PRATISARANEeya KSHARA – A POTENT WEAPON AGAINST DUSHTA VRANA

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ABSTRACT

Kshara therapy, a proud of Ayurveda, is a real wealth and weapon of Ayurvedic physician as well as surgeon. It is a real dravya as it posses bahukalpa, bahuguna, sampannata and yogyata. Due to these features we have thousands of references regarding utility of Ksharas in different form as well as potency. It has been used as Dravya shodhaka, Dravya bubhuksharakara, as Payana dravya to sharpen the instrument and significantly in so many internal (with Paneeya Kshara) as well as external diseases (with Pratisaraneeya Kshara). Sushruta praised the effect of Kshara so much that it can replace Shastra Karma since it does the functions of Chedana, Bhedana, Lekhana, Darana karmas simultaneously without the help of Shastra. It is a prime weapon of surgeons and considered as superior among shastras and anushastras. Among many indications of Kshara, management of dushtavrana is also one. So, a case study of 20 patients with dushtavrana is presented here who were treated with Apamarga Teekshna Pratisaraneeya Kshara, Gomutra arka and Ropana yoga ‘Yastimadhu ghrita’.

Keywords: Pratisaraneeya Kshara, Gomutra arka, Yastimadhu ghrita, Dustavrana

INTRODUCTION

"Tatra Ksharanat kshanadava Kshara" or ‘Ksharati yo malam sheegram tat Kshara iti uchyate’ Kshara or caustic substance (Alkalis) is defined as any substance whose can remove morbid tissues and can cleanse tissues and doshas.

Sushruta has dedicated complete chapter for detailed description of its preparation, different Kshara dravyas, classification, properties, indication and contraindication, method of application etc. There are mainly 2 types of Ksharas; they are Paneeya Kshara and Pratisaraneeya Kshara. Paneeya Kshara is mild in nature and usually used in internal disorders; whereas Pratisaraneeya Kshara is used for external application/diseases and has got more Teeksha guna.

Properties of Pratisaraneeya Kshara

Guna : Teeksha, Ushna, Agneya.
Doshagna : Tridosh shaamaka
Karma : Chedana, Bhedana, Lekhana, Pachana, Darana, Vilayana, Shodana, Ropana, Shoshana, Krimighna, medohara

Chemical composition of Kshara

Prof A. R. Vasudev Murthy, describes the chemical composition of Kshara in his Indian Tradition of Chemistry and Chemical Technology, as follows:

The wood ashes contain Potassium and Sodium carbonates (K₂CO₃ and Na₂CO₃). Limestone and sea shells contain Calcium carbonate (CaCO₃). On heating strongly carbonate decomposes into Calcium oxide
(CaO), quick lime and Carbon dioxide (CO₂), which escapes into the air. Calcium oxide reacts with water vigorously and gives Calcium hydroxide (CaOH) which is lime water indeed. Calcium hydroxide reacts with Potassium/Sodium carbonate and gives rise to Calcium carbonate which comes down as precipitate. Potassium hydroxide (KOH) remains in solution which may be concentrated by boiling to different extents.

**Preparation of Teekshna Pratisaraneeya Kshara**

Panchagras of well grown Apamarga (whole plant) was collected and dried under sun shade. The whole plant was burnt into ashes. The ash was collected (1part) and mixed with six parts of water and stirred well, allowed to settle overnight. Then it was filtered through double folded cloth for 21 times, residue was thrown out. Amber colored (cows urine colour) filtrate was obtained. This was boiled on Mandagni in an iron vessel. When the content was reduced to half, about 1/3 of Kshara jala was taken out of the vessel. 1/10th of the ash quantity, Shukti was taken and heated red hot and then mixed with Kshara jala to dissolve it completely. Thus dissolved Shukti is added to boiling Kshara jala (This is called Avapa) and continued to boil. Meanwhile 1/100th of ash quantity Chitrakamoola and Vacha kalka was added to the boiling Kshara jala (This is called Prativapa) and boiling was continued. When the content attained semisolid consistency it was removed from the fire and stored in a container. This is Teekshna Pratisaraneeya Kshara. It is dull white in colour and its pH was 13.5.

**Dushta Vrana**

Dushta Vrana is defined as Vrana in which vitiation of all doshas causes non-healing and chronicity of ulcer presenting with features like; Ati samvrutha, Ati vivrutha (Extremely narrow or wide mouthed), Ati katname, Ati mridu, Utsannam, avasannam (Elevated or Depressed), Krishna rakta pitha sukladinam varnam anayatamavarna (Black or red or white or other coloured), Atiseeta or Athushna, Bhirava puthi puya mamsa sira snayu prabhritihibli (Full of slough or pus or veins or flesh or ligaments or putrid pus), Daha (burning sensation), Raga (redness), Paka (suppuration), Kandu (itching), Dirghakalanubandhi (chronicity) etc. These features exactly coincide with the features of chronic non healing infected ulcer which has pain, tenderness, discharge, slough formation, necrosis of tissue etc. In these conditions first Vrana Shodhana (ulcer debridement) followed by Vrana Ropana (healing) is required.

