

A Comparative Study on the Effectiveness of Garlic with Clofibrate in the Treatment of Hyperlipidemia

Dear Editor,

Along with increasing in prevalence rate of diseases associated with dysfunction in lipid metabolism, much interest has been focused on alternative, safer drugs of natural origin, among which garlic (*Allium sativum*) has had a fair share.¹ There is growing evidence that garlic has several useful effects on the circulatory and respiratory systems.¹ Garlic, both fresh and in powder form, from a variety of geographical regions, has different quantities of alliin. Alliin is a precursor of the active compounds allicin and ajoene. The former is formed when garlic is crushed before drying and has a half-life of only 4 days. However, if dried before crushing, it maintains its stability for several years.¹

A standardized garlic tablet, manufactured by Kwai, Lichtwer Pharma GmbH, Berlin containing 1.3% alliin was used in our study. Each 100 mg tablet was equivalent to 300 mg of fresh garlic, or 1.3 mg of alliin. The aim of our study was to evaluate and compare the effectiveness of this standardized garlic tablets with clofibrate in 20 Iranian subjects suffering from hyperlipidemia, with serum cholesterol and triglyceride levels above 200 mg/dl.

The patients were randomly allocated into two groups of 10 patients each (three females and seven males in each group). The mean age was 47.8 years (41-54), and the average weight was 74.1 kg for the garlic-treated group and 75.5 kg for the clofibrate-treated group. All subjects were advised to discontinue their lipid lowering drugs 7 days before taking the garlic tablets, and their total cholesterol and triglyceride levels were measured after an overnight fasting period on the seventh day. Each patient took 9 tablets (900 mg, equivalent to 2.7 g of fresh garlic) a day in three doses of 3 tablets with food for eight weeks. Serum cholesterol and triglyceride levels were measured on weeks 4 and 8 after their visit for checkups.

The results showed a significant reduction in both the serum cholesterol and triglyceride level during the 8-week period of study in the garlic-treated group ($p < 0.01$), compared to clofibrate treatment group. The major side effect experienced in one patient in the garlic-treated group was a characteristic garlic odour, which is attributed to its odoriferous sulfur-containing constituents.

An interesting observation, which deserves further investigation, was found in a patient in the garlic group who was a non-insulin dependent diabetic. He experienced a greater reduction in his blood glucose level relative to those previously measured with his oral hypoglycemic treatment alone.

The cholesterol lowering action of garlic has been attributed to its inhibitory action on lipid synthesis and increased excretion of neutral and acidic sterols, while its triglyceride lowering action has been postulated to be via reduction in tissue concentration of NADPH, increase in hydrolysis of triacylglycerols via increased lipase activity and inactivation of thiol-containing enzymes involved in lipid synthesis.²

References

- 1 Symposium on the chemistry, pharmacology and medicinal applications of garlic. *Cardiology in Practice*, 1989;7:1-15.
- 2 Fulder, S: Garlic and the prevention of cardiovascular disease. *Cardiology in Practice*, 1989;7:30-5.

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