



Case Study

ANTIMICROBIAL EFFECT OF *UTHAMADI CHOORNA* DURING *KSHARASUTRA* THERAPY IN *BHAGANDARA*

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ABSTRACT

In the modern era, ano rectal diseases are increasing day by day due to the changes in life style especially the food habits. Fistula in ano is one among them. It is a chronic illness which is, though not fatal but quite discomfoting and troublesome to the patient and often puts a deep impact on the quality of life of a patient. Fistula in ano is a track lined by granulation tissue which connects peri anal skin superficially to anal canal, ano rectum or rectum deeply. The main clinical symptoms consist of pain, swelling and pus discharge. Due to higher recurrence rate and postoperative complication, fistula-in-ano is a headache in current surgical practice. *Bhagandara* which is described in Ayurveda classics can be correlated with Fistula in ano. *Ksharasuthra* therapy is a parasurgical procedure in Ayurveda which is found more effective in the management of fistula in ano. Even after *Ksharasuthra* application, pus discharge from fistulous tract delays the healing and makes the post operative period more difficult. So there is a need a of some adjuvant drug which can manage these problems in a better way and promote healing process by reducing the microbial load.

Uthamadi Choorna is mentioned in *Bhagandara prathishedha adhyayam* in *Ashtamga hridaya* and it contains *Guggulu*, *Thriphala*, *Khadira* and *Asana* which are having various chemical constituents that showed antimicrobial activity in pharmacological studies. The objective of the present study is to evaluate the antimicrobial effect of *Uthamadi choorna* during *Ksharasuthra* therapy in *Bhagandara*.

INTRODUCTION

Fistula-in-ano (*Bhagandara*) is an abnormal communication between the anal canal and peri anal skin. It is a tract lined by granulation tissue which opens internally into the rectum or anal canal and externally to the skin around the anus^[1]. Sedentary lifestyle, food habits and irregular daily routine are the main causes of perianal diseases. Fistula-in-ano is one among them and its high recurrence rate is still a matter of concern. It is usually a sequel of ano rectal abscess or may manifest secondary to some systemic diseases also.^[2]

The disease is described in detail in all the triads of classical Ayurvedic literature, including *Susrutha Samhitha* of Acharya Susrutha. Fistula-in-ano can be correlated with *Bhagandara*. The word "*Bhagandara*" is coined by the combination of "*Bhaga*" (perineal) and "*Darana*" (tearing up). The abscesses which appear in this area are called *Bhagandara pidaka* in their *Apakva avastha* and they are called *Bhagandara* on the stage of *Pakwavastha*. It may become *Nadeevrana* in its later stages.^[3]

Surgery is considered essential in many of the cases and modern surgical management of fistula in ano includes fistulotomy, fistulectomy, occlusion of the tract by fibrin threads and glues, Ligation of Intersphincteric Fistula Tract (LIFT) and Seton placing. Fecal incontinence and high recurrence rate are the main drawbacks of the surgical procedures.^[4] *Ksharasutra* therapy is a para surgical procedure which is found more effective in the management of fistula in ano. It is prepared with *Apamarga kshara*,

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Haridra and *Snuhi ksheera*. Presence of pathological organisms like staphylococci, streptococci, E.coli etc is one among the causes for delayed healing of the tract. The recurrence rate of anal fistula even after surgeries indicates the existence of unhealthy granulation tissue which is mainly due to such organisms. *Uthamadi choorna* is a formulation in powder form mentioned in *Bhagandara prathishedha adhyaya* of *Ashtamga hrdaya Uthara sthana*. The current study is to evaluate the antimicrobial effect of *Uthamadi choorna* internally during *Ksharasuthra* therapy in *Bhagandara*.

Case Report

35 years old male patient came to OPD of Salyatantra, Govt. Ayurveda College Thiruvananthapuram, with complaints of pain and swelling over perianal region for the last 4 months. He had a history of fistula in ano on 2019 and surgery was done. On anorectal examination, external and internal openings were found at 10'o clock and 12'o clock respectively. MRI revealed 4.5cm and 4.1mm wide intersphincteric fistula.

Name and Details of the Drug

Uthamadi choorna^[5] Contents

Examinations

- Inspection: External opening at 10 & 11'o clock positions.
- Per rectal examination: Mild spasm
- Probing: Probing done from 11'o clock towards 12'o clock and from 10'o clock towards inguinal area vertically upwards at a distance of 5cm.

Investigations

- RE, CT, BT, FBS, PPBS- Within normal limits
- HIV, HCV, HBSAg - Negative
- MRI – Linear, 4.5cm long & 4.1mm wide STIR hyperintensity of anterior peri anal fistula with internal opening in right anterior peri anal region at 11'o clock extending inter sphincterically, opening into low anal canal at 12'o clock.

