

**Unit Cutting time of different types of *Ksharsutra* in *Bhagandara* –
A review article.**

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ABSTRACT:-

Kshar is considered superior to all surgical and para surgical measures because it performs the action of *chhedan*, *bhedhan* and *lekhan*. *Ksharasutra* is considered a gold standard and a unique effective parasurgical remedy for the *Bhagandar* with a high success rate and the minimal chance of recurrence. *Ksharsutra* is a herbal medicated thread which exerts mechanical as well as chemical action to perform the work of curetting, draining and cleaning of the fistula tract. Despite being a successful therapy, *Apamarga Ksharsutra* has certain drawbacks like pain, burning sensation and itching at the point due to corrosive nature of *kshar*. To overcome these challenges, several other *ksharsutra* have been prepared by different researchers using various medicines having binding properties on thread and which are less irritant and carries *vranshodhaka* and *vranropaka* properties. In Shusrut samhita 18 different types of *kshar* are mentioned which are used to

treat different conditions, either orally (*paneey kshar*) or locally (*Pratisaraneey kshar*). Shushrut has described numerous medicines(*kshar*) in *ksharapakavidhi adhyaya* which can be used for the medication of *ksharsutra*. A deep review of published research papers on *Bhagandara* treated with different types of *ksharsutra* was taken and analysis was done to find out the UCT of each type of *ksharsutra*. **Aim and objective-** To study the Unit Cutting Time of different types of *ksharsutra* used in *Bhagandara*. **Observation-** Various research articles on different type of *kharsutra* in *Bhagandara* where observed for its UCT. **Keywords-** *Ksharsutra*, Unit Cutting Time, *Bhagandara*.

INTRODUCTION- Anorectal diseases are more common type of discomfort in which *Bhangandara* is one of the frequently occurring ailment. *Bhagandara* is categorised under *Ashtamahagada* which is difficult to treat. There are numerous treatment modalities available for management of

fistula in ano, but the question is of recurrence and bowel incontinence. There are prevailing successful therapies described by Acharya Sushruta to cure the *Bhagandara*, amongst them *ksharsutra* therapy is considered as a gold standard therapy. *Ksharsutra* is the most successful therapy according to the outcome of numerous research papers published and Ayurveda clinician's opinion. Acharya Sushrut, the Father of Indian Surgery has given indication of *ksharsutra* in *Nadi Vrana* and *Bhagandar*¹. In *Bhrihatrayi* the use of *ksharsutra* was mentioned but exact method of preparation of *ksharsutra* does not occur anywhere. In 11th century, Acharya Chakrapani Datta first gave a detail description of method of preparation of *ksharsutra* and its indications in *Arsh* and *Bhagandara*². The present form of *Ksharasutra* was initiated by Dr. P.S Shankaran and eventually established by Prof. P.J Deshpande through many researches and development at Banaras Hindu

University. Amongst all *ksharsutra*, *Apamarg ksharsutra* is considered as standard *ksharsutra*. But still there are some problems faced during the *Apamarg ksharsutra* therapy like local itching, irritation, prolonged duration. To overcome these disadvantages it was important to make the treatment extensively popular and respectable. Therefore numerous different *ksharsutra* were tried by several research scholars to find out its effectiveness in the treatment of *Bhagandara*.

Method and Methodology- The present work is a review study on a Unit Cutting Time of different types of *ksharsutra* used for the management of *Bhagandara*. Hence study material is collected regarding *ksharsutra* for *Bhagandara* from various papers published in National and International journals, websites, DHARA, PUBMED etc. and analysed them to observe UCT of each *ksharsutra*.

Following table shows various *ksharsutras* and their UCT.

Sr no	<i>Kshar/Ksheer sutra</i> name	Article	Author	UCT(days/cm)
1	<i>Palasha ksharsutra</i>	Comparative clinical study of <i>palashakshar sutra</i> and <i>Apamarga ksharsutra</i> in the management of fistula in ano.- A review article ³	Dr.Parmar Gaurav.	10.2228
2	<i>Yavakshara coated sutra</i>	Preparation of different types of <i>kshara sutra</i> ⁴	Manju Rani.	6.48
3	<i>Papaya ksharsutra</i>	Efficacy of <i>ksharsutra</i> made from <i>Papaya</i> and <i>Snuhi latex</i> in the treatment of fistula in ano ⁵	S.Dattatreya Rao.	4.017
4	<i>Snuhi ksharsutra</i>	Efficacy of <i>ksharsutra</i> made from <i>Papaya</i> and <i>Snuhi latex</i> in the treatment of fistula in ano ⁶	S,Dattatreya Rao.	4.72

