



A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF ARKA KADALI PRATISARANIYA KSHARA KARMA AND APAMARGA PRATISARANIYA KSHARA KARMA IN THE MANAGEMENT OF ABHYANTARA ARSHAS VIS-À-VIS INTERNAL HAEMORRHOIDS

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ABSTRACT

Background: *Arshas* is a protrusion of *Mamsa* which obstructs the *Gudamarga* and afflict the person like an enemy. *Acharya* considered it under *Ashtamahagada* because its *Deergakalanubandi* and *Dushchikitsya* nature, as it is occurring in *Guda* which is one among the *Sadyopranahara Marma*. Due to *Aharaja*, *Viharaja* and *Manasika Nidanas*, *Agni* become *Manda* thus aggravates the *Doshas*. The aggravated *Doshas* enters *Guda*, vitiates *Gudavalis* to form *Mamsapraro*ha called as *Arshas*. In contemporary science it can be correlated to Haemorrhoids. Haemorrhoids are the dilated veins within the anal canal in sub-epithelial region formed by radicles of superior, middle and inferior rectal veins. *Acharya* has mentioned four treatment modalities for *Arshas*, one among them is *Kshara Karma*. The *Kshara* is considered as *Shreshta*, as it does the functions of *Chedana*, *Bhedana* and *Lekhana karma*, which is used in *Mridu*, *Prasrita*, *Avagada* and *Uchrita Arshas*. *Arka* has *Vranaropana*, *Vranashodana*, *Kandughna*, *Kaphashamana*, *Arshogna* properties. *Kadali Kanda* has *Kaphapittahara*, *Rakatashamaka* properties. The present study was designed to assess the combined efficacy of *Arka Kadali Pratisaraniya Kshara Karma* in *Abhyantara Arshas vis-à-vis* Internal haemorrhoids. **Methods:** 40 patients fulfilling the inclusion criteria of *Abhyantara Arshas vis-à-vis* Internal haemorrhoids was randomly selected from OPD and IPD of *Shalyatantra*, teaching hospital attached to G.A.M. C, Bengaluru and is divided into 2 groups i.e., Group A and Group B comprising of 20 patients in each group. In Group A: *Arka Kadali Pratisaraniya Kshara Karma*, In Group B: *Apamarga Pratisaraniya kshara Karma* was done. The parameters were observed based on assessment criteria and recorded. **Result:** The p-value of 0.82 is greater than significance level of 0.05, indicating that there is no statistically significant difference between Group A and Group B in terms of their overall response. **Conclusion:** *Arka Kadali Pratisaraniya Kshara Karma* is as effective as *Apamarga Pratisaraniya Kshara Karma* in the management of *Abhyantara Arshas vis-à-vis* Internal Haemorrhoids.

KEYWORDS: *Abyantara Arshas*, Internal Haemorrhoids, *Arka Kadali Pratisaraniya KsharaKarma*.

INTRODUCTION

Arshas is one among *Ashtamahagada* ^[1] as it is *Deergakalanubandi*, *Dushchikitsya* in nature and involves *Guda Pradesha* which is *Sadyopranahara Marma* ^[2]. Aetiology being indulging in *Mithya Ahara* and *Vihara* leading to *Mandagni* causes aggravation of *Doshas*. Later these *Doshas* enters *Guda* and vitiates

Gudavalis to form *Mamsapraro*ha called as *Arshas* ^[3]. In the management of *Arshas*, *Acharya Sushruta* has explained *Bheshaja*, *Kshara*, *Agni* and *Shashtra Chikitsa*, ^[4] *Ksharakarma* is one these treatment modalities. It is indicated in the *Arshas* which are *Mridu*, *Prasrita*, *Avagada* and *Uchrita* in nature ^[5]. *Kshara*

karma is superior because of *Chedana*, *Bhedana*, *Lekhana* and *Tridoshagna* properties^[6]

Haemorrhoids are dilated veins within the anal canal in sub-epithelial region formed by radical of superior, middle and inferior rectal veins^[7]. Normally anal cushions help in maintenance of the anal continence and sliding of anal cushion abnormally is called as Haemorrhoids^[8]. Globally incidence ranges from 50-80%, in India around 75% of population^[9]. Haemorrhoids are classified into internal and external haemorrhoids; Internal haemorrhoids are having natural consequences of adaptation of erect posture of mankind^[10]. Clinical features are bleeding, mass per anus, prolapse, discharge, pruritus and pain.

