EVALUATION OF THE EFFICACY OF GRANTHOKT MATRA OF NIRUHA BASTI WITH REFERENCE TO KALBASTI KRAMA IN THE MANAGEMENT OF PAKVASHAYGATA VATVYADHI

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ABSTRACT
Symptoms of Pakvashaygata vatvyadhi are commonly found in many people due to changes in the food habits and lifestyle. Basti is the principle treatment of vatvyadhi. The quantity of niruhabasti given in nowadays is less than that of mentioned in samhita granthas i.e. 12 prasrut (960 ml), so research was carried out to evaluate the efficacy of granthokt matra of niruha basti. This research work includes total 30 patients of pakvashaygata vatvyadhi with minimum 4 symptoms of disease, selected from O.P.D. and I.P.D. of R.A. Podar Ayurved Hospital, Mumbai and they were given kalbastikrama with 960 ml of niruha basti, follow-up was taken for 24 days to study the effect of treatment on subjective and objective parameters. Niruha basti treatment with granthokt matra showed extremely significant relief in subjective parameters like aantrakoojan, kaalbastikrama, prakopa, i.e. 12 prasrut (960 ml), so research was carried out to evaluate the efficacy of granthokt matra of niruha basti is effective in the management of pakvashaygat vatvyadhi.

Keywords: Niruha basti, Granthokt matra, pakvashaygata vatvyadhi, Kalbasti karma.

INTRODUCTION
In today’s modern era, civilization and changes in the social life style are resulting in formation of many vatvyadhies. Mass population shifted from rural to civil areas and low calorie, less nutritional diet, ruksha, sheet, paryushit diet consumption (excess vada-paav, bakery items), ratrijagrana due to work, malnutrition, other causes of dhatukshaya are responsible for the formation of vatvyadhies in the body. Sitting in one position for longer time due to excess use of computers, excessive leaning and travelling for longer duration in standing position, maladivegavidharana and irregular food habits are responsible for vata prakopa.
In Pakvashaygat vat\(^1\), there is sthanik vikruti in large and small intestines predominantly in large intestines, so in view of treatment vatashamana is expected. Pakvashaya is the main sthana of residence of vata dosha, hence in pakvashaygat vat, disease of vata pradhanya, Basti treatment is very important\(^3\).

Nowadays, the basti daan methods have been modified in order to match the need of today’s people. In that, the quantity of niruha basti given by many practitioners is less than that of mentioned in samhita granthas i.e.12 prasrut (960 ml)\(^1\), as they think that today’s people can’t hold the total granthokt matra of niruha basti. Even if we get positive results of less quantity of niruha basti that is mentioned in our samhita granthas, the quality and the quantity of results are neither constant nor equal among various patients. The classical samyak yog symptoms are hardly found in patients undergoing basti therapy. Hence, the present study was designed, to evaluate the efficacy of granthokt matra of niruha basti and help the patients to get 100% results of basti karma.

**AIM AND OBJECTIVES**

1. To study the efficacy of granthokt matra of niruha basti in the management of pakvashaygat vatvyadhi with reference to kaalbasti krama.
2. To study the standardization of granthokt matra of niruha basti.
3. To study along with symptoms of pakvashaygat vat, how other associated symptoms gets reduced with niruha basti.

**MATERIALS AND METHODS**

A clinical study on pakvashaygat vatvyadhi with kaal basti krama conducted to evaluate the efficacy of granthokt matra of niruha basti using subjective, objective parameters and dharan kaal of basti.

**Ethical clearance:**

This study was approved by ethics committee for human research of PG section, R.A. Podar Ayurved College, Worli, Mumbai. Patient confidentiality was ensured at all times during the study. The protocol of this clinical study includes the study design, inclusion and exclusion criteria for clinical assessment as follows.

**Study design:**

Type of study : Randomized, open, uncontrolled, Prospective clinical study.

