Gemfibrozil (Fibrates)

Gemfibrozil belongs to a class of medications known as fibrates or fibric acid derivatives. These drugs are used to treat hypertriglyceridemia by reducing high levels of plasma triglycerides (VLDLs). Gemfibrozil can also lead to a slight increase in HDL cholesterol. Side effects associated with this medication include hepatotoxicity, cholesterol gallstones, and the development of myopathy, especially when combined with statins. Gemfibrozil is known to increase anticoagulant effects of warfarin due to its effect of displacing warfarin from plasma albumin, thus the concurrent use of gemfibrozil and warfarin should be closely monitored.



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Mechanism of Action

Decreases Triglycerides
Down-arrow TAG-triceratops
Gemfibrozil and other fibrates decrease triglyceride (TAG) levels by interacting with a specific receptor subtype, known as peroxisome proliferator-activated receptor alpha (PPAR alpha), present in the liver and brown adipose tissue. Activation of PRAR alpha results in increased production of lipoprotein lipase (LPL) and reduced production of apolipoprotein C-III (an inhibitor of LPL). These actions speed up the clearance of VLDLs leading to reduced levels of triglycerides.

Increase in HDL
Up-arrow Hot-dog-angel
Fibrates increase production of apoA-I and apoA-II in the liver. This leads to an increase of plasma HDL concentrations and a more efficient reverse cholesterol transport.

Slight Decrease in LDL
Small Down-arrow Ladybug-devil
Treatment with these medications forms LDL which has a higher affinity for its receptor and are consequentially broken down more rapidly.

Indications

Hypertriglyceridemia
Hiker-triceratops
This drug is indicated for treating hyperlipidemia, which refers to abnormally high levels of lipids or lipoproteins in the blood. Fibrates are also used for other dyslipidemias, such as hypertriglyceremia.

Side Effect

Hepatotoxicity
Liver with Toxic-green-glow
Treatment with these drugs may lead to hepatotoxicity and increased liver function test (LFTs) values. Other side effects include myopathy, increased CPK, and renal failure.

Cholesterol Gallstones
Cholesterol-burgers wih Gold-stones
As these drugs increase the cholesterol content of bile, there is an increased risk of cholesterol gallstones. Patients with pre-existing gallbladder disease should not take this drug.

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Myopathy

Mayo-party-hat

Gemfibrozil, along with other fibrates, can cause myopathy. Patients should be educated to report any signs of muscle injury, such as weakness, abnormal muscle pain, and tenderness.

Considerations

Do Not Combine with Statins

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Gemfibrozil should not be combined with statins, or used with great caution, as the combination of a statin with gemfibrozil increases the risk of statin-induced myopathy.

Warfarin Toxicity

War-fairy with Toxic-green-glow

Gemfibrozil increases the effects of warfarin, thereby increasing anticoagulant effects and increasing the risk of toxicity. To assess coagulation status, prothrombin time should be measured frequently, and warfarin dosage may need to be adjusted.

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