Treatment measures are local applications, sitz bath, laxatives, analgesics along with more liquid intake and fibre diet. Para surgical measures include Sclerotherapy, Banding, Cryotherapy, IRC, Laser therapy, Doppler Guided Haemorrhoidal Artery Ligation. Surgical measures are Haemorrhoidectomy, Staple Haemorrhoidectomy. These interventions may lead to complications such as secondary haemorrhage, pelvic abscess, ulceration^[11].

Hence there is always a need for cost effective, simple and complications free intervention for *Arshas*, so *Pratisaraeeya Ksharakarma* has very low rate of recurrence and it causes less pain, bleeding and less chances of infection with no anal incontinence. There are 24 drugs mentioned by *Acharya Sushruta* in *Ksharapaka vidhi Adhyaya* 11th chapter. Among them combination of *Arka*, *Kadali* are taken here. *Arka* has *Vranaropana*, *Vranashodana*, *Kandughna*, *Kaphashamana*, *Arshogna* properties^[12]. *Kadali* *Kanda* has *Kaphapittahara*, *Rakatashamaka* properties^[13]. Hence combination of these two *Kshara Dravyas* i.e *Kadali* and *Arka* are selected in the present study for the management of *Abhyantara Arshas* by *Pratisaraneeya ksharakarma*.

AIMS AND OBJECTIVES

- To evaluate the effect of *Arka Kadali Pratisaraniya Kshara karma* in the management of *Abhyantara Arshas vis-à-vis Internal Haemorrhoids*
- To evaluate the effect of *Apamarga Pratisaraniya Kshara karma* in the management of *Abhyantara Arshas vis-à-vis Internal Haemorrhoids*
- To compare the effect of *Arka Kadali* and *Apamarga Pratisaraniya Kshara karma* in the management of *Abhyantara Arshas vis-à-vis Internal Haemorrhoids*.

HYPOTHESIS

H₀-There is no significant difference between the effect of *Arka Kadali and Apamarga Pratisaraniya Kshara Karma* in management of *Abhyantara Arsha vis-a-vis Internal haemorrhoids*.

H₁-There is significant effect of *Arka Kadali Pratisaraniya Kshara Karma* in management of *Abhyantara Arsha vis-a-vis Internal haemorrhoids*.

H₂-There is significant effect of *Apamarga Pratisaraniya Kshara Karma* in management of *Abhyantara Arsha vis-a-vis Internal haemorrhoids*.

MATERIALS AND METHODS

Source Of Data

- A. **Literary source:** *Ayurveda* Classical Texts, Modern textbooks, Journals & authenticated Websites.
- B. **Sample source**-40 Patients fulfilling the inclusion criteria, was selected for the study from OPD and IPD of Dept. of *Shalyatantra*, teaching hospital attached to G.A.M.C., Bengaluru was selected for the study. The study was conducted from Jan 2024-Sep 2025.
- C. **Drug source** -The identified raw drugs required for the clinical study were purchased from approved vendors. Procured drugs are checked for the genuinely in the department of *Dravya guna* and the formulation was prepared in the Department of *Rasa Shastra* and *Bhaishajya Kalpana* of GAMC, Bengaluru.

Methods of collection of data

D. Study Design

A Randomized open label clinical study was conducted.

E. Sampling technique

The subjects who fulfil the inclusion criteria and complying with the informed consent (IC) were selected using method of Computerized Randomization Table.

F. Sample Size

Subjects diagnosed with *Abhyantara Arshas* of both the gender were randomly assigned into two Groups, Group A and Group B comprising of 20 Subjects each. A special case proforma containing all the necessary details pertaining to the study was prepared.

A) INCLUSION CRITERIA

- ☐ Patient above 18 and below 60 years of age.
- ☐ Haemorrhoids which are *Mridu*, *Prasrita*, *Uchrita*, *Avaghada*.
- ☐ Patients with clinical features of 1st and 2nd degree haemorrhoids, mass per anum, Bleeding per anum, Pruritus ani and mucoid discharge per anum

B) EXCLUSION CRITERIA

- ☐ Associated with other diseases like Condyloma acuminata and Condyloma lata, Ulcerative colitis.
- ☐ Pregnancy and Lactating women
- ☐ Faecal incontinence
- ☐ Known case of Hepatitis B & HIV I and II
- ☐ Uncontrolled Diabetes mellitus type 1 and 2 and HTN
- ☐ Contraindicated for *Kshara Karma*

❖ **INTERVENTION**

A total of 40 Subjects of internal haemorrhoids, those fulfilling the above criteria were included for the study

and randomly allotted into 2 groups namely Group-A & Group-B with 20 patients each.

