

## COMPARATIVE STUDY OF *ARKA KSHARA* AND *APAMARGA KSHARA PRATISARAN* IN THE TREATMENT OF *ARSHA* – A RANDOMIZED CONTROLLED TRIAL

Dr. Yogesh Badwe<sup>1\*</sup> and Dr. Kiran V. Maindale<sup>2</sup>

<sup>1</sup>Professor and HOD Department of Shalyatantra, Shri Ayurved College, Nagpur.

<sup>2</sup>PG Scholar, Department of Shalyatantra, Shri Ayurved College, Nagpur.

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### \*Corresponding Author

**Dr. Yogesh Badwe**

Professor and HOD  
Department of Shalyatantra,  
Shri Ayurved College,  
Nagpur.

### ABSTRACT

Among the all available treatment modalities for *Arsha* (Haemorrhoides), the *Kshara pratisaran* is found to be more effective by considering its feasibility, adoptability, cost-effectiveness and curative results. *Sushruta* has mentioned many plants for *Kshar Pratisarana*. Under this parasurgical procedure, various *Pratisarniya kshara(local application)* are used in treating the *Arsha*.

**Methodology:** In this present study, *Apamarga* (*Achyranthus aspera* Linn.) *Kshara*, which is one of the proven *Kshar* for treatment of *Arsha* was compared with easily available drug *Arka (calotropus procera)*, by its local application directly on 1<sup>st</sup> and 2<sup>nd</sup> degrees of

haemorrhoids, to find out its effectiveness. A total 30 patients were randomly selected and divided in two groups. *Kshar pratisaran* done for once and observations are noted on 1<sup>st</sup> 7<sup>th</sup> and 14<sup>th</sup> day and the result was assessed thoroughly on the basis of observation according to the specially designed proforma. **Result:** *Arka kshar pratisaran* was found to be more effective in all the three criterias low cost therapy and easily available throughout the year. **Conclusion:** it was concluded that *Arka kshar pratisaran* had shown significant improvement in 1<sup>st</sup> and 2<sup>nd</sup> degree of haemorrhoids without any side effect.

**KEYWORDS:** *Arka*, *Apamarga*, *Arsha*, hemorrhoids, *kshara*, *kshara pratisaran*, *Ksharasutra* Ligation (KSL), parasurgical, *pratisaraniya*.

### INTRODUCTION

The wide description of *Arsha* and its treatment is available in the ancient *Ayurvedic* literature, because of its severity and graveness the *Arsha*(haemorrhoids) is described under

the heading of *Mahagada*(major diseases).<sup>[1]</sup> As it occur in anal region, which is mentioned as *Sadhyo Pranhara marma* (i.e. the point leads to death if injured) so it requires delicate management.<sup>[2]</sup> Modernization and luxury lifestyle has changed with dietary habit of society as well as it is added by stressful jobs. These changes cause disturbances in healthy environment, which cause life style disorders which includes diabetes, hypertension, myocardial infarction, infertility, PCOD in female etc. Lifestyle related factors are mainly thought to be caused of increasing prevalence of haemorrhoids (*Arsha*).<sup>[3]</sup> *Arsha (haemorrhoid)* was described in details by *Bruhatrayi*. According to *Acharya Vagbhata*, well known definition of *Arsha(haemorrhoids)* is, it is an entity in which muscular projections trouble the patients like enemy.<sup>[4]</sup> Haemorrhoids are the dilated veins within the anal canal in sub epithelial region formed by radicals of the superior, middle and inferior rectal veins.<sup>[5]</sup> Modern system of treatment has adopted a variety of method like sclerotherapy; rubber band ligation, cryosurgery, haemorrhoidectomy Infrared coagulation (IRC), Doppler guided haemorrhoidal Artery ligation (DGHAL) etc. according to nature and degree of pile mass, but these procedures have their own merits and demerits with limitation.<sup>[6]</sup> *Acharya Charaka* has given more emphasis on conservative management and prescribed suitable dietary regiment with drug to the patient for the treatment of *Arsha(haemorrhoids)* by improving *deepan, pachan karmas* of *Agni* (enhancement of digestive capacity) in the body. Further he advised *kshara* treatment in *Arsha*.<sup>[7]</sup>

*Sushruta*, the father of surgery had described the four types of treatment of *Arsha*; *Bheshaja* (medical management), *Shastra* (surgery), *Kshar* (alkaline *Ayurvedic* preparation) and *Agni* (cauterization),<sup>[8]</sup> He has described the *kshar karma* in *Arsha* having symptoms like *Mrudu* (soft), *Prasruta* (spreaded), *Avagadh* (deep rooted), *Uchrita* (bulging out) which can be correlated with second degree haemorrhoids.<sup>[9]</sup> Through *Arsha* is *Tridoshaja vyadhi* these are again divided into five types according to their *Dosha* dominance.