Sushruta has mentioned the features of dushta vrana where Pratisaraneeya Kshara is to be applied such as Utsanna mamsa, katina, Kandu yuka and Chirotthita. By considering these factors clinical study was conducted by using 3 drugs for the total management of dushta vrana.

1. Teekshna Pratisaraneeya Kshara
2. Gomutra arka (Prani janya Kshara)
3. Yastimadhu ghrita (Ropana yoga)

**Clinical study:** In this study, 20 cases of Dushtavrana were selected diagnosed on the basis of signs and symptoms as per Ayurveda as well as modern medical science.

**Diagnostic criteria:** The diagnostic criteria was based on the signs and symptoms such as pain, burning sensation, itching, size, shape, discharge, odour etc.

**Inclusion criteria**

- Patients with Dushta Vrana aged between 20 – 60 yrs.

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www.iamj.in
- Utsanā mamsa, Katīna, Kanduyuktha, Sravayuktha vrana.
- All the Vrana where Shodhana is needed, which are located in twak, and mamsa dhatu.
- Deerghaalanubandhi (Dushta Vrana with a minimum duration of 21 days)

**Exclusion criteria**

- Dusta vrana in Pregnant women
- Sadhya and Seevana yogya vranas.
- Asthigata vranas
- Vranas which are having more than 7 cm length/diameter
- Non healing ulcers of malignancy, Syphilis etc.
- If the patient is having uncontrolled systemic diseases.

**Laboratory Investigation** (For the exclusion criteria)

Blood routine, RBS, HIV, Culture & Sensitivity of the secretion, Histopathological examination, other necessary investigations like X-ray etc.

**Treatment procedure**

The ulcer and surrounding area was cleaned with ushna jala. The surface of the Vrana was scraped (lekhana) with rough surface of scoop. The Teekshna Apamarga Kshara was applied with a Shalaka over the Vrana, waited for 100 maathrakaala (about 1 minute). Then Kshara was wiped with cotton and Vrana was washed with nimbu swarasa (to neutralize the effect of Kshara) and ushna jala respectively. Observation was made for the Krishna Varnata of Vrana. Wherever the Krishna Varnata of Vrana did not appear properly, the procedure was repeated once again.

**Post operative:** Vrana was anointed with Yastimadhu Ghrita and bandage was done.

**Observation period:** Vrana was observed every day for 21 days and dressing was done daily by washing the ulcer with Gomutra arka and applying the Yastimadhu Ghrita.

**Assessment criteria:** The assessment of the result was made on signs and symptoms of the ulcer presented before and after Pratisaraneeya Kshara Patana and the completion (21 days) of the treatment. Grading were given for every clinical features

<table>
<thead>
<tr>
<th>Sl no</th>
<th>Subjective</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pain</td>
<td>Size</td>
</tr>
<tr>
<td>2</td>
<td>Burning sensation</td>
<td>Odour</td>
</tr>
<tr>
<td>3</td>
<td>Itching</td>
<td>Discharge</td>
</tr>
<tr>
<td>4</td>
<td>--</td>
<td>Granulation tissue</td>
</tr>
</tbody>
</table>

**Pain:**

0 (Nil) - No pain.
1 (Mild) - Tolerable occasional localized pain
2 (Moderate) - Localized pain during movement is not tolerable
3 (Severe) - Localized pain even during rest, disturbing the sleep

**Burning Sensation:**

0 (Nil) - No Burning sensation
1 (Mild) - Occasional localized Burning sensation
2 (Moderate) - Intermittent localized burning sensation
3 (Severe) - Continuous burning sensation which disturbs the sleep

**Itching:**

0 (Nil) - No Itching
1 (Mild) - Occasional localized Itching
2 (Moderate) - Intermittent localized itching
3 (severe) - Continuous localized itching

**Size:** (Length & Width)

Grade – 0 - Complete wound Healing
Grade – 1 - 1 cm to 3 cm
Grade – 2 - 3 cm to 5 cm
Grade – 3 - 5 cm to 7 cm
Odour:
Grade –0 - No smell
Grade –1 - Presence of bad smell

Discharge:
Grade –0 - No discharge / dry dressing
Grade –1 - Scanty occasional discharge & little wet dressing.
Grade –2 - Often discharge requires daily dressing
Grade –3 - Profuse, discharge which needs frequent change of dressing.

