



ORIGINAL RESEARCH ARTICLE

**EVALUATION OF PURGATION ACTIVITY OF CASSIA FISTULA IN SKIN DISEASES  
DUE TO VITIATED PITTA DOSHA**

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**Abstract**

**Background:** It has been reported from various studies in the general population and primary care that around 15-20% of people are suffering from various skin diseases. Due to pathogenic materials of skin disorders as described in charaka samhita, 18 types of skin disorders appear.

**Aims and objectives:**

To evaluate the efficacy of *Cassia Fistula* in skin diseases due to vitiated pitta dosha.

**Methods and materials:** Fifty subjects suffering from skin disease due to vitiated pitta dosha were studied. Total duration for trial treatment was of 21 days. The patients were administered with internal oleation, external oleation and fomentation. Later they were given purgation with decoction of fruit of *Cassia fistula*.

**Results:** It is observed that, the 'p' values were almost highly significant ( $p < 0.001$ ) in all the parameters. Hence, it can be concluded that the purgation therapy by *Cassia Fistula* decoction is more effective in Skin disease due to vitiated pitta dosha. The results are encouraging and support the classical claim that *Cassia Fistula* is effective in reducing the symptoms of skin disease due to vitiated pitta dosha and can be used extensively in the treatment.

**Conclusion:** On the basis of the results of this study it may be concluded that, the *Cassia Fistula* is having significant effect in ameliorating the skin diseases due to pitta origin and is safe drug of choice for Purgation therapy.

**Key Words:** *Cassia Fistula*, Aragvadhya, purgation therapy, Virechana, skin disease

**Key Messages:**

Purgation with *Cassia Fistula* is safe and effective in ameliorating the skin diseases due to pitta origin.

**Introduction:**

It has been reported from various studies in the general population and primary care that around 15-20% of people are suffering from various skin diseases. In those days intake of food & drink made up of incompatible ingredients, as also food & drink that are liquid, oily & heavy are very common things. Suppressing the natural urges, indulging in physical exercises and exposing themselves to the extreme heat after having overloaded the stomach with food &

drink, sleep regularly in day, sexual activities after intake of food - are not rare things. Using cold & hot edibles successively, indulging in fasting & goring, taking diet with violating the proper sequence, afflicted with excessive perspiration, or toil, or terror, quickly indulge in cold water – are also habitual things. Eating food during indigestion and when previously food is not digested, use of contraindicated items like cakes, raw sugar, milk, and use of rice that is new, curd, fish, salt and things that are sour



are very common. These causes vitiate tridosha<sup>1</sup>. They affect skin, blood, muscle, kleda (~ watery content of body). These are pathogenic materials of skin disorders. Due to which 18 types of skin disorders appear according to charaka samhita. These are kapala, audumbara, mandala, rushyajivha, pundarika, sidhma, kakanaka, eka kushtha, charma, kitibha, vipadika, alasaka, dadru, charmadala, pama, visphotaka, shataru & vicharchika<sup>2</sup>.

Symptoms of skin disease due to vitiated pitta dosha according to dominance of vitiated dosha Charaka<sup>3</sup> are: severe burning sensation, redness, discharge, visphotaka (pimples), itching. Out of these 18 types audumbara, rushyajivha, pundarika from sapta maha kushtha & pama, shataru, visphota, dadru, charmadala are due to vitiated dominance of pitta and association of pitta – are having very common occurrence. All these 8 types show common symptoms such as redness, burning sensation, pain, itching and pimples<sup>4</sup>.

Considering all these quotations, commonly occurring symptoms like redness, pimples, discharge, burning sensation & itching are included for study.

In case of skin diseases due to dominance of pitta dosha, the purgation therapy is recommended as the first choice of treatment by charaka<sup>5</sup>.

Purgation therapy is the major procedure included under panchakarma therapy (~ purification therapy). Purgation therapy expels out the vitiated dosha from lower GIT through the anus<sup>6</sup>.