GROUP A	GROUP B
Arka Kadali Pratisaraniya Kshara Karma in Abhyantara Arsha.	Apamarga Pratisaraniya Kshara Karma in Abhyantara Arsha.

PROCEDURE OF KSHARAKARMA**PRE-OPERATIVE PROCEDURE**

Informed written consent was taken, part preparation done, Vitals recorded, Inj. T.T 0.5 ml IM was given, Inj. xylocaine test dose 0.1cc was given subcutaneously, Sodium phosphate 100 ml enema was given. Clearance of bowel confirmed then patient was shifted to operation theatre.

OPERATIVE PROCEDURE

Patient was made to lie down in lithotomy position. The surgical area was painted with a povidone iodine solution followed by surgical spirit and then draped with hole towel. Local anaesthesia was infiltrated with inj. Lignocaine 2% after calculating maximum dose according to weight. Surgical procedure was started after confirming effect of anaesthesia. Manual anal dilatation was done. Lubricated proctoscope was introduced. Haemorrhoidal mass and their position are noted. Slit proctoscope was introduced respective to position of haemorrhoidal mass, skin around haemorrhoidal mass was retracted with Allis's tissue holding forceps to get a better view of haemorrhoids. The anal mucosa around the haemorrhoidal mass was covered with wet gauze piece to prevent spilling of kshara on it. Haemorrhoidal mass was gently scraped with the serrations over BP handle. Then Nakhaotshedha pramana of Arka Kadali kshara /Apamarga kshara was applied over haemorrhoidal mass and opening of proctoscope was closed for Shata Matra Kala with the palm. Haemorrhoidal mass was observed for the change in colour from reddish-pink to bluish- black (Pakwa Jambu Phala Varna). If the Pakwa jambu Phala Varna is not observed, same procedure is repeated again. Kshara was washed with vinegar followed by normal saline. Same procedure was followed if other haemorrhoidal mass present. Slit proctoscope and wet gauze piece were removed from anal canal after the procedure. An anal pack prepared by smearing with povidone-iodine, 2% lignocaine gel, and Yashtimadhu Ghritha. Sterile dressing was done. Vitals recorded post operatively and patient was shifted to ward.

POST OPERATIVE PROCEDURE

Anal pack was removed after 6 hours. Analgesic drug was administered according to the need. From Post operative day 1 patient was advised Panchavalka Kwatha sitz bath for 15 minutes twice daily. 20 ml of Yashtimadhu Ghritha was administered from anal route for 7 days, Triphala Churna in dose of 1 tsp was given at bedtime with lukewarm water as laxative. Triphala

Guggulu 1-1-1 A/F, Gandhaka Rasayana 1-1-1 A/F, Patients were advised to take fibre rich diet.

ASSESSMENT CRITERIA

observation regarding changes were observed on 0, 1st, 7th, 14th and 21st day and the same is recorded.

BLEEDING PER ANUM (RAKTA SRAVA)

GRADE	BLEEDING PER ANUM
0	No bleeding
1	Bleeding only during defecation
2	Bleeding during and after defecation
3	Bleeding irrespective of defecation

PRURITUS ANI (GUDA KANDU)

GRADE	PRURITUS ANI
0	Pruritus ani absent
1	Pruritus ani present

MUCOID DISCHARGE PER ANUM (GUDA SRAVA).

GRADE	DISCHARGE PER ANUM
0	Discharge absent
1	Discharge present

PILE MASS (ARSHANKURA)

GRADE	PILE MASS
0	Pile mass absent
1	Pile mass present

OVERALL RESPONSE

CLASS	GRADING
<24%	Poor Response
25-49%	Moderate Response
50-74%	Good Response
75-100%	Excellent Response

Investigation: CBC, ESR, CT, BT, RBS, HIV, HBsAg are done.

ETHICAL CLEARANCE: Ethical clearance obtained from the Institutional ethics committee of Government ayurveda medical college, Bengaluru.

