

LETTER TO THE EDITOR

ANTINOCICEPTIVE ACTIVITY OF SEEDS OF *TRIGONELLA FOENUM GRACECUM* IN RATS

Sir,

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The exponentially increasing list of analgesic drugs and its side effects, primarily of self-administration has led to a considerable emphasis on use of herbal drugs. *Trigonella foenum gracecum*, (TFG) of the family fabacea, an annual herb, chiefly cultivated for its seeds, a common condiment in our Indian community is commonly known as fenugreek. TFG has rich medicinal properties, seeds have hypoglycemic and hypolipdaemic activities in normal persons as well as in patients with diabetes mellitus (1, 2). They are the richest and cheapest source of steroids (3). The glucocorticoids are known to suppress inflammation and the associated pain (4). In the traditional system of medicine, fenugreek is recommended in treatment of lymhangitis and rheumatic conditions to relieve pain (5, 6). The preset study was undertaken to observe the antinociceptive activity of TFG seeds.

The seeds of TFG (fenugreek) collected from local market and identified from pharmacognocist. Seeds were crushed to a coarse powder and extracted with ethanol (70% v/v) with soxhlet's extractor for 24 hours and then air-dried. The extract was stored in refrigerator, reconstituted in distilled water for injection just before use. All the drugs were injected i.p. at '0' minute.

Thirtysix adult Wistar albino rats of

either sex (150–200 gm) were selected and divided into 6 groups for this study. The control group received distilled water 0.5 ml, i.p. Groups 2 to 4 received TFG extract at doses of 5, 10, 20 mg/kg, i.p. respectively. Group 5 received naloxone 1 mg/kg and group 6 was administered TFG extract at the dose of 5 mg/kg in naloxone pre-treated rats. Pain threshold was assessed by 'tail flick latency' (TFL) measured with analgesio-meter (Techno Electronics Ltd. India) 30 min prior to study and at 0 min (i.e. just after drug/control), 30 min 60 min, and 120 min after drug administration. The cut off time was fixed at 20 seconds (7). Observations were statistically analysed using Student's 't' test and P values ≤ 0.05 were accepted statistically significant.

The mean TFL \pm SEM was 306 ± 0.1 seconds in the control group, which remained almost constant throughout the observation. The basal intra-group TFL did not vary significantly. TFG extract in all the doses studied increased the TFL significantly at all the times of observation showing a dose dependant antinociception. The onset of action was observed at $\frac{1}{2}$ h, peak action by 1 h and duration of action lasted for more than 2 h. Naloxane, on the other hand significantly reduced the pain threshold, the maximum reduction was observed at $\frac{1}{2}$ h.

TABLE 1: Antinociceptive effect of TFG seeds in albino rats.

Gr. No.	Treatment	Mean TFL in seconds \pm SEM					
		- 30 min	0 min	30 min	60 min	120 min	
1	Control	3.61 \pm 0.102	3.60 \pm 0.104	3.53 \pm 0.100	3.59 \pm 0.102	3.59 \pm 0.101	
2	TFG extract	5 mg/kg	3.70 \pm 0.104	3.70 \pm 0.101	6.20 \pm 0.134 [#]	6.80 \pm 0.26 [#]	4.40 \pm 0.201 [*]
3		10 mg/kg	3.70 \pm 0.103	3.70 \pm 0.104	6.50 \pm 0.123 [#]	6.99 \pm 0.121 [#]	5.53 \pm 0.204 [#]
4		20 mg/kg	3.64 \pm 0.103	3.64 \pm 0.103	6.71 \pm 0.102 [#]	7.01 \pm 0.101 [#]	6.24 \pm 0.204 [#]
5	Naloxane 1 mg/kg	3.22 \pm 0.140	3.17 \pm 0.146	2.34 \pm 0.153 [#]	2.38 \pm 0.156 [#]	2.34 \pm 0.164 [#]	
6	Naloxane + TFG 5 mg/kg	3.49 \pm 0.163	3.50 \pm 0.160	4.59 \pm 0.220 [#]	4.53 \pm 0.201 [#]	4.05 \pm 0.200 [#]	

* = P<0.05, @ = P<0.01, # = P<0.001 (df = 5)

TFG extract at the dose of 5 mg/kg in naloxane pre-treated rats raised pain threshold significantly by 31.64% over basal (-30 min) but this increase is less than that of TFG extract at the dose of 5 mg/kg (67.58%) at the corresponding time of observation, suggesting that naloxane

pre-treatment partially antagonised the effect of fenugreek. This indicates the involvement of some endogenous opioid in antinociceptive effect by fenugreek. However, with this experiment involvement of other mechanism and modulation of neurotransmitters cannot be commented.

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