Selection : Random

No. of patients : 30

**Criteria for selection of patients:**

**Inclusion criteria of patients –**

1) Patients having min. 4 and max. all textual symptoms of pakvashaygat vatvyadhi.
2) Patients in whom basti is indicated.
3) Age group-20 to 70 yrs.
4) Sex- male and female.
5) Patients ready to give written informed consent.

**Exclusion criteria of patients:**

1. Age group–less than 20 and more than 70 years.
2. Patients of auto-immune disorders, neoplastic diseases & other diseases.
3. Patients having major illness for a longer period and systemic pathogenesis e.g. cardiac disease, CRF.
4. Pregnant females and lactating mothers.
5. Patients in whom basti is contra - indicated.
6. Patients with infectious diseases, Irritable Bowel Syndrome, Gastric ulcer, ulcerative colitis, Pulmonary & intestinal tuberculosis.

**Consent:**

Patient fulfilling criteria for selection were included under study after receiving their written consent.

**Drugs for the study –**

**For anuvasan basti** – Til taila 120ml with glycerine syringe and

**For niruha basti** – Dashmool kwatha, madhu, saindhav, Til taila, dashamool kalka with enema can was given.

For this study the quantity of basti ingredients were taken as

Follows -

1) **Madhu**- 60 ml
2) **Saindhav**-1karsh
3) Tiltaila-60 ml
4) Dashmool Kalka-40 ml
5) Dashmool Kwatha-800 ml
Means, according to samuday matra, Madhu-3/4 part, Tiltaila-3/4 part, Dashmool kalka-1/2 part and Dashmool kwatha-10 parts was taken for this study. In this way, total quantity of niruha basti is slightly more than 960 ml.

Preparation of dashmool kwatha:
Dashmool kwatha for basti was prepared according to the standard textual methods. 100 gms of dashmool bharad was kept in 1600 ml luke warm water on the previous night. Next day morning this mixture was boiled till half of the previous quantity of water i.e.800ml remains. Then this kwatha was filtered with fine cloth and the dashmool kwatha was prepared.

Niruha basti nirman:
Firstly, madhu and saindhav was mixed in khal till formation of homogenous mixture of both. Then Til taila was added to the mixture, that results in homogeneity of mixture, after that this mixture was taken into another pot and dashmool kalka was added to the mixture which gets absorbed quickly in the mixture and finally dashmool kwatha was added to the mixture and stirred well till formation of homogenous mixture. Then this mixture was filtered with fine cloth. This lukewarm homogenous mixture of kwatha 960 ml was given to the patients with enema pot. Basti prepared by this method eliminates kapha, vata and pitta immediately from the srotasas.

Method of Administration:
1. Dashmool niruha/Tiltaila anuvasan
2. Dose -niruha 960 ml, Tiltaila anuvasan 120 ml
3. Kal–niruha-once a day, morning before breakfast
4. Anuvasan–once a day after lunch
5. Duration of therapy -16 day
6. No. of patients -30
7. Route of administration- per rectum.

Withdrawal from the study-
1) Discontinuation of treatment during trial.
2) Development of any complication at any point of time when treatment is continuing.

I) Subjective Assessment:
Gradations of symptoms of Pakvashaygat Vat
I) Aantrakoojan:
O- Aantrakoojan absent
1- Aantrakoojan mild
2- Aantrakoojan moderate, not irritable for patient
3- Aantrakoojan severe, irritable for the patient
II) Nabhisool:
0-Nabhisool absent
1- Nabhisool mild
2- Nabhisool moderate but patient able to walk
3- Nabhisool severe and patient not able to walk
III) Krucchramootra
0-Normal mutrapravrtti
1- Mild pain during mutrosarg
2- Moderate but bearable pain during mutrosarg
3- Severe unbearable pain during mutrosarg
IV) Krucchrapurish
0-Normal evacuation of the rectum
1- Stool not passed easily requires pressure
2- Stool passed with the use of mild laxatives
3- For stool passing requires strong purgative
V) Aanaha
0-Absent
1- Feeling of bloating of abdomen
2- Distention can be clinically elicited but not affecting the routine activity
3- Distention can be clinically elicited & causing pain in abdomen & affecting routine activity
VI) Trikvedana
0-Absent
1- Mild pain
2- Moderate pain but not having pain during walking
3- Severe unbearable pain causing difficulty in walking.
2) **Objective assessment:**
SLR- tests of both legs and abdominal girth before and after treatment were taken for objective assessment.