OBSERVATION AND RESULT**1) BLEEDING PER ANUM****Table no - 1: Effect of treatment on Bleeding per Anum within Group A.**

Ranks ^a	
	Mean Rank
BT	4.10
D1	3.35
D7	2.60
D14	2.48
D21	2.48
a. Groups = Group A	
Test Statistics ^{a,b}	
N	20
Chi-Square	39.636
Df	4
P value	0.000
a. Groups = Group A	
b. Friedman Test	

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.

Table no 2: Effect of treatment on Bleeding per Anum within Group B.

Ranks ^a	
	Mean Rank
BT	4.05
D1	3.55
D7	2.55
D14	2.43
D21	2.43
a. Groups = Group B	
Test Statistics ^{a,b}	
N	20
Chi-Square	41.486
Df	4
P value	.000
a. Groups = Group B	
b. Friedman Test	

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.

Table no 3: Effect of treatment on Bleeding per Anum between Group A & B.

Test Statistics ^a					
	BT	D1	D7	D14	D21
Mann-Whitney U	200.000	180.000	200.000	200.000	200.000
Wilcoxon W	410.000	390.000	410.000	410.000	410.000
Z	0.000	-.637	0.000	0.000	0.000
P value (2-tailed)	1.000	.524	1.000	1.000	1.000
a. Grouping Variable: Groups					
b. Not corrected for ties.					

Since p values > 0.05, the level of significance; there is no evidence to reject null hypothesis.

2) PRURITUS ANI**Table no 4: Effect of treatment on pruritic ani within Group A.**

Ranks ^a	
	Mean Rank
BT	3.45
D1	3.45
D7	2.95
D14	2.58
D21	2.58
a. Groups = Group A	
Test Statistics ^{a,b}	
N	20
Chi-Square	23.429
Df	4
P value	.000
a. Groups = Group A	
b. Friedman Test	

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.

Table no 5: Effect of treatment on pruritus ani within Group B.

Ranks ^a	
	Mean Rank
BT	3.38
D1	3.38
D7	3.00
D14	2.63
D21	2.63
a. Groups = Group B	
Test Statistics ^{a,b}	
N	20
Chi-Square	18.000
Df	4
P value	.001
a. Groups = Group B	
b. Friedman Test	

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.

Table no 6: Effect of treatment on pruritus ani between Group A & Group B.

Test Statistics ^a					
	BT	D1	D7	D14	D21
Mann-Whitney U	190.000	190.000	200.000	200.000	200.000
Wilcoxon W	400.000	400.000	410.000	410.000	410.000
Z	-.333	-.333	0.000	0.000	0.000
P value (2-tailed)	.739	.739	1.000	1.000	1.000
a. Grouping Variable: Groups					
b. Not corrected for ties.					

Since p values > 0.05, the level of significance; there is no evidence to reject the null hypothesis.

3) MUCOID DISCHARGE PER ANUM**Table no 7: Effect of treatment on Mucoid discharge per Anum within Group A.**

Ranks ^a	
	Mean Rank
BT	3.25
D1	3.25
D7	3.00
D14	2.75
D21	2.75
a. Groups = Group A	
Test Statistics ^{a,b}	
N	20
Chi-Square	13.333
Df	4
P value	.010
a. Groups = Group A	
b. Friedman Test	

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.

Table no 8: Effect of treatment on Mucoid discharge per Anum within Group B.

Ranks ^a	
	Mean Rank
BT	3.63
D1	3.38
D7	2.75
D14	2.63
D21	2.63
a. Groups = Group B	
Test Statistics ^{a,b}	
N	20
Chi-Square	25.455
Df	4
P value	.000
a. Groups = Group B	
b. Friedman Test	

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.

Table no 9: Treatment on Mucoid discharge per Anum between Group A & B.

Test Statistics ^a					
	BT	D1	D7	D14	D21
Mann-Whitney U	160.000	180.000	190.000	200.000	200.000
Wilcoxon W	370.000	390.000	400.000	410.000	410.000
Z	-1.363	-.721	-.593	0.000	0.000
P value (2-tailed)	.173	.471	.553	1.000	1.000
a. Grouping Variable: Groups					
b. Not corrected for ties.					

Since p values > 0.05, the level of significance; there is no sufficient evidence to reject the null hypothesis.

4) PILE MASS**Table no 10: Effect of treatment on pile mass within Group A.**

Ranks ^a	
	Mean Rank
BT	3.25
D1	3.25
D7	3.25
D14	3.25
D21	2.00
a. Groups = Group A	
Test Statistics ^{a,b}	
N	20
Chi-Square	40.000
Df	4

P value	.000
a. Groups = Group A	
b. Friedman Test	

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.