Intervention

6gm of *Uthamadi choorna* along with *Madhu* as *Anupana* is given internally twice a day before food for a period of 21 days and the effect is assessed.

Drug	Used Part	Rasa	Guna	Veerya	Vipaka	Karma
<i>Amalaki</i> ^[6] (<i>Embilica officinalis</i>)	Dried fruit	<i>Amla, Katu, Kashaya, Madhura, Thiktha,</i>	<i>Ruksha, Laghu</i>	<i>Seetha</i>	<i>Madhura</i>	<i>Thridoshajith, Rasayana, Vrکشya, Chakshushya</i>
<i>Harithaki</i> ^[7] (<i>Terminalia chebula</i>)	Dried fruit	<i>Kashaya, Katu, Amla, Thiktha, Madhura</i>	<i>Ruksha, Laghu</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Anulomana, Deepana, Rasayana, Sarvadoshaprashamana</i>
<i>Vibhithaki</i> ^[8] (<i>Terminalia bellerica</i>)	Dried fruit	<i>Kashaya</i>	<i>Ruksha, Laghu</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Bhedaka, Kaphapithajith, Krminasana</i>
<i>Guggulu</i> ^[9] (<i>Commiphora mukul</i>)	Resin	<i>Katu, Thiktha, Kashaya, Madhura</i>	<i>Laghu, Sara, Tikshna, Visada, Sukshma</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosahara, Krmighna, Vedanasthapana, Varnya, Vranasodhaka, Thvachya, Vranaropana, Medohara,</i>
<i>Khadira</i> ^[10] (<i>Acacia catechu</i>)	Bark	<i>Thiktha, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheetha</i>	<i>Katu</i>	<i>Rakthasodhaka, Krmighna, Kaphapithahara, Kushtaghna, Medohara,</i>
<i>Asana</i> ^[11] (<i>Pterocarpus marsupium</i>)	Bark	<i>Katu, Thiktha, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Sheetha</i>	<i>Katu</i>	<i>Kaphamedo visoshanam, Rakthasodhanam, Rasayanam, Kushtaghnam, Vedanaasthapana, Sthambhanam, Tvachyam</i>
<i>Madhu</i> ^[12] (Honey)- <i>Anupana</i>		<i>Madhura, Kashaya</i>	<i>Laghu, Rooksha</i>	<i>Sheetha</i>	<i>Katu</i>	<i>Agnideepana, Ropana, Chakshushya, Sandhana, Tridosh prasamana, Srothovishodana, Hridayam,</i>

						Balya, Pichila, Yogavahi, Lekhana, Prasadana, Chedhi, Grahi, Pitta sleshmahara, Medohara.
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Method of Preparation

Guggulu was purified by *Dolayantra svedana* in *Triphala kashayam*. Equal amount of *Amalaki*, *Hareethaki*, *Vibheethaki* and *Khadira* were cleaned in water, dried in shade and powdered. *Guggulu* was powdered after purification and added to this. *Bhaavana* was done thrice in *Asana Kashaya* and *choorna* was again allowed to dry.



Guggulu



Amalaki



Hareethaki



Vibeethaki



Khadira



Asana



Honey



Guggulu Potali



Dola yantra Svedana



Bhavana in Asana Kashaya



Sieving of Choorna



Uthamadi choorna

Methodology

The *Ksharasutra* procedure was explained to the patient and consent was taken. Patient was comfortably placed in lithotomical position and swab was collected from the external opening prior to the procedure. After probing under aseptic precautions *Apamarga kshara suthra* was applied. In the case of a positive swab test, *Uthamadi choorna* was given. Sitz bath was advised daily.

6gm of *Uthamadi choorna* along with honey as *Anupana* was given internally twice a day before food for a period of 21 days.

- Treatment period - 21 days

- Outcome variables- Pain, discharge and microbial load- were assessed on 0th day, 8th day, 15th day, 22nd day and 29th day.

- Follow-up was done after one week-on 29th day

Outcome Variable

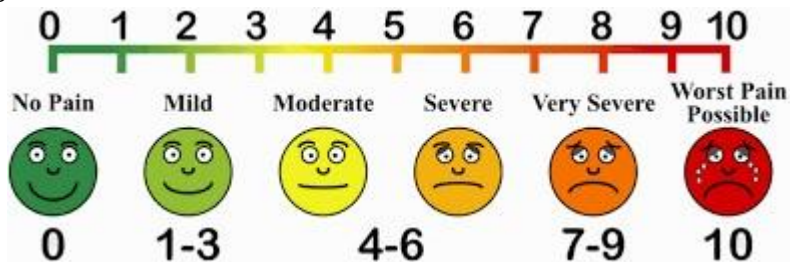
Effect of the treatment was assessed by subjective and objective parameters mainly based on the clinical observation by grading method.