Aacharya charaka has described skin diseases as the first indication for purgation therapy. It may be pointed out that Vamana is stressful process but purgation therapy<sup>7</sup> is a comparatively easy procedure for both doctor & patient.

*Cassia Fistula* is described as phalini (fruit is useful part of these herbs) purgative drug<sup>8</sup>,

mentioned in herb group useful for purgation<sup>9</sup> in charak samhita. He has described cassia

Fistula for external application in skin diseases, specially the name of that chapter as 'Aragvadhya' itself indicates the efficacy of *Cassia Fistula* as drug of most choice for skin diseases<sup>10</sup>.

*Cassia Fistula* is mild, sweet, cold and is particularly beneficial for those suffering from fever, heart disease, gout, hiccough, etc. *Cassia Fistula* is particularly used in children, old, wounded, wasted and delicate persons. Precisely, we can say that it is safe for all<sup>11</sup>.

Along with these qualities bhavprakasha had mentioned its anti skin disease property. And dhanavantari nighantu, madhav nidan, nighantu ratnakar, kaiyadev nighantu also recommends *Cassia Fistula* as purgation therapy herb.

#### **Aims and objectives:**

To evaluate the efficacy of *Cassia Fistula* in skin diseases due to vitiated pitta dosha.

#### **Materials and methods:**

**Study design:** Open labeled randomized uncontrolled clinical trial.

#### **Selection of patients:**

Subjects suffering from skin disease due to vitiated pitta dosha aged between 30-60 years, irrespective of sex, cast, religion, socioeconomic strata were selected.

**Study Population:** Pune Municipal Corporation Area

**Sampling:** Simple random sampling technique using lottery method.

**Sample size:** 50

#### **Study setting:**

The study was carried out at Ashtang Ayurved College's Hospital, 2062, Sadashiv Peth, Pune – 411 030, from date 29.09.2006 to 28.10.2009.

#### **Ethical considerations:**



Ethical clearance was obtained from the institutional ethics committee (IEC) of EC No. 1/2006 dated 29.09.2006. Informed consent obtained from all subjects.

#### **Inclusion criteria –**

1. Subjects suffering from Skin diseases having symptoms- redness, pimples, discharge, burning sensation, itching.
2. Subjects aged between 30-60 years, irrespective of sex, cast, religion, socioeconomic strata.

#### **Exclusion criteria<sup>12</sup> –**

1. The subjects which are contraindicated for Purgation therapy such as weakness, acute fever, low digestive power, dehydration, childhood, anal injury, rectal prolapse, anal prolapse, ulcerative colitis, hemorrhoids, alcoholism, operated emaciating, chest disease, pregnant, postpartum period.
2. Subjects suffering from serious diseases like cancer, tuberculosis, diabetes, a history of stroke, myocardial infarction, coronary artery disease, cardiac failure, angina, life-threatening arrhythmia.
3. Below the age of 30 years and above 60 years.
4. Subjects with major psychiatric disorders.
5. Subject not ready to sign the consent & unable to comply with the protocol.

#### **Withdrawal Criteria -**

Subjects meeting any of the following criteria were to be withdrawn from the study:

1. Earnest request of the subject assigning a reason for the same.
2. Serious adverse events where continuation of study possess serious risk to the subject.
3. Subject consumes any other medicines used for the treatment of skin disease.

d. Sample size- Number of patients planned: 50 completed cases.

e. Safety - Monitoring of adverse events & Clinical examination.

