



# Clinical Efficacy of Katutrikadya Churna in the Management of Post-Operative Care in Bhagandara w.s.r to Fistula in Ano: A Comparative Study

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## Research Article

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## Abstract

In Ayurveda, there are eight branches. Ayurveda has eight branches. Because of its rapid action, use of surgical instruments (*Yantra & shastra*), *Kshar & Agni*, and inclusion of characteristics common to other branches, *Shalyatantra* is regarded as a notable branch. *anushastra* treats a wide range of illnesses (Para-surgical measures). The treatment of Bhagandara serves as the most significant, practical illustration of how *anushastra*, or *ksharsutra*, is used (Fistula-in-ano). Ayurveda classifies several disorders as "*Mahagada*" based on their severity and problematic behaviors. One of these is called Bhagandara (Fistula-in-ano). Many surgeons employ *ksharsutra*, with some somewhat successful outcomes. A lot of discomfort is experienced by the patient both during and after *ksharsutra* treatment. They are therefore afraid to change the *kshar sutra* later. In this study, *katutrikadya churna* with *anupana* of *kulattha kwath*, medications in compound formulation (30 patients), and Control group (30 Patients) were chosen. This group was given tab. diclofenac sodium as treatment. After meals, each group receives their particular medication twice daily. When the applied *kshar-sutra* has been changed with new *kshar-sutra*, follow-up is done every seventh day (weekly) for twenty days in a row.

**Aim:** To Study the clinical efficacy of *katutrikadya churna* in the management of postoperative care W.S.R to *bhagandara*.

## Objectives

- To assess the effect of compound formulation of *katutrikadya churna* after *kshara-sutra* application w.s.r to *bhagandara*.
- To assess the agnidipan, vatanulomana property of *katutrikadya churna*.
- Comparison in between the effect of *katutrikadya churna* and diclofenac sodium after *kshar-sutra* application w.s.r to *bhagandara*.
- This clinical investigation was comparative, open, randomized, and study. The study's findings demonstrated that *katutrikadya churna* is a potent vedanasthapan aushadhi (analgesic) in the pain experienced over the anal region during the administration of *kshar-sutra* for the treatment of *bhagandara*. Not only does *katutrikadya churna* heal the symptoms of ailments, but it also addresses their root causes.

**Keywords:** *Bhagandara; Fistula in Ano; Katutrikadya Churna; Kulatha Kwatha; Ksharsutra*

## Introduction

Ayurveda is a science of life, not only a science of medicine. Ayurvedic research offers a great deal of potential to contribute to the resolution of several difficult and unsolved medical science problems [1]. The development of treatments for a variety of disorders was aided by study on several ayurvedic topics. With regard to many disorders that contemporary medical research considers to be incurable, this importance is greatly increased. In Ayurveda, there are eight branches. Shalya-tantra, one of the eight branches of Ayurveda, is regarded as a notable branch due to its fast action, use of surgical instruments (*Yantra & shastra*), Kshar & Agni, and inclusion of traits common to other branches [2].

Anushastra treats a wide range of illnesses (Para-surgical measures). The treatment of Bhagandara serves as the most significant, practical illustration of how Anushastra, or Kshar-sootra is used (Fistula-in-ano) [3]. Ayurveda classifies several disorders as “Mahagada” based on their severity and problematic behaviours [4]. One of them is called Bhagandara (Fistula-in-ano). It is a tract that is lined with granulation tissues that link superficially on the skin around the anus and deeper in the anal canal or rectum. Various surgical procedures are currently used in contemporary surgeries based on the fistula-in-state. ano’s Among these are fistulotomy, fistulectomy, seton insertion, endorectal advancement flaps, ano-cutaneous advancement flaps, and fibrin adhesive glue fistula treatment, among other procedures.

In spite of many modification these operative managements has certain complications like incontinence to stools, loss of gluteal cushion, postoperative stenosis, postoperative pain etc. In Ayurveda acharya Sushrut has mainly described surgical management of Bhagandara which includes *chedana* and *bhedana* [5]. Along with this he has described ‘kshar sutra’ treatment in ‘*nadi-vrana*’ and added that Bhagandara also can be treated as *nadi-vrana*<sup>4</sup>. Acharya Charaka and Vagbhata have described the treatment of ‘Bhagandara’ by ‘kshar-sutra’. It means that the ‘Bhagandara’ has been treated by ‘*Ksharsutra*’ since Acharya charkas’ period [6]. Despite several modifications, these operational managements have certain side effects, including stoma incontinence, gluteal cushion loss, postoperative stenosis, postoperative discomfort, etc.

