 mg per dl.

Low density lipoprotein cholesterol

Desirable: <130 mg per dl
Borderline high: 130-159 mg per dl
High risk: >160 mg per dl

High density lipoprotein cholesterol

High risk: <35 mg per dl
Desirable: 35-59 mg per dl
Low risk: >60 mg per dl.

Classification of triglyceride levels

Ideal: <125 mg/dl.
Border line: 125-250 mg/dl
Elevated: 250 mg/dl.

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*

Age
Men 45 years of age and older.
Women 55 years of age and older, or women with premature menopause who are not receiving estrogen replacment therapy.
Cigarette smoking (presently a smoker)
Diabetes mellitus
Family history of myocardial infarction or sudden death before age 55 years in male first degree relative or before age 65 years in female first degree relative.
HDL cholestrol level of <35 mg per dL.
Hyper tension

Adapted from National Cholesterol Education Program. National Institute of Health, National Heart, Lung and Blood Institute, 1993; DHHS publication no (NIH) 93-3095:1-11.

*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. Mangement of hypercholesterolemia as determined by LDL cholesterol level.

Coronary heart disease (CHD status)	LDL cholesterol level	Goal LDL cholesterol level
A. Without disease		
Lifestyle modification therapy		
Fewer than two risk factors or CHD	>160 mg per dL	<160 mg per dL
Two or more risk factors for CHD	>130 mg per dL	<130 mg per dL
Pharmacologic therapy		
fewer then two risk factors for CHD	>190 mg per dL	<160 mg per dL
Two or more risk factors for CHD	>160 mg per dL	<130 mg per dL
B. With disease		
Lifestyle modification therapy	>100 mg per dL	<100 mg per dL
Pharmacologic therapy	>130 mg per dL	<100 mg per dL

Adpated from National Colesterol Eucation Program. National Institute of Health, National Heart, lung and blood Institute, 1993; DHHS publication No. (NIH) 93-3095:5.

Table III lists the LDL-cholesterol level to be targeted in a particular case.

Screening

Total cholesterol should be measured atleast once eveiy five years in all adults 20 years of age and older[5].

Management

Life style modifications

Dietaiy 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% satured fat daily

Controlled studies[6-8] of the step 1 diet for hypereholestemlaemia inout-patients have shown reduction in total cholesterol levels of upto 4 percent over a two to five year period. The step 2 diet was found to lower total serwn cholesterol levels by 13 percent over five years[9].

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[10].

Smoking

Active smoking has an adverse impact on serum lipid and lipoprotein levels in patients with familial combined hypcrlipidaemia[11].

Treatment

a. Hypercholesterolemia

Treatment dis advised if LDL-cholesterol >159 mg per dL or>130 rngpcrdL with two ormore risk factors.

Dietaiy management is treatment of first choice.

Choices for drug treatment are in order of preferance.

1. HMG-Co-A 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 scquestrants

Like cholestyramine 4-8g once or twice daily. No systemic absorption. Gastro-intestinal upsets are conunon 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[12].

Caution is required in combining hypolipidaemic drugs as side- effects of individual drugs may be potentiated when used in combination[13]. The combination of bezafibrate and sirnavastatin was more effective in controlling mixed hyperlipidemia then either drug alone and did not provoke more adverse events[14].

Fouw 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[5].

If a patient fails to achieve the therapeutic goal, lifestyle modifications are reemphasized. In addition, the patient canbe switchedto another drug, ortwo drugs canbeusedincombination. Therapy usually continues forthe patient's life time[4].

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