#### **Interventions:**

**Drug:** for Snehana- sesame oil; for purgation-decoction of fruit pulp of *Cassia Fistula*

**Dose:** 50 ml of decoction

**Duration:** 21 days

**Follow up:** follow up visit after 7 days of purgation therapy

#### **Procedure:**

After recruitment, subjects were put on 15 days wash-out period for Allopathic medicine & 7 days for Ayurveda medicines; & before being administered the investigational product. On baseline visit (Day 1), medical history and physical examination were performed, an inclusion criterion was assessed and the trial treatment, i.e. purgation therapy by *Cassia Fistula* decoction was explained. Patients were administered with internal oleation till optimum signs of oleation and then subjected massage and fomentation for 3 days. On the next day morning about 8 A.M. empty stomach *Cassia Fistula* Decoction (prepared as described in SOP) was administered orally & subject was observed throughout the Main procedure for inadequate form, adequate form, excessive form or complications. After completing of Main procedure subject was advised for post Panchakarma behavior regimen & diet regimen.

**3. Assessment criteria:** Symptoms- redness, pimples, discharge, burning sensation, itching.

**Data analysis:** Statistical evaluation of the data obtained was done using means, standard deviation, percentage, mean difference Data analysis was done by using SPSS 17.0 statistical software. We have used Wilcoxon sign rank test



to find out the significance before study treatment & after study treatment.

**Results:**

It is observed that in the study treatment, P-value <0.05, hence considered as significant. Observations are made under following points:

**Gender** – In this research study, the gender proportion of subjects was 48% females & 52 % males. Average age of subjects was 43.32% with standard deviation of 8.895 % (See Table 1).

	Number of patients	Percent
Male	26	52.0
Female	24	48.0
Total	50	100.0

**Table 1: Gender of subjects**

**Skin diseases Types** – Out of 50 number of subjects; Subjects with audumbara type of skin diseases was 22 %, rushyajivha -18%,

shataru – 16%, pundarika - 14%, dadru – 12 % & pama, visphotaka & charmadala was each 6% (See Table 2).

Type of Kushtha	Number of patients	Percentage (%)
Audumbara	11	22.00
Rushyajihva	9	18.00
Shataru	8	16.00
Pundarika	7	14.00
Dadru	6	12.00
Pama	3	6.00
Visphotaka	3	6.00
Charmadala	3	6.00

**Table 2 : Kushtha Types**

**Proper oleation symptoms** – Out of total 8 symptoms described by Charaka samhita, oleation of external body was occurred in 92%, increase in digestive power was in 90%, nausea for oily substance was in 90%,

smoothness in body was in 86%, smooth passage of gases was in 82%, oiliness in stool was in 80% & non uniform faecal material was 46%. The symptom lightness in body was 32% (See Table 3).

Samyak Snehana Symptoms	Number of patients	Percentage (%)
Gatra Snigdghata	46	92.0
Agni Deepti	45	90.0
Snehodvega	45	90.0
Gatra Mardava	43	86.0
Vatanulomama	41	82.0



Purish Snighata	40	80.0
Asamhat Mala Pravrutti	23	46.0
Angalaghava	16	32.0

**Table 3: Symptoms of Adequate Oleation**

**Proper fomentation symptoms** – Out of total 5 symptoms, sweating was observed in 100% subjects, dis-appearance of coldness - 94%, dis-appearance of rigidity) – 70%, pain in the body is reduced - 68% & heaviness is reduced was in 66% subjects (See Table 4).

Samyak Swadana Symptoms	Number of patients	Percentage (%)
Sweda Pradurbhava	50	100.0
Sheeta Uparama	47	94.0
Stambha Nigraha	35	70.0
Shoola Uparama	34	68.0
Gaurahava Nigraha	33	66.0

**Table 4 : Symptoms of Proper Sudation**

**Yoga after purgation therapy** (~ form/ stages of purgation therapy) – In this research study, total 78% subjects were having adequate form, which explains the proper effect of purgation therapy by *Cassia Fistula* decoction. Inadequate form was also

recorded for 20% subjects & excess form was observed in 2%. Safety of *Cassia Fistula* drug as a choice for purgation therapy can be proved by 0% of complications in this study (see table 5)

	Number of patients	Percent
Ayoga	10	20.0
Samyak – Yoga	39	78.0
Atiyoga	1	2.0
Vyapada	0	.0
Total	50	100.0

**Table 5 : Outcome of Purgation**

**Assessment of purgation therapy** – In this study 78% subjects was of madhya shuddhi (moderate purification), 20% was of avara

shuddhi (least purification) & 2 % was of pravara shuddhi (superior purification) (See Table 6).



