EFFECT OF ATORVASTATIN AND SILYMARIN ON MRNA EXPRESSION HMGCR AND LDLR GENES IN RAT INTESTINE

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Metabolic syndrome is a common disease with many specific disorders typically dyslipidemia, diabetes, obesity, or hypertension. For the treatment of dyslipidemias, many lipid-lowering drugs, as well as nutraceuticals, are available. In this study, we compare the efficacy of atorvastatin, silymarin - the extract from the seeds of milk thistle, or both. Atorvastatin inhibits the key enzyme in the biosynthesis of cholesterol - 3-hydroxy-3-methylglutaryl Coenzyme A reductase (HMGCR). Inhibition of HMGCR is usually followed by an increase in the expression of LDL receptors (Ldlr). As a model, the hereditary hypertriglyceridemic rats (HHTg) were used. These rats were bred from Wistar rat according to their susceptibility to high glucose intake.
HHTg rats were fed standard laboratory diet (SLD) for four weeks or SLD supplemented with 1% silymarin or atorvastatin (5 mg/kg/day b.w.) or combination of both. Animals were sacrificed in fed state and blood and organs for the subsequent analysis were collected. For the determination of mRNA content in the small intestine the Real-Time PCR was used.
Results showed a significant increase in Ldlr mRNA expression in rats fed a combination of silymarin and atorvastatin. Hmgcr mRNA was decreased in all experimental animals, in rats fed diet containing atorvastatin, the decrease was statistically significant.
The study has shown the positive effect of silymarin in the treatment of dyslipidemia. Combination of atorvastatin and silymarin was superior to atorvastatin alone.
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