

Effect of commercially and Home-Made Concoction on Serum LDL, HDL, Cholesterol and Concentrations in Dyslipidemia Adult

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Abstract

Dyslipidemia is a condition in which amount of lipids in blood increases above its normal level. The prevalence of dyslipidemia in Pakistan is 16–20% in both men and women. It may be treated through dietary interventions prepared from indigenous sources. Garlic and ginger have a potential to reduce the amount of LDL and triglycerides and also increase the amount of HDL. Honey has antimicrobial, antioxidant and anti-dyslipidemia effect and adjusts immunity and glycemic response. Apple cider vinegar contains polyphenol like chromogenic acid which may reduce the serum TGs by reducing the lipogenesis and enhance the removal of the TGs through bile. Vitamin C that is the main constituent of lemon may lower down the risk of coronary Heart disease. Concoction is devised by mixing of several ingredients, like garlic (*Allium sativum L.*) ginger (*Zingier officinale*), lemon (*Citrus aurantifolia*), apple cider vinegar and honey. Concoction was prepared after preliminary trial and evaluated for physiochemical, microbial and sensory parameters for 2 months at two different temperatures ((0-4°C) and (25-40°C)) and in two different packaging (plastic bottles and glass bottles). The dyslipidemic males and females (n= 4210) were approached from different hospitals and clinics from different areas. They were assessed through anthropometrics, body composition, clinical signs and symptoms, dietary intake by FFQ along with biomarkers *i.e.* lipid profile, CBC, LDL, HDL, urea. Creatinine, TC and TGs. The selected treatment of concoctions (T0, T4 and T8) was provided to the volunteers for 120 days. The data was analyzed statistically to validate the results of the study. Results showed that there were decrease in TC, TGs, and LDL about 15, 33.7 and 16% correspondingly, while it also increases about 13% of HDL. Other parameters that were also decreased are Urea, uric acid and Cretonne. It is recapitulated that concoction stored at refrigerated temperature (0-4°C) in glass bottle is appropriate and cost effective indigenous source for the treatment of dyslipidemia.

Keywords:

Triglycerides; Garlic; Ginger; Dyslipidemia; lemon; Apple cider vinegar; Honey

Introduction

Knowledge Cholesterol is a fat, produced in liver and imperative for proper functioning of body. It is a vivacious fat in the blood. If the level of cholesterol surpasses its limit in blood, it might root solemn health complications like arteriosclerosis. The development of plaque in arteries that causes

myocardial infarction is termed as arteriosclerosis. The outermost sheath of each cell of human being is fabricated by cholesterol. Cholesterol travels in body with the help of lipoprotein. The disease which may be acute or chronic causes mortality. Increased or decreased level of nutrients and many essential entities are capable to root complications in the body. Therefore, increased level of serum cholesterol may lead to an

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Male	211 ± 1.58 ^B	198.75 ± 4.73 ^C	202.14 ± 8.52 ^{BC}	185± 6.55 ^{CD}	150.57 ± 2.16 ^B	139.14 ± 1.18 ^C	46 ± 0.82 ^C	48.71 ± 0.57 ^B	14.7 ± 0.42 ^{BC}	14.3 ± 0.64 ^{BCE}	6.01± 0.07 ^{ABC}	6 ± 0.04 ^{BCD}	1.01 ± 0.02 ^C	0.99 ± 0.01 ^C
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Female	212.44 ± 1.77 ^B	197.75 ± 1.6 ^C	208.15 ± 4.52 ^B	174.23 ± 5.57 ^D	149.31 ± 1.16 ^B	138.31 ± 1.25 ^C	44.54 ± 0.57 ^C	48.54 ± 0.63 ^B	14.51 ± 0.34 ^{BC}	14.21 ± 0.38 ^{BCE}	6.01 ± 0.07 ^{ABC}	6 ± 0.04 ^{BCD}	1.01 ± 0.01 ^C	1.02 ± 0.01 ^C

T0= Placebo (Distilled water with lemon flavour and yellow colour), T4= Concoction stored in glass bottle at refrigerated temperature, T8= Market product stored in glass bottle.

Discussion

Observed in study that, serum creatinine was remarkably lowered with the intake of garlic due to its defensive action against nephrotoxicity. In study of El-Shenawy and Hassan, garlic reduced increased serum creatinine level to its normal. Intake of ginger regulates gluconeogenesis through proteolysis which ultimately reduces the level of serum urea and creatinine.

Conclusion

T4 illustrated significant improvement in the dyslipidemic related biomarker like it reduces TC (210-178 mg/dL), TGs (216-143 mg/dL), LDL (157-132 mg/dL) and improve the level of HDL (45-52 mg/dL). T4 also improved other biomarkers like it decreases Urea, Uric acid, Creatinine and increase level of Hb. It is generalize that concoction is appropriate and cost effective for the treatment of dyslipidemia.

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