Grade of Purification	Number of patients	Percent
Superior	1	2.0
Moderate	39	78.0
Least	10	20.0
Total	50	100.0

**Table 6 : Grade of Purgation**

**Effect on Redness Symptom** – P-value < 0.05 therefore there is significant difference between pre-treatment & post-treatment symptom. Out of 50 subjects 58% (n=29) of grade 2 was in pre-treatment, which after

treatment was 58% (n = 29) of grade 1 after treatment. About this symptom negative rank was in 41 subjects, positive rank was in 1 subject & ties were in 7 subjects (See Table 7). Test used Wilcoxon Sign Rank Test.

Grade	Before treatment	After treatment
0	1 (2%)	11 (22%)
1	4 (8%)	29 (58%)
2	29 (58%)	9 (18%)
3	16 (32%)	1 (2%)

	Number of patients	P-value
Negative Rank	41	<0.001
Positive Rank	1	
Ties	7	

**Table 7 : Effect on Redness Symptom**

**Effect on Pimple Symptom** - P-value < 0.05 therefore there is significant difference between pre-treatment & post-treatment symptom. Out of 50 subjects 60% (n=30) of grade 2 was in pre-treatment, which after treatment was 44% (n =22) of grade 0 after

treatment. Present research study had shown that before treatment the pimple symptom Negative rank was in 38 subjects, positive rank was in 1 subject & ties were in 11 subjects (See Table 8). Test used- Wilcoxon Sign Rank Test

Grade	Before treatment	After treatment
0	1 (2%)	22 (44%)
1	4 (8%)	18 (36%)
2	30 (60%)	9 (18)
3	15 (30%)	1 (2%)

	Number of patients	P-value
Negative Rank	38	<0.001
Positive Rank	1	
Ties	11	

**Table 8 : Effect on Pimple Symptom**



**Effect on Discharge Symptom-** P-value < 0.05 therefore there is significant difference between pre-treatment & post-treatment symptom. Out of 50 subjects 36% (n =18) of grade 2 was in pre-treatment, which after treatment was 50% (n = 25) of grade 0 after treatment. This study had

Grade	Before treatment	After treatment
0	9 (18%)	25 (50%)
1	14 (28%)	21 (42%)
2	18 (36%)	4 (8%)
3	9 (18%)	0 (0%)

**Table 9 : Effect on Discharge Symptom**

shown that before treatment the discharge symptom Negative rank was in 31 subjects, positive rank was in 00 subjects & ties were in 19 subjects (See Table 9). Test used- Wilcoxon Sign Rank Test.

	Number of patients	P-value
Negative Rank	31	<0.001
Positive Rank	0	
Ties	19	

**Effect on Burning Sensation** - P-value < 0.05 therefore there is significant difference between pre-treatment & post-treatment symptom. Out of 50 subjects 32% (n =16) of grade 5 was in pre-treatment, which after treatment was 8% (n

Grade	Before treatment	After Treatment
1	0 (0%)	4 (8%)
2	0 (0%)	9 (18%)
3	1 (2%)	19 (38%)
4	0 (0%)	8 (16%)
5	16 (32%)	4 (8%)
6	5 (10%)	5 (10%)
7	8 (16%)	1 (2%)
8	10 (20%)	0 (0%)
9	9 (18%)	0 (0%)
10	1 (2%)	0 (0%)

**Table 10 : Effect on Burning Sensation Symptom**

= 4) of grade 1 after treatment. In present study, this symptom's negative rank was in 45 subjects, positive rank was in 00 subjects & ties were in 5 subjects (See Table 10). Test used- Wilcoxon Sign Rank Test.

