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Concept of Hyperlipidemia

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ABSTRACT

In this modern era, due to varying factors of faulty dietary habits, work pressure, competitive lifestyles, longevity, all contribute to disease Hyperlipidemia, it is a high level of fats in the blood. These fats include cholesterol and triglycerides. This increases fatty deposits in arteries and the risk of blockages and it can be prevented and treated through the appropriate maintenance of healthy lifestyle. The present paper highlights the causes, diagnosis, management of the Hyperlipidemia through diet and lifestyle.

Key words: Hyperlipidemia, Diet, Disease.

INTRODUCTION

Cholesterol is a waxy, fat protein that is made by the liver. It is essential for healthy cell membranes, brain functioning, hormone production and vitamin storage. Cholesterol becomes a problem when too much bad cholesterol or low-density lipoprotein (LDL), is produced or ingested through unhealthy foods. Lipoproteins transport cholesterol through the blood to the cells. Hyperlipidemia means there is too much cholesterol in the blood. When the body cannot use or remove excess fat, it accumulates in the blood. Over time, this damages the arteries and internal organs and contributes to the development of heart disease. Raised cholesterol is estimated to cause 18% of the global cerebrovascular disease and 56% of global ischemic heart disease. Overall this amounts to

about 0.4 million deaths (7.9% of total).^[1]

Causes

The causes of hyperlipidemia are^[2]

- Primary causes
- Secondary causes

1. Primary causes

Because of genetic factors a mutated gene is passed down from a parent and causes a missing or malfunctioning LDL receptor. The LDL accumulates to dangerous amounts in the blood.

2. Secondary causes

Because of sedentary lifestyle with excessive dietary intake of saturated fat, cholesterol, and Trans fats (Trans fats are polyunsaturated or monounsaturated fatty acids to which hydrogen atoms have been added; they are used in many processed foods and are as atherogenic as saturated fat.

Other common secondary causes includes,

- Diabetes mellitus
- Alcohol overuse
- Chronic kidney disease
- Hypothyroidism
- Primary biliary cirrhosis and other cholestatic liver diseases

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- Drugs, such as thiazides, β -blockers, retinoids, highly active antiretroviral agents, cyclosporine, tacrolimus, estrogen and progestins, and glucocorticoids.
- Secondary causes of low levels of HDL cholesterol include cigarette smoking, anabolic steroids, HIV infection, and nephrotic syndrome

Signs and symptoms^[3]

Person with hyperlipidemia usually has no signs or symptoms. In familial hyperlipidemia, there may be yellowish fatty growths around the eyes or the joints. Hyperlipidemia is usually detected during a routine blood test, or following a cardiovascular event, such as a heart attack or stroke. Excessive fat in the blood accumulates over time, forming plaques on the walls of the arteries and blood vessels. This will narrow the openings, producing turbulent blood flow through the vessels. The heart has to work harder to pump the blood through the constricted areas.

Diagnosis^[4]

Diagnosis for Hyperlipidemia is done with a blood test called a lipid profile. Triglycerides are a type of fat in the blood. These are different from cholesterol, but because of their strong association with heart disease, triglycerides are also measured. A person with hyperlipidemia may have high levels of both LDL and triglycerides.

Normal levels for a lipid profile are;

- Total cholesterol: less than 200
- LDL(Low-density lipoprotein): less than 100
- HDL(High-density lipoprotein): greater than 40 for men, greater than 50 for women (higher is even better)
- Triglycerides: less than 140

Management^[5]

Hyperlipidemia is a common health problem that can lead to serious cardiovascular or heart disease, but it can be prevented through the appropriate maintenance of a heart healthy lifestyle, which

involves a "heart healthy" diet, regular exercise habits and maintaining a healthy weight.

Diet^[6]

Reduce the total fat intake;

- Dairy products and meat are the principal sources of saturated fat in the diet. Hence reduce their intake and substitute fish and poultry.
- Visible fat and skin should be removed before cooking and preparing meat dishes.
- Meat products including sausages and reconstituted meats (like luncheon meat) should be avoided since the concentration of fat is unknown and often high.
- Baking and grilling of meats reduces the fat content.
- Low fat or cottage cheese and skimmed or semi skimmed milk should be substituted for the full fat varieties.
- Pastries and cakes to be avoided (due to high fat)
- Overall aim should be decrease fat intake such that it is providing approximately further reduction in fat intake is unacceptable to many patients substitute with unsaturated monounsaturated oils (olive oil) and polyunsaturated oils (sunflower, safflower, corn and soya) should be used in the cooking instead of saturated fat rich alternatives.
- Reduce the dietary cholesterol intake.
- Avoid liver, offal and fish.
- Although eggs and prawns are rich in cholesterol their contribution to body cholesterol pool is small and they can still be part of a balanced lipid lowering diet.
- Increase intake of fiber (Nsp-Non starch polysaccharides).
- Foods high insoluble fibre like pulses, legumes, root vegetables, leafy vegetables and unprocessed cereals helps reduce circulating lipids

concentrations substitute these for higher fat alternatives.

Reduce the Alcohol intake

Excess alcohol is a cause of hyperlipidemia and may worsen primary lipid disorders.

Achieve an ideal body weight

Obesity as it will help the lipid disorder and also due to the reason that itself is a risk factor for CVD.

Smoking

Smoking triggers many problems that contribute to heart disease. It promotes plaque buildup on the walls of the arteries, increases LDL levels, and it encourages blood clot formation and inflammation. Quitting will result in higher HDL. This may be one reason why cardiovascular disease risk falls after quitting.

CONCLUSION

Hyperlipidemia is a common health problem that can lead to serious cardiovascular or heart disease, but it can be prevented and treated through the appropriate maintenance of a healthy lifestyle.

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