

## Garlic Oil In Mild And Moderate Hypertension

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### SUMMARY

Effect of administering garlic oil on systolic and diastolic blood pressure of mild and moderate hypertensives has been studied. 25 hypertensives between 37 - 50 years, with recumbent diastolic blood pressure between 95 - 115 mm Hg took part in the study. When they were given 750-1500 mg garlic capsules (garlic oil w/w 0.25%) daily, 80 per cent of them showed a statistically significant reduction in systolic and diastolic blood pressure within a week. When garlic capsules were replaced by placebo the blood pressure increased to original levels within a week.

### INTRODUCTION

Garlic is the compound bulb of *allium sativum* linn (Fam. Liliaceae). Because of extensive healing and restorative properties attributed to it, it has been raised for hundreds of years by cultural peoples. Chopra et al<sup>1</sup> reported the beneficial effect of garlic in a variety of ailments such as gastritis, hypertension, typhoid and cholera. Garlic feeding has been shown to retard the development of atherosclerosis in rabbits<sup>2</sup> and lower serum cholesterol in man.<sup>3</sup> The aqueous extract of garlic has been shown to have a hypotensive effect in normotensive and hypertensive rates<sup>4</sup>. The objective of this study was to investigate the hypotensive effect of garlic in human subjects.

### METHODOLOGY

The criteria used for inclusion in the trial was a recumbent diastolic blood pressure of 95-115 mmHg at three consecutive visits. Suitable study candidates included patients who were newly diagnosed as having essential hypertension and who had not been treated previously. Each patient

provided informed consent. 25 hypertensives, 12 males and 13 females between 37-50 years of age participated in the study. Their mean age was 41.5 years. 4 patients had grade I retinopathy and 5 patients had grade II retinopathy. One patient with Grade II retinopathy also had left ventricular hypertrophy.

Patients had to be hospitalized at the commencement of the trial but were followed up from home after the 2nd week. They were given one 250 mg Garlic oil capsule (Ranbaxy's Garlic pearls containing Garlic oil 0.25% w/w) thrice a day. If there was no response by the third day the dose was increased to 500 mg thrice a day and treatment continued for 1 week thereafter. Supine blood pressure was measured once in two days with the same mercury sphygmomanometer. After a 2-week washout period they were given the same number of placebo capsules daily and were followed up for a 3-week period.

### RESULTS

Sixteen patients required 500mg garlic oil capsules thrice a day. 4 patients were adequately controlled on 250 mg oil capsules thrice a day. 5(20%) patients failed to respond to treatment.

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The results of those who responded are shown in tables 1,2 and Figure 1 & 2.

TABLE: 1		
EFFECT OF ORAL GARLIC ON RESTING SUPINE SYSTOLIC BLOOD PRESSURE		
Treatment	Systolic blood pressure (mmHg)	
	Mean	SD
Before garlic	161.6	18.6
6th day on garlic	149.5	9.9
7th day off garlic	160.5	12.3

Tables 1 & 2 show the effect of garlic oil on resting supine systolic and diastolic blood pressure respectively. The reduction in systolic and diastolic blood pressures were statistically significant  $P < .02$  and  $P < .001$  respectively. Figure 1 shows the hypotensive effect of garlic oil and the rise in blood pressure to original level when garlic oil is replaced by placebo capsules.

TABLE: 2		
EFFECT OF ORAL GARLIC ON RESTING SUPINE DIASTOLIC BLOOD PRESSURE		
Treatment	Diastolic blood pressure (mmHg)	
	Mean	SD
Before garlic	107.9	15.0
6th day on garlic	93.5	5.2
7th day off garlic	102.5	6.4

Figure 2 shows the effect of garlic oil and placebo on supine systolic and diastolic blood pressure over a 3-week period. The maximum reduction in blood pressure was achieved by the end of the 1st week.