1. Pain
2. Discharge
3. Microbial load by pus culture

Methods for assessing, recording and analyzing efficacy of parameters

Pain

Assessed by Visual analogue Scale



Parameters used for assessment of discharge

Grade 0- No discharge

Grade 1- Mild (if wound wets 1 sterile gauze pad) (size of one gauze pad:3*3 cm)

Grade 2- Moderate (if wound wets 2 sterile gauze pads)

Grade 3- Severe (if wound wets more than 2 gauze pads)

Grade 4 - Continuous and profuse discharge

Pus culture

Antimicrobial effect was accessed by pus culture and sensitivity test.

Microbial load was graded as absent, mild, moderate and severe growth.

Grade	Explanation
0	Absent
1	Mild
2	Moderate
3	Severe

OBSERVATIONS

Outcome Variables	Before treatment	During the treatment		After treatment	Follow up
	0 th day	8 th day	15 th day	22 nd day	29 th day
Pain	7	6	3	0	0
Discharge	3	2	1	0	0
Microbial Load	Heavy growth of E Coli	Moderate growth of E coli	Scanty growth of E Coli	No organism	No organism

RESULT

On the first day, pus culture and sensitivity test showed heavy growth of E.Coli. After the treatment period, E Coli was absent. Reduction in pain, pus discharge and microbial load were observed after the study and it is found that *Uthamadi Choorna* is having significant antimicrobial effect during *Ksharasuthra* therapy in *Bhagandara*.

DISCUSSION

Probable mode of action of *Uthamadi choorna*:

Action on Pain

- Ingredients of *Uthamadi choorna* accelerate the *Vrana sodhana* thereby reducing the *Vrana ruja*.
- *Asana* have *Vedanasthapana* property and it helps in reducing the pain.
- The chemical constituents like tannins, flavonoids and catechins in *Khadira* possess analgesic and immunomodulatory actions.

Action on Pus Discharge

- *Khadira* and *Asana* due to their *Kleda soshana* and *Kapha medo hara* properties, plays a major role in reducing pus discharge. All the drugs of *Uthamadi choorna* are having *Kashaya katu thiktha rasa* and it leads to *Kapha soshana*.
- Predominance of *Prthwi mahabhootha* in *Choorna kalpana* and *Rooksha guna* leads to *Srava haratwa* and thus pus discharge is reduced.
- *Guggulu* have the properties like *Lekhana* and *Medohara* which possesses *Teekshna* and *Vishada guna*. It acts as *Agnivardhaka* (promoter of digestion) and *srothosodaka* (purify *Srotas*) due to its *Teekshna guna* and being *Vishada*, it eliminates

the *Snigdha* and *Pichila medas* and *Kapha*.

Action on Microbial Load

- Most of the drugs in *Uthamadi choorna* have *Kashaya katu thiktha rasa*, *Laghu rooksha guna* and leads to *Karmas* like *Kleda medo vasa majja lasika pooya sveda upasoshanam*, *Sleshmarakthapitha sthambhana*, *Vrana shodhana ropanam*, *Medo haram*, *Kapha krmi prasamanam*, *Leghana* and *Soshanam*.
- *Khadira* is *Tvachya* and it is having *Kushtaghna* and *Vrana sodhana* properties. It creates an unfavourable environment for the growth of microbe.
- *Asana* is a drug with *Vedanasthapana*, *Sthambhana*, *Krmighna*, *Rakthadosha hara*, *Kushtaghna*, *Sothahara* and *Vrana ropana* properties. It is indicated in *Gudaja vikara*.
- *Bhavana* in *Asana kashaya* enhances the properties of *Uthamadi choorna* and it also improves the bio-efficacy of the drug.
- Previous pharmacological studies showed that each chemical constituents in the *Uthamadi choorna* have antimicrobial activity. Chemical constituents like catechin and epicatechin in *Khadira* and flavonoids in *Asana* had shown significant antimicrobial activities.
- High terpene contents in *Khadira* and tannins and saponins in *Asana* fastens the antimicrobial action of *Uthamadi choorna*.
- *Madhu* have *Lekhana* and *Chedana* properties and it also have antimicrobial action

CONCLUSION

- *Ksharasutra* therapy is widely practiced as a curative measure in *Bhagandara* since it is having *Bhedana* and *Chedana* properties, less recurrence rate and less cost for the treatment. Even during *Ksharasuthra* therapy, there may be increase in purulent pus discharge.
- The presence of microorganisms within the fistulous tract causes local tissue damage and delays wound healing along with severe pain and pus discharge.
- It can be concluded that internal administration of *Uthamadi choorna* during *Ksharasuthra* therapy is having significant antimicrobial effect in the management of *Bhagandara*.
- *Uthamadi choorna* can be given internally during *ksharasutra* therapy to reduce the pain, discharge and microbial load.

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