	Number of patients	P-value
Negative Rank	45	<0.001
Positive Rank	0	
Ties	5	



**Effect on Itching Symptom** - P-value < 0.05 therefore there is significant difference between pre-treatment & post-treatment symptom. Out of 50 subjects 22% (n =11) of grade 10 was in pre-treatment, which after treatment was 24% (n = 12) of grade 2 after treatment. This research

Grade	Before treatment	After Treatment
1	0 (0%)	10 (20%)
2	1 (2%)	12 (24%)
3	0 (0%)	8 (16%)
4	0 (0%)	9 (18%)
5	4 (8%)	7 (14%)
6	7 (14%)	3 (6%)
7	11 (22%)	1 (2%)
8	11 (22%)	0 (0%)
9	5 (10%)	0 (0%)
10	11 (22%)	0 (0%)

**Table 11 : Effect on Itching Symptom**

study had shown that before treatment the itching symptom negative rank was in 48 subjects, Positive Rank was in 00 subjects & Ties was in 2 subjects (See Table 11). Test used- Wilcoxon Sign Rank Test.

	Number of patients	P-value
Negative Rank	48	<0.001
Positive Rank	0	
Ties	2	

**Discussion:**

Comparative data analysis revealed that the ‘p’ value in all the symptoms (redness, pimples, discharge, burning sensation & itching) was highly significant. From the data of the objective features, the ‘p’ values were almost highly significant (p < 0.001) in all the parameters. Hence, it can be concluded that the Purgation therapy by *Cassia Fistula* decoction is more effective in Skin disease due to vitiated pitta dosha. The results are encouraging and support the classical claim that *Cassia Fistula* is effective in reducing the symptoms of Skin disease due to vitiated pitta dosha and can be used extensively in the treatment.

Toxicity potentials of fruits as laxative with reference to Senna was studied. LD50 of the drug is 6600mg/kg without any pathological effects on the organs examined microscopically<sup>13</sup>.

The pharmacological and toxicological studies of the aqueous infusions of the pods of the plant were studied in rodents. The aim of the study was to estimate medium lethal dose after oral administration. Results showed that the extract of pods possess significant dose dependent laxative activity between 100 and 500 mg/kg, in rats<sup>14</sup>.

Probable mode of action of the *Cassia Fistula* in skin disease due to vitiated pitta dosha: All types of Skin diseases are due to vitiated tridosha,



hence one should treat the patient according to dominance of vitiated Dosha. The vitiated dosha which is more dominant that should be treated first. As per these guidelines of Charak, instead of going in details of 18 types of skin disease, this study is about Skin disease due to vitiated pitta dosha. Charaka has recommended Shodhana in Skin disease due to vitiated pitta dosha & has given more emphasis on Purgation therapy to balance the vitiated Pitta Dosha. Many drugs have been described for purgation therapy in classical texts. Out of these, for the present study *Cassia Fistula* was selected. Charaka has considered it as the best purgation therapy drug. *Cassia Fistula* is sweet & bitter in taste; heavy, soft, unctuous by property; cool by virya (~ potency) and sweet vipaka<sup>15</sup>. Hence, the drug is useful in pitta vitiation. In ashtanga hridaya, *Cassia Fistula* is described as Virechana drug and in sushruta samhita, *Cassia Fistula* has been described as the adbhogahara drug. As per charaka samhita, *Cassia Fistula* is the best mild purgative drug. Therefore, it helps in kapha nirharana along with vatanulomana. Thus, the drug helps in breaking of dosha - dushya complex in the skin diseases due to vitiated pitta dosha.

### Conclusion:

On the basis of the results of this study it may be concluded that, the *Cassia Fistula* is having significant effect in ameliorating the skin diseases due to pitta origin and is safe drug of choice for Purgation therapy.

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