3) **Basti dharan kal:**
_Dharan kal_ of each _basti_ that is _niruha_ and _anuvasan basti_ of all 30 patients with symptoms after _basti pratyagam_ were noted down.

**Plans of Statistical Analysis**

All the data gathered & collected during this study was subjected to statistical analysis to reach the final results and conclusions.

A] For objective parameters (quantitative data)-parametric test, paired ‘t’ test was applied.

B] For subjective parameters (qualitative data)-non parametric tests, Wilcoxon signed rank test was applied.

Significance of the results was studied at 5% level of significance.

**OBSERVATIONS AND RESULTS:**

Effect of treatment on parameters is shown in the table.

**Table 1:** Effect on subjective parameters of 30 patients of _Pakvashaygat Vat_ by wilcoxon-matched-pairs test (signed rank test)

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Mean (SD)</th>
<th>SE of diff.</th>
<th>Sum of all sign rank W</th>
<th>No. of pairs</th>
<th>P</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aantrakoojan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BT 2.100 (0.8030)</td>
<td>0.1466</td>
<td>264</td>
<td>27</td>
<td>0.0009</td>
<td>Extremely significant</td>
<td></td>
</tr>
<tr>
<td>AT 1.033 (0.9643)</td>
<td>0.1761</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIFF. 1.067 (1.230)</td>
<td>0.2245</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nabhishool</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BT 2.100 (0.7120)</td>
<td>0.1300</td>
<td>435</td>
<td>29</td>
<td>&lt;0.0001</td>
<td>Extremely significant</td>
<td></td>
</tr>
<tr>
<td>AT 0.6000 (0.5632)</td>
<td>0.1028</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIFF. 1.5000 (0.5724)</td>
<td>0.1045</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Krucchramootra</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BT 1.733 (0.9444)</td>
<td>0.1724</td>
<td>190</td>
<td>29</td>
<td>0.0386</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>AT 1.267 (0.8277)</td>
<td>0.1511</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIFF. 0.4667 (1.042)</td>
<td>0.1902</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Krucchrapurish</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BT 2.133 (0.8604)</td>
<td>0.1571</td>
<td>465</td>
<td>30</td>
<td>&lt;0.0001</td>
<td>Extremely significant</td>
<td></td>
</tr>
<tr>
<td>AT 0.7333 (0.6397)</td>
<td>0.1168</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIFF. 1.4000 (0.4983)</td>
<td>0.09097</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aanaha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BT 2.000 (0.7878)</td>
<td>0.1438</td>
<td>406</td>
<td>28</td>
<td>&lt;0.0001</td>
<td>Extremely significant</td>
<td></td>
</tr>
<tr>
<td>AT 0.7667 (0.6261)</td>
<td>0.1143</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIFF. 1.233 (0.5683)</td>
<td>0.1038</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trikvedana</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BT 2.233 (0.5683)</td>
<td>0.1038</td>
<td>243</td>
<td>26</td>
<td>0.0013</td>
<td>Very significant</td>
<td></td>
</tr>
<tr>
<td>AT 1.633 (0.7184)</td>
<td>0.1312</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIFF. 0.6000 (0.7240)</td>
<td>0.1322</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 2:** Showing effect on objective parameters of 30 patients of _Pakvashaygat Vat_ by Paired ‘t’ test