Table no 11: Effect of treatment on Mass per Anum within Group B.

Ranks ^a	
	Mean Rank
BT	3.28
D1	3.28
D7	3.28
D14	3.15
D21	2.03
a. Groups = Group B	
Test Statistics ^{a,b}	
N	20
Chi-Square	36.571
Df	4
P value	.000
a. Groups = Group B	
b. Friedman Test	

Since p value < 0.05, the level of significance, there is strong evidence to reject the null hypothesis.

Table no 12: Effect of treatment on Mass per Anum between Group A & B.

Test Statistics ^a					
	BT	D1	D7	D14	D21
Mann-Whitney U	200.000	200.000	200.000	190.000	200.000
Wilcoxon W	410.000	410.000	410.000	400.000	410.000
Z	0.000	0.000	0.000	-1.000	0.000
P value (2-tailed)	1.000	1.000	1.000	.317	1.000
a. Grouping Variable: Groups					
b. Not corrected for ties.					

Since p values > 0.05, the level of significance; there is no sufficient evidence to reject the null hypothesis.

SCOPE FOR FURTHER REASERCH

- Presented study was conducted with a limited sample size, future studies with larger sample size are recommended to obtain more precise and comprehensive results.

- Other combination of drugs can be tried and analysed.



Fig No. 1: Instruments Needed For Pratisaraniya Kshara Karma.

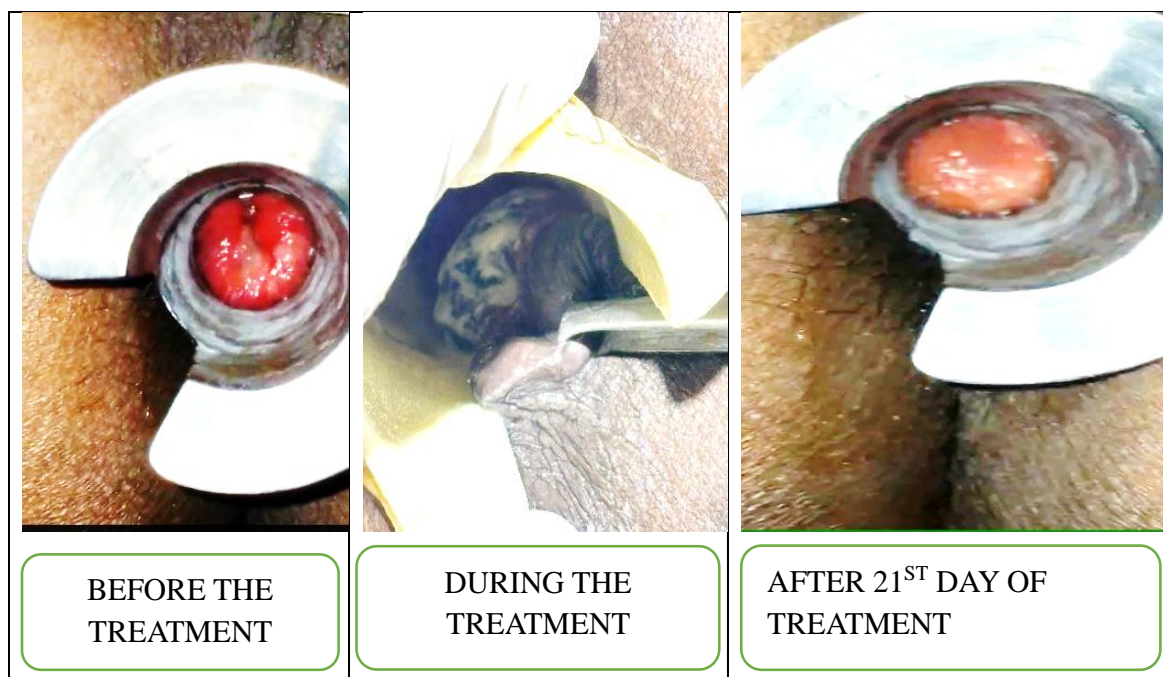


Fig. no 2: In Group A-Effect of Arka Kadali Pratisaraniya Ksharakarma.