The surgical treatment of *bhagandara*, which includes *chedana* and *bhedana*, has mostly been covered by *acharya sushrut* in Ayurveda [7]. Additionally, he emphasized that *bhagandara* may also be treated as *nadi-vrana* and explained the “*kshar sutra*” therapy in “*nadi-vrana*.” The treatment of “Bhagandara” by “*kshar-sutra*” has been reported by *acharya charaka* and *vagbhat*. It denotes that from Acharya charaka’s time, the “Bhagandara” has been treated by the “*kshar-sutra*.” There is no explicit explanation of how to prepare ksharsutra in bruhatravee. Some of the preparation for *ksharsutra* has been detailed by *chakradatta* and *bhavaprakash*.

*Ksharsutra* is now often utilized by numerous surgeons, with varying degrees of success. However, it has been noted that *kshar-caustic sutra’s* activity causes various issues for patients [8], including: A lot of discomfort is experienced by the patient both during and after *kshar sutra* treatment. They are therefore afraid to modify the ksharsutra later. Some *avara satva* sufferers experience shock as a result of their discomfort. Additionally, the discomfort and illness-like sensation in the anal area interferes with their day-to-day activities. Constipation causes the discomfort to be worse. Hot water fomentation, the application of anesthetics gels, and oral analgesics are all used to treat this type of pain. But still some patient’s complaint of pain and gastric trouble due to analgesic induced gastritis. To assess the effectiveness of this ayurvedic analgesic, the current study, “to explore the clinical effects of *Katutrikadya churna* in the management of Post operation pain in *bhagandara*,” was conducted. An effort was made to gauge the curative component of the *katutrikadya churna’s* postoperative care for bhagandara by making an assessment of the findings and subjecting the patient’s whole data to statistical analysis after each week of therapy.

## Materials and Methods

### Research Design

- A Randomized Control Trial Participant
- Patients: After ksharsutra application in *bhagandara*.
- Gender-Both Male and Female
- Age-From 18 yrs-60 yrs of age.

### Sampling Procedure

Comparative, Open, Random sampling

Groups	No. of patients	Age	Gender	Intervention	Anupan	Dose/day	Duration
Group A-Interventional	30	18 yrs to 60 yrs	Male and Female	<i>Katutrikadya churna</i>	<i>luke warm kulattha kwath</i>	4 gms orally twice a day after breakfast and then at bed time after dinner.	Three follow ups were taken once in a week.
Group B -Control Group	30	18 yrs to 60 yrs	Male and Female	<i>Tb.Diclofenac sodium</i>	water	50 mg orally BD	Three follow ups were taken once in a week.

**Table 1:** Grouping.

## Selection of Cases

Patients after ksharsutra application in bhagandara with classical signs and symptoms after postoperative procedure were selected after clinical & objective examination. I had selected 60 patients of postoperative *bhagandara*. These patients were selected randomly. Follow-up assessment was done by specially prepared case record forms of every patient to meet all baseline requirement. Follow-up signs & symptoms were recorded.

## Method of Selection of Patients

### Inclusion Criteria

- Age 18 - 60 yrs.
- Patients were selected irrespective of gender, caste & religion.
- The Patients of *fistula in ano*, whose fistulous tract already ligated with plane thread, were selected for *kshar sutra* application.
- After application of *kshar sutra* application. After application of *kshar sutra* patient suffering with pain

### Drug

Sr. No.	Name	Latin name	Part
1	<i>Shunthi</i>	<i>Zinziber officinale</i>	1 part
2	<i>Marich</i>	<i>piper nigrum</i>	1 part
3	<i>Pippali</i>	<i>Piper longum</i>	1 part
4	<i>vacha</i>	<i>Acorus calamus</i>	1 part
5	<i>Hingu</i>	<i>Ferula narthex</i>	1 part
6	<i>Ajmoda,</i>	<i>Carum Roxburghianum</i>	1 part
7	<i>Saindhava</i>	<i>Rocksalt</i>	1 part
8	<i>Kulattha</i>	<i>Dolichos biflorus</i>	1 part

**Table 2:** Contents of *Katutrikadya churna*.

## Method of Preparation

*Katutrikadya churna* (KC) was prepared in the laboratory by following classical method described in 'Ayurvedic Formulary of India'. In addition, its main ingredients include traditional medicinal herbs [9]. All the ingredients of were procured from the local market. All these drugs were taken in powdered form in equal proportion to form "*Katutrikadya Churna*."

### Standardization of "*Katutrikadya Churna*":

- Description - Greenish brown colour powder
- Loss on drying - 8.86 %W/W
- Total ash - 32.93 %W/W
- Acid insoluble ash - 6.86 %WW

were selected.