<table>
<thead>
<tr>
<th>Sr. no</th>
<th>Objective parameters</th>
<th>Mean (SD)</th>
<th>SE of diff.</th>
<th>t</th>
<th>P</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SLR test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BT</td>
<td>79.333</td>
<td>8.483</td>
<td>1.549</td>
<td>2.276</td>
<td>0.0304</td>
</tr>
<tr>
<td></td>
<td>AT</td>
<td>82.667</td>
<td>6.661</td>
<td>1.216</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DIFF.</td>
<td>-3.333</td>
<td>8.023</td>
<td>1.465</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LT leg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BT</td>
<td>82.000</td>
<td>5.663</td>
<td>1.034</td>
<td>2.443</td>
<td>0.0209</td>
</tr>
<tr>
<td></td>
<td>AT</td>
<td>84.667</td>
<td>6.008</td>
<td>1.097</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DIFF.</td>
<td>-2.667</td>
<td>5.979</td>
<td>1.092</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Abdominal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BT</td>
<td>89.317</td>
<td>11.323</td>
<td>2.067</td>
<td>2.905</td>
<td>0.0070</td>
</tr>
<tr>
<td></td>
<td>AT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DIFF.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3: Showing effect on *dharan kal* of *niruha basti* of 30 patients of *Pakvashaygat Vat* by paired’*t*’ test

<table>
<thead>
<tr>
<th>Dharan kal of niruha basti</th>
<th>Mean</th>
<th>SD</th>
<th>SE of diff.</th>
<th>t</th>
<th>P</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT</td>
<td>5.733</td>
<td>3.796</td>
<td>0.6930</td>
<td>13.090</td>
<td>&lt;0.0001</td>
<td>Extremely significant</td>
</tr>
<tr>
<td>AT</td>
<td>21.100</td>
<td>8.269</td>
<td>1.510</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIFF.</td>
<td>-15.367</td>
<td>6.430</td>
<td>1.174</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DISCUSSION**

*Pakvashaygat vat* is commonly found disease nowadays, in almost all the chronic diseases symptoms of *pakvashaygat vat* are found in initial stage. The symptoms *aantrakoojan, Aanaha, kruccrapurish* are found abundantly in many people nowadays due to irregular food habits and excess intake of *paav* and other bakery items, *ratrijagaran, diwaswaap*, prolonged work on computer in one position.

**ENS-CNS interactions:**

The gastrointestinal tract communicates with the CNS in two ways. Afferent neurones convey signal of consciousness, including pain, discomfort, feeling of hunger and satiety. CNS provides signals to control the intestine through efferent neurones, which are, in most cases relayed through the ENS. ENS modifies all the CNS functions. *Basti* can control the total *vayu* located all over the body by controlling the *vayu* phenomenon in *Pakvashaya.*

*Basti* may control the entire system by means of regulating the ENS.

**Absorption of basti**

In allopathic science of medicine, rectal Trans mucosal route is used for systemic effects. Rectal administration provides rapid absorption of many drugs and is painless. *Niruha basti* reaches the illeo-caecal junction then returns back to be eliminated. Drugs are absorbed between rectum and illeo-caecal junction. Volume of the *basti* fluid is an important factor for absorption and effect. The volume mostly controls the retention of *basti* inside the lumen. The standard dose of *niruha* according to the age is scheduled for the elimination of the morbid materials from the *ko-*

*shtha* and repetition of such procedure definitely indicates its cleansing property on the colon.

The *sneha* used in *basti* lowers the colonic pH which protects the colonic mucosal layer from formation of polps, inhibits inflammation and increases mineral absorption and also influences the immune function of the body. The *niruha* therapy along with its therapeutic effects shows cleansing effect on the colon. Cleansing of the colon could dilute the toxin concentration in the caecum and facilitate the removal of the toxin. *Niruha* dilutes the bacterial toxin concentration in the large intestines. It reduces stagnation and subsequent bacterial proliferation in the large intestine and maintains harmony of the intestinal flora in promoting optimal colon health. The therapeutic effect is improved muscle tone, which facilitates peristaltic action and enhances the absorption of nutrients from the caecum and ascending colon while minimising the absorption of toxic waste materials. It may enhance the immune system. The *niruha* by its cleansing action minimizes the toxin load in the large intestine resulting in the reduced burden on the liver, allowing the eliminative organs to function optimally. It also prevents the stagnation and minimizes the exposure of carcinogenic agents to the colonic wall.