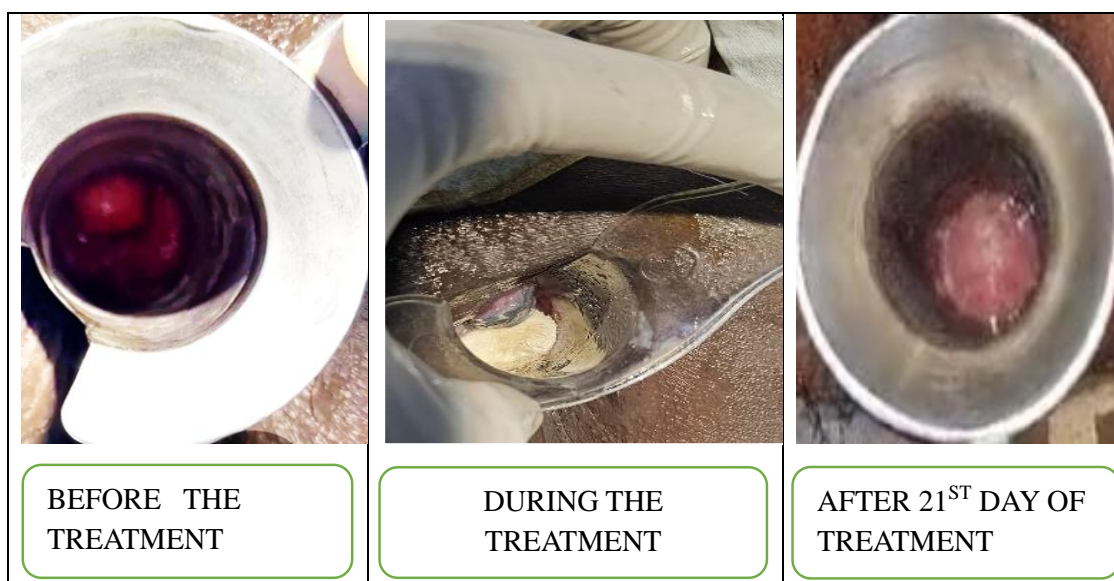


Fig. no 3. In Group B-Effect of Apamarga Pratisaraniya Ksharakarma.

DISCUSSION

Probable mode of action of Arka Kadali Pratisaraniya Kshara

Arka being *Tikshna*, *Katu* and *Ushna* with *Kaphashamaka* action, exhibits *Arshoghna*, *Shodhana*, *Lekhana*, *Kandughna* and *Vranaropana* effects. These properties help in controlling bleeding, reducing inflammation, relieving pruritus and causing chemical cauterization of the pile mass.

Kadali (*Musa paradisiaca*) is *Kaphapittahara* and *Raktashamaka* in nature, with cooling and soothing properties that balance the intense action of *Arka*. It

supports tissue repair, reduces inflammation and minimizes pain and burning sensation.

Clinically, the *Kshara* produces early haemostasis due to its *Sthambhana* and protein-coagulating actions, leading to cessation of bleeding within the first week. Gradual shrinkage of the pile mass occurs due to *Ksharana*, *Lekhana* and *Chedana* effects, followed by sloughing and fibrotic healing within 14–21 days. Overall, *Arka-Kadali Pratisaraneeya Kshara* is effective in reducing the signs and symptoms of *Arshas*, this combination is potent enough to cauterize and shrink the pile mass, safe

enough to minimize pain, burning and tissue damage and effective enough to prevent its recurrence.

Probable Mode of Action of *Apamarga Pratisaraniya Kshara* in *Arshas*

Apamarga with its *Katu-Tikta Rasa*, *Laghu-Ruksha Guna* and *Ushna Veerya*, acts as a potent *Kapha-Vata shamaka*, *Lekhana* and *Shodhana* agent. The *Kshara* rapidly arrests bleeding through its *Rakta Sthambhana* and *Shoshana* actions, often within a few days. Its *Ushna* and *Tikshna* properties reduce *Kapha* and *Meda*, thereby preventing congestion and recurrence. Pain, pruritus ani, and mucous discharge are significantly reduced due to the *Kaphahara* and *Lekhana* effects, which clear local obstruction and secretions. Mild, localized inflammation induced by the *Kshara* supports natural wound cleansing and repair. A gradual shrinkage of the pile mass occurs through *Ksharana*, *Lekhana* and *Chedana* actions, followed by fibrotic healing and re-epithelialization. This process restores healthy anal mucosa with minimal scarring. Overall, *Apamarga Pratisaraneeya Kshara* offers rapid haemostasis, effective pile mass reduction, prompt symptomatic relief and satisfactory healing with minimal recurrence.