**Need of study:** In recent year lots of research work has been done on *Arsha* with varied approaches, depending upon different stages and variety of the disease and conditions. *Kshar Karma* is a widely used treatment modality by surgeons of *Ayurveda* fraternity and lots of *vaidyas* are practicing *Kshara Pratisaran* in *Arsha*. *Acharya Sushruta* has described many of herbs for the *Pratisarniya kshar*<sup>[10]</sup> preparation in *sushruta samhita*. Amongst them *Apamarga Kshar* is widely used and proved drug for *Kshar Pratisaran*. *Arka* is *Tikshana*

*dravya*, easily available in surrounding and it is a drug mentioned for *Kshar Pratisarana* so it has been selected for comparative study with the *Apamarga Kshar Pratisaran in Arsha*.

## MATERIALS AND METHODS

### Inclusion criteria

- Arsha* which are of *Mrudu* (soft), *Prasruta* (Extensive), *Avagadha* (deeply situated), *Uchrita*(projected).
- Diagnosed patients of 1st and 2nd degree haemorrhoids from *Shalyatantra* OPD and IPD within age groups 18 to 60 years.
- Selection will be irrespective of gender, religion, education and socio-economic status, were included in this study.

### Exclusion criteria

- Patients suffering from Carcinoma of rectum.
- Patients with uncontrolled DM.
- Patients with 3rd and 4th degree hemorrhoids and interno-external hemorrhoids.
- Known cases of portal hypertension will be excluded.

For this study 30 patients were selected and randomly divided by simple randomization in Group A- *Arka kshar Partisarana* and Group B – *Apamarga Kshar Pratisatana* after thorough clinical and proctoscopic examination. So 15 patients were allocated in each group.

### Assessment criteria

**Table no. 1: assessment criteria.**

1	Pain	VAS SCALE	
2	PR Bleeding	No bleeding	0
		Bleeding during defecation up to 10 drops.	1
		Bleeding during defecation 10 to 20 drops	2
		Splash in a pan	3
3	Size of pile mass	75% and above reduction in size of pile mass	0
		50% to 74% reduction in size of pile mass	1
		25% to 49% reduction in size of pile mass	2
		Below 24% reduction in size of the pile mass	3

**Overall assessment criteria:** Criteria of assessment was based on improvement in subjective and objective parameters after the treatment. The results were categorized as,

Complete relief -- 75% and above.

Moderate relief -- 50% to 74% improvement

Mild relief -- 25 to 49% improvement

No relief -- Below 24% improvement.

**Method of preparation of *kshar*:** *Kshar* was prepared and standardized at *Rasashastra dept* of our institute.

- *Panchangas* of *Arka*(10 kg) has collected and dried. Then the dried plants were burnt to ashes, allowed to cool by itself.
- The whole collected ash approximately (1 kg) mixed with 6 parts (in volume) of water and stirred well and allowed to settle overnight.
- Then it was filtered through double folded cloth for 21 times and the residue had thrown out.
- *Gomutra Varna*(golden colour) filtrate obtained. Which was heated on slow fire.
- When the contents were reduced to half, about 1/3 of *ksharajala* was be taken for dissolving *Shukti* (oyster shell) and it was added to boiling *ksharajala* (*Avapa* stage) and continued to boil till the content attained consistency as described by *Sushruta* (not too liquid or too solid).
- 10 gm of *Chitrakamula Kalka* was finally added to this *Kshara* to make it *tikshna*.
- Then it was removed from fire and transferred into separate container with lid and stored for use.
- *Apamarga kshar* was also prepared by same method.
- pH value of *Arka Kshar* was 11.2 and *Apamarga Kshara* was 9.2.

