

**EVALUATION OF LAXATIVE ACTIVITY OF CHITRAKADI VATI, AN AYURVEDIC FORMULATION IN RATS**

Ashok Kumar BS<sup>1\*</sup>, Deepa L<sup>1</sup>, Lakshman K<sup>2</sup>, Satish KV<sup>1</sup>,  
Chandra Shekar KB<sup>3</sup>. and Narayan Swamy VB<sup>4</sup>.

<sup>1</sup> Department of Pharmacognosy, Sri K.V.College of Pharmacy, Chickballapur, Karnataka (India).

<sup>2</sup> Department of Pharmacognosy, P.E.S. College of Pharmacy, Bangalore, Karnataka (India)

<sup>3</sup>Department of Chemistry, Jawaharlal Nehru Technical University, Anantapur, Andhra Pradesh (India)

<sup>4</sup>Department of Pharmacognosy, Manipal College of Pharmaceutical Sciences, Manipal, Karnataka (India)

**Summary**

Chitrakadi vati is well known ayurvedic formulation widely used for the treatment of constipation. So there is scientific validation the present study was evaluation of laxative activity of aqueous extract of Chitrakadi vati in rats. Laxative activity was assessed by increase in weight of faecal out put at 8 and 16<sup>th</sup> after the administration of extract. *Senna* was used as reference standard. The results of the study revealed that, the Chitrakadi vati exhibited significant laxative activity. This study thus justifies the traditional use of the Chitrakadi vati.

**Keywords:** Chitrakadi vati, Laxative activity, Senna.

## Introduction

Chitrakadi vati consisting of chitrak (*Plumbago Zeylanicum*), Pippali mula (*Piper longum*), Beeja poorra (*Citrus medica*), Rock salt, Asafetida (*Ferula foetida*), Trikatu. Chitrakadi vati is well known ayurvedic formulation, used traditionally for the treatment of constipation, and other uses are as appetizer, digestive tonic, abdominal tumors and carminative at 2 to 4 tablets thrice in a day. The present study is focused on the evaluation of laxative activity of Chitrakadi vati and justifies its traditional claim.

## Materials And Methods

### Preparation of Chitrakadi vati

The material of piper longum, rock salt, asafetida, trikatu, and chitraka were collected from Department of Pharmacognosy, Sri K.V.College of Pharmacy, Chickballapur, Karnataka. Piper longum, chitraka, trikatu, soak and grind with citrus juice and compressed into 250 mg tablets after bringing to consistency by continued grinding.

### Animals

Wister rats weighing about 150-200 g of either sex were acclimatized to the experimental room temperature  $23 \pm 2$  °C, controlled humidity conditions (50-55%) and 12 h light and 12 h dark cycle. They were caged with a maximum of two animals in each polypropylene cage and were fed with standard food pellets (Kamadenu Enterprises, Bangalore) and water *ad libitum*.

### Laxative activity

The laxative activity was performed according to Capasso *et al.* on rats of either sex, fasted for 12 h before the experiment, but with water provided *ad libitum*. The animals were divided into 4 groups of six animals each. The first group of animals, serving as control, received normal saline (25 ml/kg); the second group serving as reference, received aqueous extract of *Senna* (30 mg/kg) while third, fourth and fifth groups received aqueous extract of chitrakadi vati at doses of 50 and 100 mg/kg respectively. Immediately after administration of dose, the animals were isolated and housed separately in polypropylene cages suitable for collection of feces.

After 8 h of drug administration the feces were collected and weighed. Thereafter, food and water were given to all animals and faecal outputs were again weighed after a period of 16h.

### Results

The aqueous extract of chitrakadi vati showed significant ( $P<0.01$ ) laxative activity when compared with standard *Senna*. The dose dependent response was observed at 50 and 100 mg/kg. The faecal out put weight was increased as the dose increases at 8<sup>th</sup> hour. At 100 mg/kg of chitrakadi vati excretes mucous faecal matter, so at this dose Chitrakadi vati showed purgative activity

### Discussion

Chitrak promotes digestive power and appetite, uses in fever, oedema, leprosy and scabies (Yoganasimhan, 2000). Trikatu made up of long pepper, black pepper and ginger; long pepper is laxative, antiasthmatic, antiinfective agent in urinary tract infection, carminative, aphrodisiac and analgesic (Nadkarni, 1999). Black pepper traditionally used for constipation, piles, colic, as diuretic and analgesic (Yoganasimhan, 2000). Ginger is used in cardiac diseases and as carminative (Yoganasimhan, 2000). *Senna* known as laxative, contain anthraquinone glycosides sennoside (A, B, C and D), which are gastric irritants (Goodman, 2001). Laxative activity of Chitrakadi vati may be due to the presence of long pepper and black pepper. The probable mechanism may be as stimulant laxative.

Table 1: Laxative activity of aqueous extract of Chitrakadi vati in rats

Treatment	Dose (mg/kg, p.o)	Faecal out put (mg)	
		8h	8-16 h
Control	-	0.0866± 0.054	1.168± 0.0019
Senna	30	0.934 ± 0.10**	1.86 ±0.060*
Chitrakadi vati	50	0.352 ± 0.024*	1.12 ± 0.03
	100	0.800 ± 0.041**	1.08 ± 0.054

Mean±. S.E.M. (n=6), \* $P<0.05$ , \*\* $P<0.01$  Vs control (normal saline)

### Acknowledgment

The authors are wish to thank the management of Sri K.V.College of Pharmacy, Chickballapur, for providing required facilities.

### References

1. Vaidya Yoga Ratnavali. The Indian medical practitioners Co-operative Pharmacy and Stores Ltd., 4<sup>th</sup> edn. Madras, p55-57
2. Nadkarni KM and Nadkarni AK. Indian Materia Medica, vol. I, 3<sup>rd</sup> edn. M/s Popular Prakashan Pvt, Ltd., Bombay, 1999; p965, 990
3. Yoganarasimhan SN. Medicinal Plant of India Tamilnadu vol. II, 2000; p 426.
4. Capasso F, Mascolo N, Autore G, and Romano V. *Journal of Pharmaceutical Phamacology*. 1986; 13, pp. 627.
5. Ganapaty S, Subburaju T, Dash GK, and Suresh B. Diuretic, Laxative and Toxicity studies of *Cocculus hirsutus* aerial parts. *Fitoterapia*. 2002; 73, pp. 28-31.
6. Goodman & Gilmann. 2001. The Pharmacological Basis of Therapeutics, 10<sup>th</sup> edn. McGraw-Hill, Medical Publishing Division, New York, pp. 1045-46.