Fibrates

Fibrates are carboxylic acid medications indicated for use in hyperlipidemia and other dyslipidemias. These drugs work via many mechanisms, leading to decreased triglycerides, slight increases in HDL and slight decreases in LDL. Fibrates lead to upregulation of LPL, allowing accessibility to triglyceride-rich lipoproteins for lipolysis. Another mechanism they work by is increasing hepatic uptake of fatty acids and decreasing hepatic production of triglycerides, decreasing their overall plasma levels. A slight increase in HDL is caused by increased amounts of Apoproteins A-1 and A-II, which allow more effecient reverse cholesterol transport. A slight decrease in LDL is seen with fibrate administration due to formation of LDL with a higher affinity for its receptor, allowing it to be catabolized quicker. Side effects of fibrate drugs include hepatotoxicity and increased LFT values, as well as cholesterol gallstones, which is due to increased cholesterol content in bile. Other side effects include myalgias, increased CPK, and resulting acute kidney injury.



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Indications

Hyperlipidemia
Hiker-lips
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.

Mechanism of Action

Upregulate LPL
Up-regulator Lip-laser
Fibrates upregulate lipoprotein lipase, which is required for triglyceride metabolism in the blood.

Decreases Triglycerides
Down-arrow TAG-triceratops
Triglyceride (TAG) levels are decreased through treatment by fibrates because these drugs increase accessibility triglyceride-rich lipoprotein to be hydrolized by lipoprotein lipase. Another mechanism by which TAGs are decreased is inducing hepatic fatty acid uptake and reducing hepatic triglyceride production.

Slight Increase in HDL
Small 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
Treatment with these medications forms LDL which has a higher affinity for its receptor, and are consequentially broken down more rapidly.

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.

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