5	<i>Kumara haridya ksharsutra</i>	Comparative clinical study to assess efficacy of <i>Kumari Haridra ksharsutra</i> and <i>Apamarga ksharsutra</i> in management of <i>Bhagandara</i> w.s.r. to fistula in ano ⁷	Dwivedi Amarprakash.	16.67
6	<i>Nimbaksharsutra</i>	A pilot study: role of <i>Nimba ksharsutra</i> in the management of <i>Bhagandara</i> (fistula in ano) ⁸	Alok Kumar And Ekta Dogra.	7.29
7	<i>Apamarg kshara sutra.</i>	Effect of <i>ksharsutra</i> applicatin in the management of <i>Bhagandara</i> (fistula in ano) ⁹	Raj Kishor Sah.	5.38
8	<i>Papaya ksheer based sphatika ksharsutra</i>	A clinical study to evaluate the efficacy of <i>Papaya ksheera</i> based <i>Sphatika ksharasutra</i> in <i>Bhagandara</i> w.s.r. to fistula in ano ¹⁰	Dr Amulya H.	10.77
9	<i>Tilanala ksharsutra</i>	A comparative clinical study of <i>Snuhi ksheer sutra</i> , <i>Tilanala kshara sutra</i> and <i>Apamarg kshar sutra</i> in <i>Bhagandara</i> (fistula in ano) ¹¹	Supreeth Joyal Lobo.	9.76
10	<i>Udumbara ksheersutra</i>	Management of pilonidal sinus with <i>Udumbara ksheersutra</i> – a case study ¹²	Dr Rashmi Bharti.	10.44
11	<i>Guggulu based ksharsutra</i>	Efficacy of <i>Guggulu</i> and <i>Shallaki</i> based <i>ksharsutra</i> with <i>Triphala guggulu</i> orally in the management of <i>Bhagandara</i> w.s.r to fistula in ano : a open labelled randomized comparative clinical study. ¹³	Aditya Nema, Sanjay Kumar Gupta.	8.94
12	<i>Shallaki based ksharsutra</i>	Efficacy of <i>Guggulu</i> and <i>Shallaki</i> based <i>ksharsutra</i> with <i>Triphala guggulu</i> orally in the management of <i>Bhagandara</i> w.s.r to fistula in ano : a open labelled randomized comparative clinical study. ¹³	Aditya Nema, Sanjay Kumar Gupta.	8.43
13	<i>Papazya tankan ksharsutraa</i>	Clinical evalution of efficacy of <i>Papaya –Tankan kshar sutra</i> in management of <i>Bhagandara</i> w.s.r fistula in ano. ¹⁴	Ashwin Kumar Jaiswal.	8.6

14	<i>Arkakshir based ksharsutra</i>	Study the effect of partial fistulectomy with <i>Arkashir</i> based <i>ksharsutra</i> ligation in treatment of <i>bhagandra</i> (fistula in ano-a pilot study) ¹⁵	Yogesh Badwe Pooja Moje.	7.68
15	<i>Guggulu based chitraka ksharsutra</i>	A comparative study on the efficacy of <i>Guggulu</i> based <i>Chitraka ksharasutra</i> and <i>Apamarga ksharstutra</i> in the management of <i>bhagandara</i> ¹⁶	Dr. Aparna Arali.	11.47
16	<i>Nyagrodha ksheer sutra</i>	Comparative study of <i>Nyagrodha ksheer sutra</i> and <i>Snuhi ksheer sutra</i> in the management of <i>Bhagandara</i> (fistul in ano) ¹⁷	Dr. Dhananjay.	17.67
17	<i>Snuhi haridra ksharasutra</i>	Comparative clinical study of <i>ksharsutra</i> in <i>Bhagandara</i> w.s.r to fistula in ano. ¹⁸	Dr.Amar P.Dwivedi.	8.85
18	<i>Vibhitaki ksharsutra</i>	A comparative clinical study on the effect of <i>Vibhitaki ksharsutra</i> and <i>Apamarga ksharsutra</i> in the management of <i>Bhagandara</i> (fistula in ano) ¹⁹	Dr.Aakash Kembhavi.	7.5
19	<i>Vasa ksharrsutra</i>	<i>Vasa ksharsutra</i> in the management of <i>Bhagandara</i> (fistula in ano) –a case report ²⁰	Prof.P.Hemantha Kumar.	2.67
20	<i>Ashwatha ksheer sutra</i>	Comparative study of <i>Aswatha ksheer sutra</i> and <i>Udumber ksheer sutra</i> in the management of <i>Bhagandara</i> (fistula in ano) ²¹	Dr. Monika S. Meshram.	17.67
21	<i>Guggulu based ksharasutra</i>	Comparative clinical study of <i>Guggulu</i> based <i>ksharasutra</i> in <i>Bhagandara</i> (fistula in ano) with or without partial fistulectomy ²²	Dr.Tukaram Sambhaji Dudhamal.s	8.85

Following table shows UCT of *Apamarg ksharsutr* as per different studies:

Sr no.	Article name	Author name	UCT(days/cm)
1	A comparative clinical study of <i>Snuhi ksheera sutra</i> , <i>Tilanala ksharsutra</i> and <i>Apamarga ksharsutra</i> in <i>Bhagandara</i>	Supreeth Joyal Lobo	8.82
2	A clinical comparative study on the efficacy of <i>Apamarg ksharsutra</i> and Seton therapy in	Balendra Singh	7.1

	the management of <i>Bhagandara</i> w.s.r to fistula in ano		
3	Comparative clinical study of <i>Palasha ksharsutra</i> and <i>Apamarga ksharsutra</i> in the management of fistula in ano	Parmar Gaurav	9.27
4	A comparative study of <i>Nimba ksharsutra</i> and <i>Apamarga ksharsutra</i> in the management of <i>Bhagandara</i>	Goswami A.K	7.84
5	Comparative clinical study to assess efficacy of <i>Kumari Haridra ksharsutra</i> and <i>Apamarg ksharsutra</i> in management of <i>Bhagandara</i> w.s.r to fistula in ano	Dwivedi Amarprakash Bhoir	15.75
6	Effect of <i>ksharsutra</i> application in the management of <i>Bhagandara</i> (fistula in ano)- A case report	Bijendra Shah	5.26
7	Clinical study of <i>Snuhi ksharsutra</i> and its role in the management of <i>Bhagandara</i> (fistula in ano)	Dr .Kumari Nidhi Shree Bibhuti	9
8	A comparative study on the efficacy of <i>Guggulu</i> based <i>Chitraka ksharasutra</i> and <i>Apamarga ksharstutra</i> in the management of <i>Bhagandara</i>	Dr.Shivalingappa J.Arakeri	10.95
9	Comparative clinical study of <i>ksharsutra</i> in <i>Bhagandara</i> w.s.r to fistula in ano.	Dr. Amar P. Dwivedi	8.19
10	A clinical study to evaluate the efficacy of <i>Kadali ,Aragvadh and Palash ksharsutra</i> in the management of <i>vataj ,pittaj and kaphaj Bhagandara</i>	Dr. Alok Kumar And Prof.Hemantha Kumar	12.6
11	A comparative clinical study on the effect of <i>Tankan ksharsutra</i> and <i>Apamarg ksharasutra</i> in the management of <i>Bhagandara</i> (fistula in ano)	Dr.B.S.Savadi	4.96
12	A comparative clinical study on the effect of <i>Vibhitaki ksharsutra</i> and <i>Apamarga ksharsutra</i> in the management of <i>Bhagandara</i> (fistula in ano)	Dr. Akash Kembhavi	4.96
13	A clinical study to evaluate the efficacy of <i>Papaya ksheer</i> based <i>Sphatika ksharasutra</i> in <i>Bhangandara</i> w.s.r to fistula in ano	Dr.Amulya H.	13.56

Discussion:-

Unit Cutting Time (UCT) is an important parameter to assess the efficacy of

Ksharsutra therapy in patients with Fistula in ano. There are lot many research papers published in various

journals to evaluate the efficacy of different types of *Ksharsutra* besides standard *Apamarga Ksharsutra*. After a deep review of all the research articles mentioned above, it was observed that every study shows different UCT with different *ksharsutra*. Even the UCT of standard *Apamarga Ksharsutra* in different studies shows different values of UCT. This variation may result due to the following factors.

Age: As per the study Unit Cutting Time varies between young and old patients because the young patient has good immunity and regeneration capacity so they heal faster.

Gender: As female patients have less capacity to bear pain so thread tightening is not done properly.

Type of Fistula: As per the type of fistula like sub-cutaneous, sub-mucous, ischiorectal etc. the involvement of tissues is different. So there may be variations in cutting and healing time.

Track of fistula: Cutting time is largely dependent on track length, the longer the track length higher the cutting time.

PH: Every *ksharsutra* has a different PH value which exerts different effects.

Properties of *kshara* used in *Ksharsutra*: *Ksharsutras* made of different types of *kshar* possesses different properties of chedan, bhedan, lekhan etc. that's why there is a variation in Unit Cutting Time.

***Ksharsutra* ligation procedure:** Loosely tied *ksharsutra* requires more time to cut and heal the tract, on the other hand tightly knotted *ksharsutra* cuts and heals earlier

History of previous surgery for fistula in ano: Some patients have higher UCT due to fibrosed fistulous track present from previous surgery.

Co-morbidity: Co-morbidities have a huge impact on wound healing and Unit Cutting Time, especially specific fistulas due to another diseases, Diabetes, immuno-compromised patients etc.

Supportive treatment: Antibiotics and anti-inflammatory drugs in addition to protein supplements have a faster healing rate and cutting time.

Hygroscopicity of *kshar* : *Ksharsutra* if not preserved appropriately, loses its efficacy due to its hygroscopic nature which ultimately affects Unit Cutting Time.

Alteration in duration of change of *ksharsutra*: *Ksharsutra* should be changed weekly till the healing of tract. Sometimes patients get delayed or lost follow up due to various reasons, This may also result in delayed UCT.

Postoperative care: Non obeying of proper post operative medications, precautions and instructions may result in delaying of UCT.

Tightening of *ksharsutra* knot: *Ksharsutra* sometimes not knotted tightly in every setting due to presence of pain, discharge, local infection etc. which may result in alteration of UCT. In this review, it is observed that, *Vasa ksharsutra* has less UCT. *Nyagrodha ksheer sutra* and *Ashwatha ksheer sutra* has more UCT.

CONCLUSION:-

In this study concluded that *Ksharsutra* therapy is a choice of treatment for the management of *Bhagandara*. Every *ksharsutra* has different UCT with different effect because of age, gender, type of fistula, PH, etc.

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