### Exclusion Criteria

- The participants were not selected below the age of 18 years and above the age of 60 years.
- The patients suffering from *bhagandara* but associated with malignancy, uncontrolled diabetes mellitus, uncontrolled hypertension, prolonged bleeding and clotting time, severe anaemia and critically ill patients were not selected for the study.
- Patients who had discontinued the treatment during follow up and
- Patients who had developed any serious complications were dropped out from the study.

### Investigations

- Blood Investigations: CBC with ESR,
- Random blood sugar level,
- Bleeding time and clotting time.

- Water soluble extractive - 16.57 %W/W
- Alcohol soluble extractive - 0.18 %W/W

**Diet:** All *Pathyakar ahar vihar* mentioned in *Bhagandara*.

**Pathya:** Munga Dal, Balmulak, Patola, Shignu, Anabhishtandhi and Pathya diet.

**Apathya:** Amla, Lavana and Katu Rasa Pradhan Dravya, Madya, Cured, Maash, Cold water, Vyayama, Maithuna, Krodha, Prishthayan (traveling), excessive sitting, excessive walking, excessive standing, Ratrijagarana, Divaswap.

**Follow up:** (1) Symptomatic improvement, after every week up to 21 days.

**Case Record Form:** Record, of all patients included in trial is documented & follow up is mentioned in case record forms.

**Clinical examination:** Complete clinical examination from the point of view of *bhagandara* to diagnose & assess the

condition of patient.

**Criteria of assessment:** Assessment of patients was done subjectively as well as objectively.

**Subjective:** Pain alleviation was the primary criterion used

to evaluate improvement in the pain. For this reason, the level of pain was graded based on how it felt when sitting, moving, sleeping, and how long it persisted.

Sr. No	Parameters	Symptoms	Scoring
1	Severity of pain	Excruciating	5
		Horrible	4
		Distressing	3
		Discomforting	2
		Mild Pain	1
		No pain	0
	Duration of persistence of pain	> 1 hr after application of Kshar-Sootra.	5
		<1 hr after application of Kshar-Sootra.	4
		<45 mins after application of Kshar-Sootra.	3
		<30 mins after application of Kshar-Sootra.	2
		<15 mins after application of Kshar-Sootra	1
		No pain	0
3	Size of mandalas	2cm	4
		1.5cm	3
		1cm	2
		0.5cm	1
		0cm	0
4	Agnimadya	Present and not relieve even with the use of appetizer.	3
		Present but relieve with the use of appetizers.	2
		Translantly present	1
		Absent	0
5	Malapravritti	Malavarodha (Not passing stool > 1 day)	3
		Mild Malavarodha (Not passing stool since 1 day)	2
		Passing stool daily but having painful de defecation	1
		Samyak	0
6	Mutraipravritti	Mutravarodha (Not passing urine since last 8-12 hrs)	3
		Asamyak-Sadaha and Sakashta	2
		Asamyak-Sadaha	1
		Samyak	0
7	Gastric Irritability	Score 2+ Vomiting	3
		Score 1+ Abdominal pain	2
		Flatulence, Belching, Heart burn	1
		Absent	0
8	Pus Discharge	Profuse discharge (needs more than 3 pads / day)	3
		Moderate discharge (needs 2-3 pads / day)	2
		Mild discharge (needs single pad/day)	1
		No discharge	0

**Table 3:** Gradations of practically observed symptoms.

### Total effects of therapy

The percentage of symptom and sign alleviation for each patient will be as follows, and they will be categorized as either “cured,” “markedly improved,” “improved,” or “unchanged” according to the definition provided.

- **Cured:** if all indications and symptoms have disappeared completely, coupled with specific lab results, and the condition has persisted for about a year without medication.
- **Marely improved:** Significantly improved - A 50% or

greater reduction in the patient’s signs and symptoms as well as specific changes in physical and biochemical parameters will be regarded as significant improvements.

- **Improved:** Signs and symptoms must be reduced by 25% to 50% to meet the assessment criteria in order to be judged improved.
- **Unchanged:** Patients who do not see any improvement in their signs, symptoms, or test results will be regarded unaltered. Additionally, the patient who has improved by less than 25% is still included in this category.