Probable Mode of action of *Pratisaraniya Kshara*

Arka kadali and *Apamarga Pratisaraneeya Kshara* acts on haemorrhoids in two ways

- Coagulation of protein
- Chemical cauterization of the haemorrhoidal mass

Upon application

- Immediate aseptic inflammation is initiated.
- Within the haemorrhoidal vessels the coagulation of protein leads to disintegration of haemoglobin into haem and globin. the haem present in the slough gives the discharge its colour. This is followed by ischaemic necrosis of the pile mass occurs as the blood supply to the pile mass gets impeded, sloughing off in 7–14 days. Eventually, the affected site undergoes wound healing with minimal fibrosis, leading to scar formation and obliteration of the mass.

CONCLUSION

Throughout the course of treatment, none of the subjects in either group exhibited any untoward effects following *Arka Kadali Pratisaraniya Kshara Karma* or *Apamarga Pratisaraniya Kshara Karma*. The procedures in both the methods were simple and cost effective. Chi-square value is 0.40, degree of freedom is 2, p-value is 0.82. There is no significant difference between Group A and Group B in their overall response ($p > 0.05$). Based on observation and result, there is no significant difference between the effect of *Arka Kadali Pratisaraniya Kshara Karma* and *Apamarga Pratisaraniya ksharakarma* in management of *Abhyantara Arshas*.

REFERENCES

1. Sushruta Samhita; with the Nibandhasangraha Vyakya of Sri Dalhanacharya; edited by Vaidya Yadavji trikamji; Chaukhambha Sanskrit Sansthan; Varanasi, Reprint edition 2021; sutra sthana Chapter No 33; (Su. Ni.33/4) Page No:144.
2. Sushruta Samhita, with the Nibandhasangraha Vyakya of Sri Dalhanacharya; edited by Vaidya Yadavji trikamji; Chaukhambha Sanskrit Sansthan; Varanasi, Reprint edition 2021; sharirasthana Chapter No 6; (Su.sha.6/9) Page No:370.
3. Sushruta Samhita, with the Nibandhasangraha Vyakya of Sri Dalhanacharya; edited by Vaidya Yadavji trikamji; Chaukhambha Sanskrit Sansthan; Varanasi, Reprint edition 2021; sharira sthana Chapter No 6; (Su. Ni.2/4) Page No:271.
4. Sushruta Samhita, with the Nibandhasangraha Vyakya of Sri Dalhanacharya, edited by Vaidya Yadavji trikamji, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint edition 2021; chikitsasthana Chapter No 6; (Su. Chi. 6/3) Page No:430.
5. Sushruta Samhita, with the Nibandhasangraha Vyakya of Sri Dalhanacharya, edited by Vaidya Yadavji trikamji; Chaukhambha Sanskrit Sansthan; Varanasi, Reprint edition 2021, chikitsa stana chapter 6, p430.
6. Sushruta Samhita, with the Nibandhasangraha Vyakya of Sri Dalhanacharya, edited by Vaidya Yadavji trikamji, Chaukhambha Sanskrit Sansthan; Varanasi, Reprint edition 2021; sutrasthana Chapter No 11; (Su. su. 11/11) Page No:45-46.
7. Somen Das; A concise text book of surgery; 10th edition, 2018; Published by Dr. S. Das. 13, Old Mayors'Court, Kolkata-700005. India; Chapter no 46, Rectum and anal canal: Page no:1074.
8. Exam preparatory manual for undergraduates surgery, 2nd edition, editors gunjan s desai, verushka mansukhani, Prasad pande. 2nd edition 2018, chapter no 17, page no :210.
9. Ali SA, Shoeb MFR. Study of risk factors & clinical features of hemorrhoids. Int Surg J.
10. Somen Das; A concise text book of surgery; 10th edition, 2018; Published by Dr. S. Das. 13, Old Mayors'Court, Kolkata- 700005. India: Chapter no 46, Rectum and anal canal; Page no:1075.
11. SRB manual of surgery 5th edition, shrirambhat chapter no.25, Page no.962-976.
12. Dr. Prakash .L. Hegde. Dravyaguna Vijnana. Varanasi: Chowkamba Orientalia Publications; vol 1, p 80-92.
13. Dr. J. L. N. Sastry. Dravyaguna Vijnana. Varanasi: Chowkamba Orientalia Publications; 2010. Vol. II. p1134.