Thesis Title	Effect of Garlic Treatment on Lipid Status in Hypercholesterolemic Patients
Name	Siwaporn Sangwarn
Degree	Master of Science (Nutrition)
Thesis Supervisory Committee	
	Vichai Tanphaichitr,M.D.,Ph.D.,F.A.C.P.,F.R.A.C.P.
	Preeya Leelahagul, D.Sc.
	Ratana Pakpeankitvatana, D.Sc.
	Voravarn Tanphaichitr, M.D., M.S.
Date of Graduation	7 May B.E. 2540 (1997)

ABSTRACT

The purpose of this study is to evaluate the efficacy and safety of garlic powder capsule, Gallin-5®, treatment in 20 hypercholesterolemic women who attended the Nutrition Clinic, Department of Medicine, Faculty of Medicine, Ramathibodi Hospital. All of them had serum total cholesterol (TC) levels of $\geq$ 5.17 mmol/L, low density lipoprotein-cholesterol (LDL-C) levels of $\geq$ 3.36 mmol/L and triglygeride (TG) levels of < 2.26 mmol/L, with normal liver and renal function tests as well as normal fasting blood glucose (FBG) levels. All of them were normotensive.

The study consisted of 4 wks of dietary advice only (wk-4 to wk0) and 52 wks (wks 0-52) of drug period. Throughout 56 wks, the patients were instructed to consume diets with energy distribution of 15% protein-, 30% fat-, and 55% carbohydrate-calories. They were advised to use total soybean oil in their daily cooking to provide linoleate intake of 10% of

total energy, and to restrict their cholesterol intake to less than 300 mg/day. After dietary control for 4 wks without significant changes in serum lipid levels, they were treated daily with 312 mg of garlic powder divided into 2 doses for 52 wks.

After receiving the treatment with garlic powder capsule for 52 wks, the patients were classified into 2 groups, ie, 6 responders and 14 non-responders. The responders were the patients whose serum TC levels decreased more than 5% from their TC levels at wk 0 with the frequency of the decreases of $\geq$ 5 times out of 9 serum lipid determinations during 52- wk period whereas the non-responders did not show any decrease in their serum TC levels from their TC levels at wk 0 or the frequency of the decreases in their serum TC levels was less than 5 times out of 9 serum lipid determinations

Mean serum TC, LDL-C and plasma S-particle levels in 6 responders during 52-wks of the garlic treatment were significantly lower than those at wk 0, except at wks 8 and 12 . The mean net decreases in their serum LDL-C during garlic treatment from that at wk 0 ranged from 4.20 to 20.07%.

Though the compliance in taking garlic powder capsule of non-responders was comparable to responders, there were no persistent decreases in mean serum TC, LDL-C and plasma S-particle levels in non-responders during receiving the garlic treatment; only their mean serum TC, LDL-C, and plasma S-particle levels at wk 12 were significantly lower than those at wk 0. The mean net changes in their serum LDL-C levels during the garlic treatment from that at wk 0 ranged from -8.15 to 7.08%.

There were no significant changes in plasma fibrinogen levels, platelet aggregation, fasting blood glucose levels, and blood pressure in both responders and non-responders.

Both responders and non-responders exhibited the decreases in their serum and erythrocyte levels of 18:2 n-6, 20:4 n-6, 18:3 n-3, 20:5 n-3, and 22:6 n-3 while receiving garlic treatment from those at wk 0 but the differences did not reach statistical significance.

Daily ingestion of 312 mg of garlic powder for 52 wks in 20 hypercholesterolemic women was safe, as evidenced by the absence of clinical adverse effects, normal hematological parameters, serum mineral levels, renal and liver function tests.