

# The Effect of Fenofibrate on Insulin Sensitivity and Plasma Lipid Profile in Non-diabetic Males with Low High Density Lipoprotein/Dyslipidaemic Syndrome

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## Abstract

*Non-diabetic males, particularly those with very low levels of high density lipoprotein (HDL) type cholesterol and high levels of very low density type lipoprotein (VLDL), are associated with insulin resistance and decreased insulin sensitivity. The evidence that elevation of HDL cholesterol and diminution of triglycerides with drugs, with improvement in insulin sensitivity is still lacking. In the treatment of the dyslipidaemic syndromes with hypolipidaemic drugs, the associated metabolic abnormality of insulin resistance/sensitivity has to be addressed. We investigated the degree of decreased insulin sensitivity in 23 patients with low HDL and/or raised triglycerides by measuring the fasting, first and second hour insulin levels during an oral glucose tolerance test (OGTT) and repeated the measurements after a 6-month course of fenofibrate. The insulin levels were correlated with the OGTT, blood pressure, total cholesterol, HDL cholesterol, LDL cholesterol, and triglycerides measured before and at the end of the trial. The serum insulin at the second hour of the OGTT fell from  $100.79 \pm 42.79$  mU/l to  $54.56 \pm 25.43$  mU/l ( $P < 0.0005$ ) even though there was no change in the blood glucose level at this point. Our study shows that fenofibrate (Lipanthyl<sup>®</sup>) 300 mg daily significantly raises the pretreatment low HDL cholesterol (from  $0.64 \pm 0.1$  mmol/l to  $0.99 \pm 0.2$  mmol/l) as well as lowers the triglyceride level (from  $2.17 \pm 1.1$  mmol/l to  $1.43 \pm 0.64$  mmol/l) in patients with low HDL/dyslipidaemic syndrome. The data also support the conclusion that treatment with fenofibrate increases insulin sensitivity as measured by the corresponding insulin levels of the OGTT in the study subjects who presented with very low HDL cholesterol level. There was also a decrease in blood pressure readings in our study subjects. Throughout the trial, there was no significant change in body weight or exercise level in the subjects studied.*

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**Key words:** Fenofibrate, Insulin resistance, Low HDL cholesterol, Non-diabetic males

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