

LETTER TO THE EDITOR

HYPOGLYCAEMIC ACTIVITY OF AN INDIGENOUS DRUG (*GYMNEMA SYLVESTRE*, 'GURMAR') IN NORMAL AND DIABETIC PERSONS

Sir,

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'Gurmar' (*Gymnema sylvestre*, R. Br.) is a herb recommended in Ayurvedic medicine for the control of diabetes mellitus (1). Mhaskar and Caius carried out investigations in 1924-1929 on pharmacological actions of leaves of the herb (See Chopra *et al.*, 1) and found that the herb could control blood sugar levels of diabetics non-amenable to dietotherapy. They also suggested further investigations with this herb. After advent of insulin and other hypoglycaemic drugs, this field of work largely remained unexplored. Since there are limitations of drug therapy of diabetes with currently available modern drugs, need of search for an ideal hypoglycaemic agent still exists. Recently, Gurmar has been shown to decrease blood glucose levels of normal fasting rabbits (2). Hence, it was considered worthwhile to evaluate hypoglycaemic activity of the drug in normal and diabetic persons.

Effect of drug on normal persons was investigated on ten adult, healthy students (6 male and 4 female) of G. S. V. M. Medical College, Kanpur who were in the age group of 19-25 years. They were subjected to glucose tolerance test (G.T.T., 100 g oral glucose) and venous blood samples were collected at 30 min intervals upto 2 hrs. Blood sugar was estimated by the method of Sharma and Sur (3). All students were given an aqueous decoction of the shade-dried powdered leaves of Gurmar (obtained locally). The concentration was adjusted at 10 g/100 ml. Drug was given in dose of 2 g thrice daily for a period of 10 days, after which G.T.T. was repeated.

Effect of the drug on diabetic persons was studied on six patients (4 male and 2 female) attending diabetic clinic of L.L.R. and Associated Hospitals, Kanpur, who were in the age group of 35-50 yrs. These patients had mild to moderate hyperglycaemia without other complications and were not taking any treatment before attending the clinic. These patients were subjected to G.T.T. before and after giving them the decoction of Gurmar in above doses for 15 days.

Results of this study are summarised in Table I. Fasting blood sugar level in normal subjects was 70-86 mg per 100 ml (mean level, 80.2 ± 5.32). The levels

TABLE I : Effect of Gurmar administration on blood sugar levels of normal and diabetic subjects.

Subjects	Time	Mean blood sugar levels, mg% \pm S.E.M.		
		Fasting	G.T.T.	
			30 min	120 min
Normal volunteers (10)	Control	80.2 \pm 5.32	155.1 \pm 7.36	76.7 \pm 4.55
	After 10 days treatment	69.2 \pm 3.71*	132.2 \pm 4.66	66.8 \pm 4.52
Diabetic subjects (6)	Control	135.7 \pm 8.62	220.0 \pm 12.6	152.7 \pm 8.11
	After 15 days treatment	110.7 \pm 4.62**	180.7 \pm 6.21*	121.1 \pm 4.72***

Values significantly differ from respective controls.
(*P<0.05, **P<0.02, ***P<0.01, "t" test).

reached to maximum in 30 min following administration of oral glucose meal and returned to basal level after 2 hrs. Administration of the drug for 10 days significantly reduced the fasting blood sugar level. The levels at 30 min and 2 hrs after glucose load were also somewhat reduced, but the reduction was not statistically significant. In diabetic patients range of fasting blood sugar levels was 120-160 mg% (mean level, 135.7 \pm 8.62). The results of G.T.T. are shown in Table I. The blood sugar levels became maximum at 30 min after oral glucose meal. Even after 2 hrs blood sugar levels did not return to normal basal levels. In the follow up G.T.T. after drug treatment for 15 days, there was significant fall not only in fasting blood sugar levels but also in levels at 30 min and 2 hrs after oral glucose load.

The present study strongly suggests that Gurmar has definite hypoglycaemic activity in both the normal subjects and diabetic patients.

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REFERENCES

1. Chopra, R.N., I.C. Chopra, K.L. Handa and L.D. Kapoor. "Chopra's Indigenous Drugs of India". 2nd Ed., U.N. Dhur and Sons Pvt. Ltd., Calcutta, P. 336-339, 1958.
2. Muzaffar, S.M. Hypoglycaemic activity of an indigenous herb Pakist. *J. Sci. Res.*, **3** : 455, 1978.
3. Sharma, N.C. and B.K. Sur. Improved technique of blood sugar estimation. *J. Clin. Path.*, **19** : 630, 1966.