***Kshar pratisaran vidhi (method of Kshara application):*** *Kshara pratisaran* was done locally on the piles mass as per the classical technique called "*kshara pratisaran vidhi*."<sup>[11]</sup> It was conducted according to the principles of *trividha karma*.<sup>[12]</sup>

**Pre-operative procedure** 1. Routine investigations mentioned above were done. 2. Written and informed consent of the patient will be taken. 3. Physician's fitness was be taken for anaesthesia. 4. Evacuation of bowel by soap water enema in morning prior to procedure. 5. Shaving and preparation of parts was done.

**Operative procedure:** 1. Under all aseptic precautions, under saddle block, the patient was laid down in lithotomy position. 2. After painting and draping of perianal area a slit proctoscope lubricated with LOX jelly was introduced in the anal canal. 3. The Pile mass was identified and fixed at the suitable place into the aperture. 4. Piles was cleaned with dry gauze

and remaining mucosa was covered with gauze to avoid *Kshar* application on normal tissue. 6. Thick layer of *Tikshna kshar* was applied over it. 7. Applied *Kshara* was kept for 2 minutes approximately or *Shata matra* (i.e. Till the time taken to count up to the 100).<sup>[13]</sup> 8. The *Kshara* was then washed with the help of fresh lime juice. 9. After application of the *kshara*, the pile mass had been changed into Bluish black (*Pakwa Jambu Phalavat*) in appearance. 10. Same procedure was repeated for each pile mass separately in the same sitting.<sup>[14]</sup>

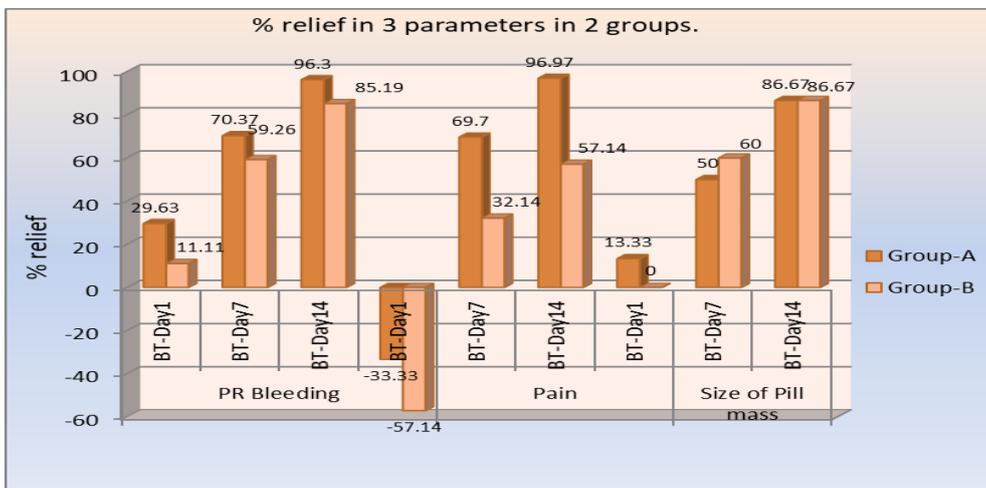
**Postoperative procedure:** 1. NBM for 6 hrs. 2. Light diet allowed by the evening. 3. *Trifala Choorna* at night was administered with luke warm water. 4. Seitz bath with warm water was advised from next day. 5. Diclofenac sodium was given as per requirement. 6. *Kshar* application on the pile mass once and patient was observed for next 1st, 7th, 14th days.

**Observations and Result:** according to the observations recorded in both the groups PR bleeding was main feature and was observed in every patient, which was significantly reduced and percentage of relief is 96.3% and in group B the percentage of relief is 85.19 so for this parameter group A that is *Arka kshar pratisaran* was found significant. The Pain was also observed in all patient it was increased after *pratisaran* and then significantly reduced and percentage of relief is 96.97% in group A (i.e. *Arka kshar pratisaran*) and in Group B percentage of relief is 57.4%, so for this parameter Group A that is *Arka Kshar pratisaran* was found significant. Reduction in pile mass had found significant percentage of relief i.e. 86.7% in group A and in group B it was found 60% so for this parameter also *Arka kshar pratisaran* is found more significant in reducing size of pile mass. which were recorded elaborately in table no.2.

In this study by using chi square value 6.9714 and P value is 0.040 which significant. According to observations in this study overall effect of therapy for group A is 51.13% and Group B is 32.63%. All the above observations are resulted as *Arka Kshar pratisaran* is found significantly effective.

