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LETTER TO THE EDITOR

A REPORT ON THE EFFECTS OF OCIMUM SANCTUM (TULSI) LEAVES AND SEEDS ON BLOOD AND URINARY URIC ACID, UREA AND URINE VOLUME IN NORMAL ALBINO RABBITS

Sir,

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The use of Ocimum sanctum (Tulsi) in gouty arthritis and in inflammatory conditions of joints has been recommended in the past (1,2,3). The leaves and seeds of Tulsi are reported to possess diuretic and laxative properties as well (4,5). The present work is for biochemical evaluation of the above claims wherein the effects of Tulsi leaves and seeds on blood and urinary uric acid and urea levels were ascertained.

Thirty two normal male albino rabbits (1.5 - 2.0 kg) were divided into 4 groups (n = 8 each) and lodged in separate metabolic cages. All the animals were fed on Hindustan Gold Mohr rabbit feed (100 g to each rabbit) for one month. The rabbits had free access to food and water. At the end of fourth week, 12 hrs fasted blood specimens were drawn from the control ear vein and 24 hrs urine of each rabbit was collected. These were analysed for uric acid (6,7) and urea (8,9). Thereafter, fresh leaves were fed to two groups in the doses 1 g and 2 g percent (≡ 0.4 g and 0.8 g dry weight) mixed in 100 g HGM feed and similarly dry seed powder was fed to the remaining two groups in the doses 1 g and 2 g each day for four weeks. The diet was entirely consumed by each rabbit.

Fasting blood and 24 hr urine samples of each rabbit were collected at the end of 4 weeks, analysed and the data statistically evaluated by applying Mahalanabis 'd' test. The results are summarized in Table I.

TABLE I : Comparative account of the effect of feeding *Ocimum sanctum* seeds and leaves to normal albino rabbits for four weeks on blood and urinary levels of uric acid, urea and urine volume.

Parameters	*Composition*	*Dry seeds*		*Fresh leaves*	
		1%	2%	1%	2%
Serum Uric acid (mg/dl)	Control	2.02 ± 0.13	2.22 ± 0.1	1.90 ± 0.08	1.64 ± 0.07
	Treated[a]	1.81 ± 0.11 (10.40)	1.89 ± 0.13 (14.86)	1.72 ± 0.09 (9.47)	1.42 ± 0.09 (13.047)
Urinary Uric acid (mg/24 hr)	Control	19.50 ± 1.58	19.68 ± 2.69	21.41 ± 2.55	25.75 ± 3.36
	Treated[a]	23.25 ± 2.19 (19.23)	25.11 ± 2.74 (27.59)	25.26 ± 2.73 (17.98)	29.77 ± 2.88 (15.61)
Blood Urea (mg/dl)	Control	16.77 ± 2.12	14.58 ± 1.08	15.56 ± 3.26	15.56 ± 2.83
	Treated[a]	18.40 ± 2.11 (9.72)	16.63 ± 1.13 (14.06)	17.01 ± 3.04 (8.17)	17.48 ± 2.88 (11.89)
Urinary urea (ml/dl)	Control	167.02 ± 3.89	158.09 ± 4.56	178.14 ± 4.05	
	Treated[a]	174.34 ± 4.03 (4.30)	175.48 ± 3.37 (11.00)	191.51 ± 4.73 (7.51)	179.08 ± 4.96 (10.34)
Urinary volume (ml/24 hr)	Control	36.25 ± 4.33	41.50 ± 6.04	51.25 ± 5.28	49.25 ± 4.59
	Treated[a]	42.75 ± 4.02 (17.93)	50.00 ± 5.70 (20.48)	59.25 ± 4.68 (14.14)	60.37 ± 4.86 (20.30)

a = 4 weeks feeding of specified quantity in diet. All values are means ± SD (n=8) with % change in parentheses.
Values in treated groups differed significantly (P<0.001) from controls.

In a 4 week trial, the seeds as well as leaves exhibited significant decrease in the serum uric acid level with a corresponding increase in the urinary uric acid. Similarly, a significant increase occurred in the blood as well as urinary urea levels at the end of 4th week. Significant increase in urinary volume was also observed.

Thus, it is evident from these observations that leaves and seeds of Tulsi both exert significant hypouricemic and uricosuric effect, though quantitatively these may not appear to be impressive. A possibility of reduced formation of uric acid in the body under the influence of Tulsi can also not be ruled out. The traditional use of this plant for treatment of gouty arthritis may thus be justified on the basis of present findings. On ad-ministration of leaves as well as seeds, blood urea levels increased resulting into increased urea excretion as well as diuresis.

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