**DISCUSSION**

The results of this study indicate that Garlic oil when administered orally has a mild hypotensive effect on mild and moderate

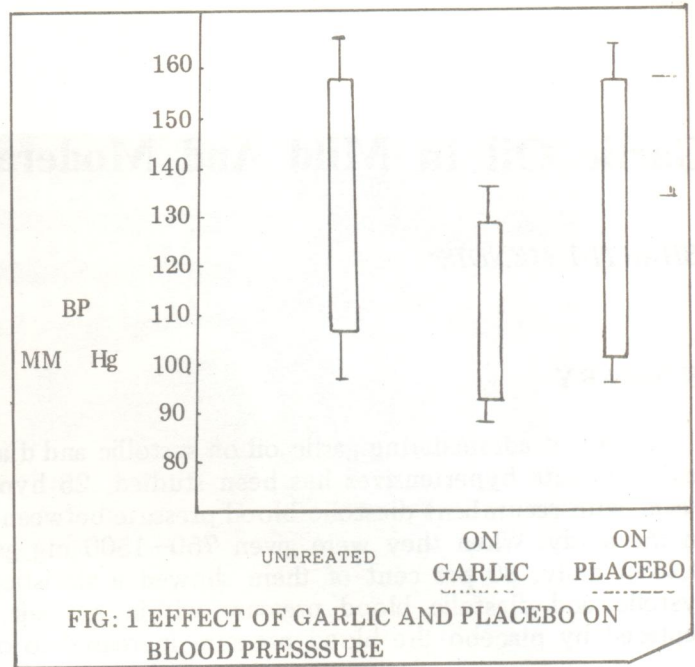


FIG: 1 EFFECT OF GARLIC AND PLACEBO ON BLOOD PRESSURE

hypertensives suffering from essential hypertension. The mechanism of the hypotensive effect is probably due to a diuretic effect. Sharafatullah et al<sup>b</sup> have demonstrated that garlic extract when given to normotensive dogs intravenously, in high doses. (54.0 mg/kg body weight), produces the same amount of increase in

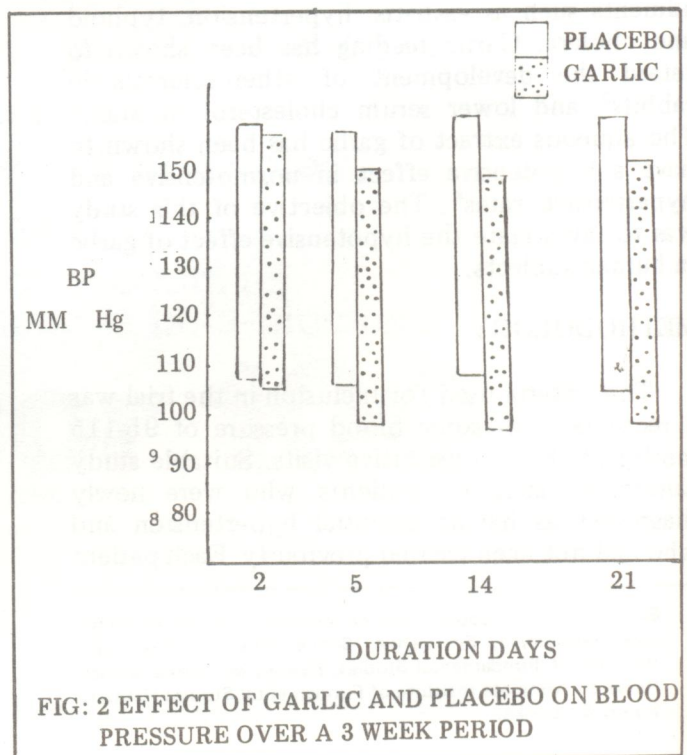


FIG: 2 EFFECT OF GARLIC AND PLACEBO ON BLOOD PRESSURE OVER A 3 WEEK PERIOD



urinary output as does furosemide 1.0 mg/kg body weight. The diuretic effect on human beings was not measured in the present study. It has also been found that garlic extract has a significant vasodilatory action<sup>4</sup>. The mechanism of the hypotensive effect of thiazides is attributed to diuretic and vasodilatory effects.<sup>6</sup> Garlic oil too probably exerts its hypotensive effect by a similar mechanism. Whether garlic in cooked form will also have the same beneficial effect of hypertension is not known.

Some mild and moderate hypertensives fail to show any hypotensive response when given garlic oil. The reason for this is not clear.

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