### Observation and Results

Sr.no	Range of Age	Experimental Group		Control Group	
		No. of patients Gr.	%	No. of patients Gr. B (n=30)	%
		A(n=30)			
1	18-39	18	60.00 %	14	43.33%
2	40-60	12	40.00%	17	56.66%
	Total	30	100%	60	100%

**Table 4:** Showing Age Wise Distribution in 60 patients of *bhagandara*.

Sr.no	Gender	Experimental Group		Control Group	
		No. of patients Gr.	%	No. of patients Gr. B (n=30)	%
		A(n=30)			
1	Male	23	76.67 %	25	83.33%
2	Female	7	23.33%	5	16.67%

**Table 5:** Showing Gender wise Distribution in 60 patients of *Bhagandara*.

Sr.no	Gender	Experimental Group		Control Group	
		No. of patients Gr.	%	No. of patients Gr. B (n=30)	%
		A(n=30)			
1	Veg	4	13.33 %	5	16.67%
2	Mixed	26	86.67%	25	83.33%

**Table 6:** Showing *Ahara* wise Distribution in 60 patients of *bhagandara*.

Sr.no	Prakriti	Experimental Group		Control Group	
		No. of patients Gr.	%	No. of patients Gr. B (n=30)	%
		A(n=30)			
1	<i>Vata-pittaj</i>	17	56.67 %	10	33.33%
2	<i>Pittaj-kaphaj</i>	6	20.00%	5	16.67%
3	<i>Vata-kaphaja</i>	7	23.33%	15	50.00%

**Table 7:** Showing *prakriti* pattern distribution in 60 patients of *bhagandara*.

Sr.no	Bowel habits	Experimental Group		Control Group	
		No. of patients Gr. A(n=30)	%	No. of patients Gr. B (n=30)	%
		1	Regular	10	33.33 %
2	Irregular	20	66.67%	16	53.33%

**Table 8:** Showing bowel habits wise distribution in 60 patients of bhagandara.

Sr.no	Bowel habits	Experimental Group		Control Group	
		No. of patients Gr. A(n=30)	%	No. of patients Gr. B (n=30)	%
		1	Shataponak	2	6.67%
2	Ustragriva	10	33.33%	15	50.00%
3	Paristravi	18	60.00%	14	46.67%
4	Sambukavarta	0	0.00%	0	0.00%
5	Unmargi	0	0.00%	0	0.00%

**Table 9:** Showing type of bhagandara wise distribution in 60 patients of bhagandara.

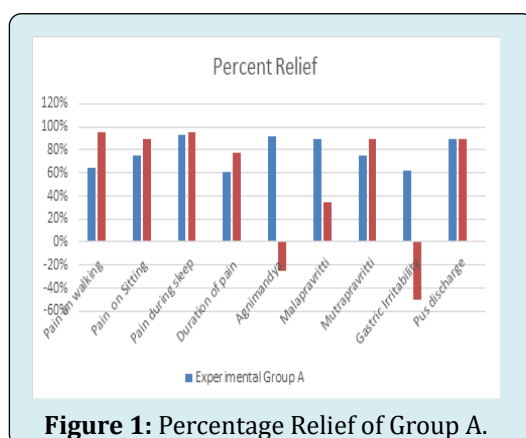
Sr no	symptoms	Group A				Group B			
		BT	AT	Diff.	% RELIF	BT	AT	Diff.	% RELIF
1	Pain on walking	86	31	55	64%	74	3	71	96%
2	Pain on sitting	77	19	58	75%	58	6	52	90%
3	Pain during sleep	60	4	56	93%	24	1	23	96%
4	Duration of pain	71	28	43	61%	63	14	49	78%
5	Agnimandya	52	4	48	92%	48	60	-12	-25%
6	Malapravritti	38	4	34	89%	49	32	17	35%
7	Mutrpravritti	12	3	9	75%	9	1	8	89%
8	Gastric Irritability	32	12	20	62%	30	45	-15	-50%
9	Pus discharge	49	5	44	90%	52	6	46	89%
Average score		53	12.22	40.77	77.885	45.22	18.66	26.55	55

**Table 10:** Table showing effect on Symptoms Score of 60 Patients of Bhagandara.

### Effect of therapy on symptoms score

Overall, it was shown that Group A (77.88 percent) had more alleviation than Group B. (55.00 %). In this series,

every symptom was examined in the manner shown in the table. In Group A, there is a greater percentage of remission from sleep-related discomfort symptoms.



**Figure 1:** Percentage Relief of Group A.

## Discussion

Comparative Clinical Efficacy of Katutrikadya Churna in the Management of Post-Operative Care W.S.R to Bhagandara: was the title of a study that was conducted. On the basis of observations made in the form of tables and graphs and in-depth discussion in the preceding chapters, the following conclusions can be taken at the end of the research.

