Editorial
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An Overview of Dyslipidemia

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Editorial

Dyslipidemia is a condition in which the blood contains an abnormal amount of lipids (such as triglycerides, cholesterol, and fat phospholipids). Dyslipidemia is a risk factor for Atherosclerotic Cardiovascular Disease Development (ASCVD). Coronary artery disease, cerebrovascular disease, and peripheral artery disease are all types of ASCVD. Although dyslipidemia is a risk factor for ASCVD, excessive levels do not necessitate the use of lipid-lowering medications. In addition to dyslipidemia, other factors such as concomitant diseases and lifestyle are examined in a cardiovascular risk assessment. The majority of dyslipidemias in developed countries are hyperlipidemias, or blood lipid elevations. This is frequently attributable to dietary and lifestyle factors. Insulin resistance that persists for a long time might develop to dyslipidemia. Increased O-GlcNAc Transferase (OGT) levels can also cause dyslipidemia [1].

Diagnosis

Classification

Dyslipidemias are classified in two ways by doctors and fundamental scientists. One way is through the body's appearance (including the specific type of lipid that is increased). The alternative way is owing to the condition's underlying cause (genetic, or secondary to another condition). Because most illnesses involve the junction of genetics and lifestyle factors, this classification can be challenging. There are, however, a few well-defined hereditary diseases that are usually easy to recognise.

Triglycerides (TG), high density lipoprotein cholesterol (HDL-C), and low density lipoprotein cholesterol (LDL-C) are the three main blood values used to measure dyslipidemia (LDL-C). High triglyceride levels (fasting >1.7 mmol/L) are a sign of dyslipidemia. Very low density lipoproteins (VLDL) serve as a transporter for triglycerides in the bloodstream. When measuring triglyceride levels, it's important to remember that you'll need to fast for 8–12 hours to get an accurate result, as non-fasting TG findings can be misleading. Severe hypertriglyceridemia is a risk factor for acute pancreatitis, hence TG values larger than 10 mmol/L should be treated. HDL-C is another blood test used to diagnose dyslipidemia. HDL cholesterol is made up of a lot of protein and very little lipids. It has a favourable effect on the body since it works by going to the tissues and removing excess cholesterol and fat. HDL-C is known as "good cholesterol" because of its beneficial benefits in preventing plaque development.

Other activities of HDL-C include antioxidation, thrombosis protection, endothelial function preservation, and maintaining low blood viscosity. A low level of HDL cholesterol indicates dyslipidemia and is a risk factor for problems due to its favourable functions. LDL cholesterol is another diagnostic test that is frequently examined. Cholesterol, TG, phospholipids, and apolipoproteins make up low density lipoproteins. Plaque is formed when LDL-C molecules adhere to the endothelium of blood vessels. Once plaques have formed, LDL-C in the bloodstream can adhere to them, causing additional accumulation. LDL-C molecules can be oxidised in addition to plaque formation. Oxidation can lead to an increase in cholesterol levels and the release of inflammatory cytokines, both of which damage blood vessels. High levels of LDL-C raise the risk of cardiovascular disease and indicate dyslipidemia due to its harmful consequences [2].

Dyslipidemias can also be categorised according to whether the underlying aetiology is primary, secondary, or a combination of both. Genetic abnormalities that induce elevated lipid levels without any other clear risk factors are known as primary dyslipidemias. People with primary dyslipidemias are more likely to develop dyslipidemia-related problems, such as atherosclerotic cardiovascular disease, at a younger age. Genetic abnormalities that induce elevated lipid levels without any other clear risk factors are known as primary dyslipidemias. People with primary dyslipidemias are more likely to develop dyslipidemia-related problems, such as atherosclerotic cardiovascular disease, at a younger age. Homozygous or heterozygous hypercholesterolemia, familial hypertriglyceridemia, mixed hyperlipidemia, and HDL-C metabolism abnormalities are some of the most frequent genetic disorders linked to primary dyslipidemias.

A mutation in the LDLR, PCSK9, or APOB gene is frequently the cause of familial hypercholesterolemia, and these mutations cause high LDL cholesterol. In patients with concomitant hyperlipidemia, the liver produces too much apoB-100. This results in a large number of LDL and VLDL molecules forming. This results in a large number of LDL and VLDL molecules forming. Patients with primary dyslipidemias may appear with acute pancreatitis or xanthomas on the skin, eyelids, or around the cornea, which is a distinct symptom. Secondary dyslipidemias, in contrast to primary dyslipidemias, are caused by modifiable environmental or lifestyle factors. Uncontrolled diabetes mellitus, cholestatic liver disease, chronic renal disease, hypothyroidism, and polycystic ovarian syndrome are all conditions linked to an increased risk of dyslipidemia [3].

Screening

There is no broad consensus on when dyslipidemia screening should begin. Those with a high risk of cardiovascular disease, in general, should be screened at a younger age, with males between the ages of 25 and 30 and females between the ages of 30 and 35. It is unknown whether testing the general population under the age of 40 without symptoms are beneficial. Up to Date recommends screening males and females at the ages of 35 and 45, respectively, in those who are not at risk of cardiovascular disease. If you have any of the risk factors listed below, you should get screened regardless of your age. The Framingham Risk Score (FRS) can be used to determine cardiovascular risk, and it should be revisited every 5 years for patients aged 40 to 75 [4].

Risk Factors

Risk factors include [5]:

- Family history of dyslipidemia
- Current cigarette smoking
- Diabetes mellitus

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- Hypertension
- Obesity (BMI >30 kg/m^2)
- Atherosclerosis, etc.

Conflict of Interest

None.

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