A type of fat in the blood that can increase the risk of heart disease when levels are high.

Triglycerides circulate in the bloodstream through triglyceride-rich lipoproteins, specifically very low-density lipoproteins (VLDL) and chylomicrons. Chylomicrons, which are secreted by the small intestine, contain a substantial proportion of triglycerides. These triglyceride-laden chylomicrons undergo hydrolysis in peripheral tissues, resulting in the release of free fatty acids (FFA). Muscle cells utilize these FFAs as an energy source, while adipose tissue stores them as inactive fuel.[1] In contrast to larger triglyceride-rich lipoproteins, the remnants of these lipoproteins can contribute to atherogenesis. Although triglyceride particles are absent in atherosclerotic plaques, the cholesterol content, particularly from low-density lipoprotein (LDL) particles within triglyceride-rich lipoproteins, is implicated in plaque development. Furthermore, the lipolysis of triglyceride-rich lipoproteins generates free fatty acids, lysolecithin, and other reactive lipids that may promote inflammation and coagulation.[2]

The excessive release of free fatty acids and lysolecithin from chylomicrons in pancreatic capillaries is associated with the onset of pancreatitis. Increased chylomicron levels can lead to hyperviscosity, resulting in acidosis and ischemia in capillary beds. This condition activates pancreatic lipases, leading to lipolysis and the release of toxic free fatty acids, which can cause inflammation and cytotoxic damage, ultimately resulting in pancreatitis. The risk of developing pancreatitis is directly related to triglyceride levels, significantly rising when levels exceed 500 mg/dL. Generally, maintaining triglyceride levels below 250 mg/dL to 500 mg/dL can help prevent pancreatitis.[3]

References

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