Granulation Tissue:
Grade –0 - Healthy granulation tissue
Grade –1 – Presence of unhealthy granulation tissue less than 25%
Grade –2 – Presence of unhealthy granulation tissue between 25-50%
Grade –3 - Presence of unhealthy granulation tissue more than 50%

RESULT

Table 1: Effect of treatment on day 1

<table>
<thead>
<tr>
<th>Signs and symptoms</th>
<th>Mean</th>
<th>MD</th>
<th>% relief</th>
<th>SD</th>
<th>SE</th>
<th>“t”</th>
<th>“p”</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BT</td>
<td>AT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>2.34</td>
<td>0.82</td>
<td>1.54</td>
<td>0.57</td>
<td>0.122</td>
<td>14.64</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Burning sensation</td>
<td>2.58</td>
<td>0.92</td>
<td>1.62</td>
<td>0.55</td>
<td>0.132</td>
<td>14.94</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Itching</td>
<td>2.34</td>
<td>0.48</td>
<td>1.78</td>
<td>0.48</td>
<td>0.18</td>
<td>16.82</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Discharge</td>
<td>3.2</td>
<td>0.84</td>
<td>2.12</td>
<td>0.42</td>
<td>0.086</td>
<td>21.26</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Odour</td>
<td>1.2</td>
<td>0.34</td>
<td>0.8</td>
<td>0.48</td>
<td>0.098</td>
<td>7.54</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Unhealthy granulation tissue</td>
<td>2.58</td>
<td>0.45</td>
<td>2.36</td>
<td>0.52</td>
<td>0.110</td>
<td>19.76</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
</tbody>
</table>

Table 2: Effect of treatment on day 21

<table>
<thead>
<tr>
<th>Signs and symptoms</th>
<th>MEAN</th>
<th>MD</th>
<th>% relief</th>
<th>SD</th>
<th>SE</th>
<th>“t”</th>
<th>“p”</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BT</td>
<td>AT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>2.34</td>
<td>0.24</td>
<td>2.22</td>
<td>0.58</td>
<td>0.132</td>
<td>16.82</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Burning sensation</td>
<td>2.58</td>
<td>0.18</td>
<td>2.64</td>
<td>0.56</td>
<td>0.124</td>
<td>18.88</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Itching</td>
<td>2.34</td>
<td>0.22</td>
<td>2.75</td>
<td>0.69</td>
<td>0.184</td>
<td>16.52</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Discharge</td>
<td>3.2</td>
<td>0.36</td>
<td>2.92</td>
<td>0.62</td>
<td>0.156</td>
<td>19.74</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Odour</td>
<td>1.2</td>
<td>0.18</td>
<td>0.92</td>
<td>0.48</td>
<td>0.098</td>
<td>9.644</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Unhealthy granulation tissue</td>
<td>2.58</td>
<td>0.64</td>
<td>2.84</td>
<td>0.55</td>
<td>0.122</td>
<td>20.26</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Length</td>
<td>2.34</td>
<td>0.98</td>
<td>1.54</td>
<td>0.52</td>
<td>0.118</td>
<td>13.46</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
<tr>
<td>Width</td>
<td>2.58</td>
<td>0.96</td>
<td>1.52</td>
<td>0.51</td>
<td>0.116</td>
<td>13.048</td>
<td>&lt;0.001</td>
<td>HS</td>
</tr>
</tbody>
</table>
Table 3: overall effect of the treatment

<table>
<thead>
<tr>
<th>Effect of Therapy</th>
<th>No. of patients</th>
<th>% relief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Markedly Improved, 75-100 % Relief</td>
<td>18</td>
<td>90%</td>
</tr>
<tr>
<td>Moderately Improved, 50-74.99 % Relief</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Mild Improvement, 25-49.99 % Relief</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>No Change, &lt;24.99 % Relief</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

DISCUSSION

Effect on pain:

Pain was reduced up to 68.88% on 1st day (on the same day of treatment) which was statistically highly significant (t = 14.64). Pain mainly due to infection, destruction of tissue or tissue tension due to collection of pus or exudates and tough slough. Infection had reduced and pus and other collections were drained and sloughs were reduced because of Chedana, Bhedana, Lekhana, Darana, properties of Pratisaraneeya Kshara. On 21st day pain was reduced up to 90.54%, which was statically highly significant (t = 16.826) may be because of Gomutra arka prevents the further infection and growth of slough and Vata Pitta shamaka property of Yashtimadhu Ghritha.

