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Evaluation of Laxative Activity of Vaishvanara Churna: An Ayurvedic Formulation

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Abstract

Vaishvanara churna is an Ayurvedic formulation traditionally used as laxative, analgesic, anti-inflammatory and arthritic agent. Since there was no scientific proof of this formulation as laxative, we aimed to screen the laxative activity of Vaishvanara churna in rats. Rats were divided into 4 groups, 6 animals each. First group acted as control, second group as standard (Senna, 30 mg/kg) and third and fourth groups received aqueous extract of Vaishvanara churna at doses 100 and 200 mg/kg, respectively. Compared with the control group, aqueous extract of Vaishvanara churna at 100 mg/kg did not lead to a statistically significant increase in 8th-h fecal output; however, 16th-h output was significantly increased ($p<0.01$). Vaishvanara churna at 200 mg/kg significantly increased the fecal output of rats ($p<0.01$) compared with that of the control group both at 8th and 16th hours. Our investigation showed that Vaishvanara churna may possess potent laxative activity.

Keywords: Vaishvanara churna, laxative activity, Senna

Introduction

Constipation is a very common gastrointestinal disorder; it refers to the difficulty in passing of stool. Constipation may be caused by various identifiable disease processes (1,2). Treatment with classic drugs can cause chronic constipation, diarrhea enteritis and colorectal dysfunction. Traditional drugs are widely used from long time across the globe due to their wide therapeutic effectiveness with less side effects (3,4).

Vaishvanara churna is an ayurvedic formulation used traditionally as laxative, analgesic, and anti-inflammatory agent5. It is composed of rock salt (Saindhava lavana), ajowan (Trachyspermum ammi), ajamoda (Carum roxburghianum), shunti (Zingiber officianale), and haritaki (Terminalia chebula).

There seems to be no report on the laxative activity of Vaishvanara churna. Therefore, the present study was planned to examine the laxative activity of Vaishvanara churna in rats.

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Material and methods

Preparation of Vaishvanara churna and extraction

Vaishvanara churna contains 2 parts of Saindhava lavana (rock salt), 2 parts of Trachyspermum ammi (ajowan), 3 parts of Trachyspermum roxburghianum (ajamoda), 5 parts of Zingiber officianale (shunti), and 5 parts of Terminalia chebula (haritaki). These preparations were made into fine powder, processed through sieve (#100) and mixed. The prepared churna was extracted with water and dried.

Animals

Twenty four Wistar rats of either sex, weighing 150-200 g, were acclimatized to the experimental room at temperature 23 ± 2 °C, controlled humidity conditions (50-55%) and 12-h light and 12-h dark cycles. They were caged with a maximum of two animals in polypropylene cage and were fed with standard food pellets (Kamadenu Enterprises, Bangalore) and water ad libitum.

Screening of laxative activity

The laxative activity was performed according to Capasso et al.6 Rats of either sex were 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 oral normal saline (25 ml/kg). The second group, serving as reference, orally received aqueous extract of Senna (Cassia angustifolia) (30 mg/kg), while the third and fourth groups orally received aqueous extract of Vaishvanara churna at doses of 100 and 200 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 fecal outputs were again weighed after a period of 16h.

Statistical analysis

The data were expressed as mean ± standard error of mean (SEM). The differences were compared using one-way analysis of variance (ANOVA) followed by Dennett's test using PRISM software (version 4). The results were considered statistically significant when $p<0.05$.

Results

Compared with the control group, aqueous extract of Vaishvanara churna at 100 mg/kg did not lead to a statistically significant increase in 8th-h fecal output; however, 16th-h output was significantly increased ($p<0.01$, Table 1). Vaishvanara churna at 200 mg/kg significantly increased fecal output of rats compared with that of the control group both at 8th and 16th hours ($p<0.01$, Table 1).

Treatment	Dose (mg/kg, p.o)	Fecal output (g)	
		8h	8-16 h
Control	-	0.61± 0.06	1.24± 0.08
Senna	30	1.97 ± 0.05**	3.4 ±0.17**
Vaishvanara churna	100	0.77±0.03^{ns}	5.63±0.17**
	200	2.19±.0.06**	8.68±0.17**

Table 1: Laxative activity of aqueous extract of Vaishvanara churna in rats

Values are expressed as mean ± S.E.M (n = 6); ns= Not significant; **p < 0.01 compared to control group

Discussion

Vaishvanara churna was used as a laxative in Ayurvedic medicinal system. The contents of Vaishvanara churna possess laxative properties. Saindhava lavana is a composition of sodium chloride, traces of sodium bicarbonate, calcium sulfate, calcium chloride, and magnesium chloride. Saindhava lavana is traditionally used as antiulcer, laxative, aphrodisiac, and antiseptic (7).

Trachyspermum ammi (Umbelliferae) is popularly known as ajowan. It is traditionally used as anti-inflammatory, laxative, diuretic, antiseptic, antispasmodic, stimulant, tonic, and carminative. It is also effective in treating sore throat, bronchitis, diarrhea and cholera (8-10). Trachyspermum roxburghianum (Apiaceae) is traditionally used as laxative, carminative, stimulant, and inotropic. Trachyspermum roxburghianum is also administered in asthma, gastritis, hiccup, and bronchitis (11). Zingiber officianale is used in treating motion sickness, nausea, vomiting, gastritis, diarrhea, indigestion, abdominal colic, intestinal parasites, arthritis, colds, influenza, bronchitis, flatulence, muscle spasms, food poisoning, and certain heart conditions and also to promote perspiration and digestive system (12). Terminalia chebula (Combretaceae) is commonly known as chebulic myrobalan. Terminalia chebula is used in traditional medicine to treat constipation, kidney and urinary disorders. It can also be used as homeostatic, antitussive, diuretic, and inotropic remedy (13,14). Altogether, Vaishvanara churna showed significant laxative activity.

Conclusion

Our investigation showed that Vaishvanara churna may possess potent laxative activity, supporting the traditional claim of the Ayurvedic formulation.

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Conflicts of interest

The authors declare that they have no conflict of interest.

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