**Dharan kal of basti:**

It was observed that, *dharan kal of niruha* on first day of *niruha* was min 2 to 5 minutes maximum upto 15 minutes in patients, except 5 patients in whom *basti pratayagam* was immediate. Gradually, *dharan kal of niruha basti* was increased in every *niruha basti* maximum upto 35 minutes on last
niuruha basti. And, also in those 5 patients dharan kal of basti was increased upto 5 to 10 minutes on last niuruha basti. So, first thing can be decided that today’s people can hold the granthokt matra of niuruha basti without any discomfort. This granthokt matra of niuruha can be held upto 35 to 40 minutes without any complaints by patients, so fair time is available for action of basti dravyas i.e. initially for cleansing of the colon and later on gradually, action on intestinal muscles, intestinal flora and subsequently prevention of bacterial proliferation. This indicates that doshprapok (vataprakop) was severe on first day of niuruha, hence basti pratyagam kal was earlier, later on as days passed on doshprakop (vataprakop) severity gradually decreases and dharan kal of niuruha basti gradually increases. Since basti is held for longer time it enhances the function of normal gut flora, increases absorption of vitamins and increases immunity of the body. Apan vayu vikruti comes to normal indirectly saman vayu and pachak pitta functions normally and digestive capacity of patient increases. It was observed that dharan kal of anuvasan on first day of anuvasan was min 10 minutes upto 4 hours in patients which increased upto maximum 12 to 14 hours on last day of anuvasan, it indicates that vataprakop caused by niuruha gradually decreases till last anuvasan basti. And maximum time is available for sneha for vatshaman and sharirbruhan.

Statistical analysis of dharan kal of niuruha basti of 30 patients of pakvashaygat vat before and after treatment by paired ‘t’ test showed statistically extremely significant results, ‘p’ value was <0.0001.

CONCLUSION

There was significant improvement in symptoms in study group before and after therapy. Overall percentage of relief was 50.55 %, which was significant. This shows, this study is effective in reducing the severity of symptoms of pakvashaygat vat. Effect of therapy on objective parameters shows significant changes in SLR tests of both legs and very significant changes in abdominal girth of study group, before and after therapy. So it can be concluded that basti acts effectively for the objective parameters and indirectly reduces the severity of signs of pakvashaygat vat.

Effect of therapy on dharan kal of niuruha basti shows extremely significant changes in study group, before and after therapy. So it can be concluded that basti therapy definitely had increased dharan kal of niuruha basti.

It is concluded that granthokt matra of niuruha basti is effective in reducing the severity of symptoms and signs of pakvashaygat vatvyadhi. Dharan kal of niuruha basti increased gradually upto last niuruha basti. So it can be concluded that, initially doshprapok is more that gradually decreases till last niuruha basti. Hence, severity of symptoms decreases. Also, vataprakop too decreases gradually till last basti. Also, increase in digestive capacity, feeling of lightness in the body, increase in appetite, feeling of freshness in the body, decrease in the abdominal girth, feeling of healthiness in the body, decrease in joints pain and indirectly improvement in the mental health these results found in patients during the treatment. So, it can be concluded that granthokt matra of niuruha is not only effective in decreasing the severity of symptoms of the pakvashaygat vat but also effective in decreasing other diseases and maintaining physical and mental health.

Acknowledgement

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**Graph 1:** Showing average dharan kal of niruha basti of 30 patients of Pakvashaygat Vat:

![Graph showing average dharan kal of niruha basti in minutes](image)

**Source of Support:** Nil

**Conflict Of Interest:** None Declared

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