- The age range of 18 to 39 years was shown to have a higher incidence of bhagandara (Fistula-in-ano) and a lower incidence in the age range of 40 to 60 years. This study's average age of 35 demonstrates that Bhagandara is more common in middle age. More exposure to the etiological variables for Bhagandara might be the cause. The sickness of middle age is bhagandara (fistula-in-ano), according to literature.
- More males than females were found to have Bhagandara. This may be due to the fact that males are more likely than females to have anal glands. The social structure of the society may also have contributed to this outcome. Additionally, according to the literature, fistula in-ano occurs less frequently seen in females as compared to male. (Goligher).
- Patients who followed a mixed diet had more symptoms than those who were vegetarians only, according to Diet Wise Distribution. Spicy foods are typically preferred by patients on mixed diets, which may encourage excessive effort and worsen discomfort. Less patients were engaged in sedentary employment, while the majority of patients were engaged in active labour. The Vata dosha, which encourages discomfort, is increased by physical work.
- Patients with *vata pittaj prakriti* were more prevalent in the research, followed by those with *Vata kaphaj* and *Pitta kaphaj*. It demonstrates that after receiving *Kshara Sutra*, significant Vata Pitta patients have more discomfort. The participation of *Prakriti* and *Dosha* may be the cause.
- While some individuals had regular bowel movements, the majority of the patients had irregular bowel movements. Patients with bowel irregularities must strain when defecating, which hurts and makes them more vulnerable to anal gland infection, which results in *Bhagandara*.
- *Paristrvi bhagandara* was the most common treatment, followed by *ushtragriva bhagandara*, with very few patients receiving *shataponak bhagandara* and none receiving *shambukavarta* or *ummargi bhagandara* [10].

## Effect of Therapy

- **In pain on walking:** The percent relief in pain on walking by *katutrikadya churna* was 64% and that of *diclofenac sodium* was 96%. That means that both the

drugs are effective in pain on walking but *diclofenac sodium* is more potent than *katutrikadya churna* for the symptom.

- **In pain on sitting:** The percent relief in pain on sitting by *katutrikadya churna* was 75% and that of *diclofenac sodium* was 90%. It means that both the drugs are effective in pain on sitting but *diclofenac sodium* is more potent than *katutrikadya churna* for the symptom.
- **In pain during sleep:** The percent relief in pain during sleep by *katutrikadya churna* was 93% and that of *diclofenac sodium* was 96%. It means that both the drugs are effective in pain during sleep but *diclofenac sodium* is more potent than *katutrikadya churna* for the symptom.
- **In duration of persistence of pain:** The percent relief in persistence of pain by *katutrikadya churna* was 61% and that of *diclofenac sodium* was 78%. It means that both the drugs are effective in duration of persistence of pain but *diclofenac sodium* is more potent than *katutrikadya churna* for the symptom.
- **Agnimandya:** The percent relief in *agnimandya* by *katutrikadya churna* was 92% and that of *diclofenac sodium* the symptom is increased by 25%. It means that both *katutrikadya churna* is reducing *agnimandya* whereas *diclofenac sodium* is increasing *agnimandya*.
- **Vatanuloman:** The percent relief in *malapravritti* and *mutrapravritti* by *Katutrikadya churna* was 89% & 75% respectively whereas that by *Diclofenac sodium* was 39% & 89%. It means that for *vatanuloman* property *Katutrikadya churna* is more potent than *Diclofenac sodium*.
- **Gastric irritability:** The percent relief in gastric irritability by *katutrikadya churna* was 62% whereas there is increase in the symptom by 59% by *diclofenac sodium*.
- **Pus discharge:** The percent relief in Pus discharge by *katutrikadya churna* was 90% and that of *diclofenac sodium* was 89%. It means that both the drugs are about equally effective for the symptom.
- **Probable Mechanism of Katutrikadya Churna's pain-relieving effects:** *Guru, ushna, and snigdha dravya* are the main ingredients of *Katutrikadya Churna*, which would lessen the elevated vata dosha. Additionally, because of its *vatanuloman* function, it lessens constipation, which lessens straining during urination, one of the factors contributing to discomfort. Additionally, it raises *jatharagni*. Due to the *sangyasthan* feature of *vacha*, it also lessens pain intensity and avoids a condition of shock brought on by extreme pain.

## Conclusion

According to the findings of the current study, *katutrikadya churna* is a potent *vedanasthan* *aushadhi*

(analgesic) for discomfort that develops over the anal area when bhagandara is treated with kshar-sutra. By possessing agnidipan and vatanuloman properties, katutrikadya churna not only soothes pain but also addresses the primary causes of the ailments, namely agnimandya and malavarodha. It also lessens pus discharge and irritation. Additionally, unlike the modern allopathic painkiller (Diclofenac sodium), it does not cause stomach irritation. (With the exception of people who already have hyperacidity and other irritable stomach issues).

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