Table No. 2: Comparison of change in PR bleeding between 2 groups.

Parameter	Multiple comparison	Group-A				Group-B				Z-value	p-value
		Mean Difference	SD	Median	% relief	Mean	SD	Median	% relief		
PR Bleeding	BT-Day1	0.80	0.63	1	29.63	0.30	0.48	0	11.11	1.834	0.0667,NS
	BT-Day7	1.90	0.32	2	70.37	1.60	0.69	1.5	59.26	1.400	0.1614,NS
	BT-Day14	2.60	0.51	3	96.30	2.3	0.48	2	85.19	1.314	0.1888,NS
Pain	BT-Day1	1.3	1.41	-1	-33.33	-1.6	0.69	-1.5	-57.14	0.897	0.3699,NS
	BT-Day7	1.70	0.94	2	69.70	0.90	1.44	0.50	32.14	1.635	0.1021,NS
	BT-Day14	3.2	0.91	3	96.97	1.6	1.57	1.5	57.14	2.555	0.0106,S
Size of Pile mass	BT-Day1	0.40	0.51	0	13.33	0	0	0	0	2.179	0.0293,S
	BT-Day7	1.50	0.52	1.5	50.00	0.80	0.42	1	26.67	2.690	0.0071,HS
	BT-Day14	2.2	0.63	2	86.67	2.70	0.48	3	60.00	1.834	0.0667,HS



Graph no.1: percentage of relief in 3 parameters.



1.Before kshar pratisaran      2.During kshar pratisaran      3. After kshar pratisaran

Image 1: Arka kshar pratisaran.

## DISCUSSION

*Acharya sushruta* had mentioned many herbs for preparation of *Kshar*. In this study *Arka* (*Calotropis procera*) was compared with *Apamarga Kshar* as it is abundantly and easily available especially in Nagpur region. In the present study total 30 patient of 1<sup>st</sup> and 2<sup>nd</sup> degree haemorrhoids were involved in which 21 were male and 9 were female. Among the total subjects 60% were between the age group 50 to 75 yrs and 40% were among 25 to 50 years of age group. In both groups per Rectal bleeding was stopped and comparing the both *Arka kshar* was found superior. *Sushruta* has mentioned 4 types of treatment to stop bleeding in which *Dahana* and *Pachana* are important. As *Kshara* possess both properties *Pachana* and *Dahana* it acts on bleeding.<sup>[15]</sup> As per previous study *kshara* causes coagulation and cauterisation, so per rectal bleeding was stopped. Pain was initially increased after application of *Kshara* may be due to impending necrosis and local inflammation caused by chemical cauterisation done by *kshara*.<sup>[16]</sup> Latter on pain was significantly reduced necrosis of pile mass which causes denerving of mucosa. According to *Sushruta kshara Tridoshaghna* (*pacification of 3 doshas*) property and *ushna guna* which leads to pacification of *Vata* resulting into reduction of *pain*.<sup>[15]</sup> Main motive of this study was to observe reduction in pile mass and comparing with *Apamarga kshara*, *Arka Kshara* was found more effective (P value-0.04). *Sushruta* has mentioned action of *kshara* like *Chedana*(excision), *Bhedana*(incision), *Lekhana*(scrapping) these properties were helpful in reducing size of pile mass.<sup>[15]</sup> *Kshara* is alkaline in nature and its action of cauterization of haemorrhoidal plexuses which result in fibrosis and necrosis of mucosa which contracts anal cushions and slough out of haemorrhoids<sup>16</sup>. Overall result of *Arka kshara pratisarana* was found more effective than *Apamarga Kshara* though the properties of both drug were same but the superiority might be due to individual drug potency (*Dravyabheda/ Prabhava*). Also *Arka kshara* was found more alkaline (pH value 11.2) so it causes coagulation of haemorrhoidal plexus (cauterization of pile mass), necrosis of tissue followed by fibrosis of plexus, adhesion of mucosal, sub mucosal coat which helps in prevention of further dilatation of veins and also prevents prolapse of regional mucosa of anus. This makes permanent radical obliteration of haemorrhoids.<sup>[16]</sup>

## CONCLUSION

As this study was more emphasised on reduction of size of pile mass we found better results of *Arka kshar* than *Apamarga kshar* so it can be conclude that *Arka kshar Pratisarana* is more useful in the management of *Arsha* (haemorrhoids).

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