Effects of Monascus Rice Powder Co-supplemented with Coenzyme Q_{10} Improves Serum Lipids and Lipid Oxidative Status on Hypercholesterolemia Subjects

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Aim: A clinical trial was conducted to investigate lipid-lowering and antioxidative effects of combined red yeast rice extract and coenzyme Q_{10} (CoQ_{10}) supplementation on hypercholesterolemia subjects.
Methods: Thirty-seven subjects were recruited and were randomly divided into three groups such as *Monascus* rice powder 500 mg (M), equivalent to monacolins 12 mg; *Monascus* rice powder 500 mg plus CoQ_{10} 30 mg (MQ), and *Monascus* rice powder 1 g plus CoQ_{10} 60 mg (HMQ) by different doses supplementation. The supplementations administrated for 6 weeks, blood samples were collected every two weeks for cholesterol and low density lipoprotein lag time, and TBARS determination.
Results: Results showed that the subjects had lower serum total cholesterol, LDL cholesterol, and apolipoprotein B concentration after four months of supplementation. In LDL-lag time, the data displayed a significant slower production of conjugated dienes in all groups after six weeks of supplementation. However, in CoQ_{10} supplementing groups, the effect sustained after ceasing supplementation for two weeks.
Conclusion: The results confirmed the lipid-lowering effects of monacolins by inhibiting HMG CoA reductase and decreasing the concentration apolipoprotein B. Furthermore, addition of at least 30 mg CoQ_{10} could significantly enhance LDL antioxidative capacity in hypercholesterolemia subjects.