Effect on burning sensation:

The burning sensation was reduced up to 66.84% (t = 14.94) on 1st day, is statistically highly significant. In non-healing ulcer due to poor circulation there will be hypoxia to the nerve endings results in burning sensation. The removal of slough by Lekhana, Shodhana, pachana Vilayana, and Teekshna properties of Kshara, which improves the circulation to the ulcer area. On 21st day burning sensation was reduced up to 90.22% which was statically highly significant (t = 18.884),here Gomutra arka helped to improve the circulation and Yashtimadhu Ghritha having VataPitta shamaka & Daha shamana property may be the reason.

Effect on itching:

The itching in the ulcer area on 1st day was reduced up to 78.66% (t=16.82) which was statistically highly significant. Itching is because of infective organisms’ dead tissues and presence of pus in the ulcer. It was reduced due to Krimighna, Lekhana, Shoshana and Shodhana property of Kshara. On 21st day itching in the ulcer area was reduced up to 90.45% (t=16.524) which was statistically highly significant, is because of Krimighna property of Gomutra arka and it maintains the wound sterilization.

Effect on discharge:

On 1st day, the discharge was reduced 73.62% which was statistically (t=21.26) highly significant on 21st day the discharge was reduced 89.69% which was statistically (t=19.740) highly significant. This may be due to improvement in circulation by Shodhana, Bhedana Lekhana, and Shoshana properties of both the Ksharas Kshara.

Effect on odour:

On 1st day, the smell was reduced up to 72.54% which was statistically (t=7.54) highly significant. On 21st day the smell was reduced up to 80.86% which was statistically (t=9.646) highly significant, this may be due to Shodhana, Lekhana Krimighna and Pachana property of both Kshara and the arka inhibits growth of bacteria and keeps the wound sterile.

Effect on unhealthy granulation tissues:

On 1st day, the unhealthy granulation
tissues were reduced up to 81.56% which was statically significant (t-19.76). On 21\textsuperscript{st} day, the unhealthy granulation tissues were reduced 85.52% which was statically significant (t-20.426). This was due to Chedana, Lekhana, Kledahara, Vishada guna, and Tridoshaguna properties of Kshara, which played important role in scraping out the debris and slough from the Vrana and it further prevented the recurrance of unhealthy granulation tissue and promoted healing with the help of Yastimadhu ghrita.

Effect on length and width:

On 21\textsuperscript{st} day, the length of the Vrana was reduced up to 50.20% which was statistically highly significant (t-13.468), and width was reduced up to 59.94% which was statistically highly significant (t-13.048). This may be due to Vrana Shodhana property of Kshara, which provides ideal environment for the healing. Further the vDNA was healed due to Ropana property of Yastimadhu Ghrita.

CONCLUSION

Pratisaraneeya Ksharas are best substitute for surgical debridement of an ulcer. It does the multiple actions simultaneously such as chedana, bhedana, lekhana, darana etc. It is a simple OPD level procedure, relatively painless, can do withought anesthesia and hospitalization. Very much cost effective and saves the time compared to Surgical Debridement. Kshara will remove only unhealthy granulation tissue, so the ulcer size will not increases after the procedure. Wherever the Surgical debridement is contraindicated or where the patient refuses the debridement in such cases Kshara can be done safely.

BIBLIOGRAPHY

- Bhavamishra, Bhava prakasha, with Vidyodini Hindi Teeka by Bhishak Ratnashree. Brahma Shankara Shastri and Sri. Roopalal Vaishya; 8\textsuperscript{th} ed, 1997, Chaukhambha.
- Das S; A Concise Text book of Surgery, 3\textsuperscript{rd} ed, 2001, Published by Dr. S. Das, 13 Old Mayors’ Court, Calcutta.
- Das S; A Manual on Clinical Surgery, 4\textsuperscript{th} ed, 1996, Published by Dr. S. Das, 13 Old Mayors’ Court, Calcutta.
- Deva Raja Radhakantha, Shabda kalpa druma, Vol. 4, Nag publishers, Delhi.
- Madhvakara, MadhavaNidana with Madhukos Vyakhya by Vijayarakshita and Srikantadatta and Vidyodini Teeka by Sri. Sudarshana Sastri, 29\textsuperscript{th} ed, 1999, published by Chaukhambha Samskuta Samsthana, Varanasi, Uttar Pradesh.
- Panchagavya Published by Shree Rama-chandrapuramath, Girinagara Bangalore 2013


● Sharangadhara, Sharangadhara Samhitha, Jeevan Prada Vyakhya by Dr. Shailaja Sreevasthava, 2nd ed, Published by Chaukhambha Samskuta Samsthana, Varanasi, Uttar Pradesh.


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