



## Review Article

www.ijrap.net

(ISSN Online:2229-3566, ISSN Print:2277-4343)



### OPPORTUNITIES FOR RESEARCH IN BASTI CHIKITSA: A CRITICAL REVIEW

Santosh R. Niphade <sup>1\*</sup>, Varsharani A. Chaudhari <sup>2</sup>, Sunita P. Bhusare <sup>3</sup>

<sup>1</sup> Associate Professor, Department of Rasa Shastra & Bhaishajya Kalpana, RJS Ayurved Medical College and Research Centre, Kopergaon, A. Nagar, Maharashtra, India & PhD Scholar, Rasa Shastra & Bhaishajya Kalpana, Ayurved Mahavidyalaya, Sion, Mumbai, Maharashtra, India

<sup>2</sup> Professor & HOD, Department of Kayachikitsa, RJS Ayurved Medical College and Research Centre, Kopergaon, A. Nagar, Maharashtra, India & PhD Scholar, Kayachikitsa, Saptashruni Ayurved Mahavidyalaya, Nashik, Maharashtra, India

<sup>3</sup> Professor, Department of Rasa Shastra & Bhaishajya Kalpana, Rukhanimi Ayurvedic Medical College Sangamaner, A. Nagar, Maharashtra, India & PhD Scholar, Rasa Shastra & Bhaishajya Kalpana, Ayurved Mahavidyalaya, Sion, Mumbai, Maharashtra, India

Received on: 22/11/24 Accepted on: 22/12/24

\*Corresponding author

E-mail: santoshniphade@gmail.com

DOI: 10.7897/2277-4343.16129

#### ABSTRACT

Basti chikitsa is one of the distinctive bio purification methods mentioned from panchakarma chikitsa of Ayurveda. Basti is the therapeutic procedure where medicated liquid formulation is administered through anal canal. In modern terms rectal route of drug administration is Basti. The Basti formulation is prepared by mixing honey, salt, oil with water or milk-based decoction. Before administration it must ensure that the mixture should be uniform like emulsion solution. There is huge gap between finding various properties of such Basti formulation on modern parameters. Laboratory studies help to find the drug interaction, while animal studies or clinical trials will observe the varied pharmacological properties of Basti formulations. The main obstacle for use of these Basti preparations is that they must be prepared freshly every time. Also, it is hard to assure that the Basti formulation has achieved same emulsion level and possess same properties every time. There is a great need to find a way for making uniform Basti emulsion and its method of preservations. So, it can be available for long duration and can be used in emergency conditions. Here we tried to focus on the new opportunities of research for Ayurveda Basti formulations.

**Keywords:** Ayurveda, Basti, Chikitsa, Rectal Drug administration, Pharmacology.

#### INTRODUCTION

The intent of Ayurveda is to maintain the health of healthy individuals and cure the disease of sick. The diseases are categorized in two types. Diseases treated by elimination of bio-toxins from body i.e. shodhana and other are diseases treated by administration of medicines i.e. shamana<sup>1</sup>. Panchakarma is one of unique procedure of drug administration where the bio-purification of body is achieved, and toxins are eliminated through the body. Vaman, Virechana, Nasya, Niruha Basti and Raktamokshna are these five therapeutic procedures<sup>2</sup>. Basti is said to be half treatment of many diseases and is prime and more potent<sup>3</sup>. Basti is nothing but administration of drug through rectal route for body cleansing. The Basti formulation prepared by mixing honey, salt, oil and medicated decoction<sup>4</sup>. These all substances have different densities. They are hard to mix with each other and form a homogenous solution. It has to ensure that the solution should be uniform like emulsion before administration of Basti.

There are fewer studies have conducted till date to find the biochemical, physiochemical properties and precise pharmacology of these Basti drug formulations. Laboratory studies can be conducted to find such properties. Experimental studies like animal and clinical trials will help to find the exact pharmacodynamics and pharmacokinetics of these formulations. The main barrier to use Basti dravya formulations is that it must

be prepared freshly every time. It is time consuming and hard to prepare homogenous emulsion every time. It is a good opportunity for researchers to find a way of preservative methods for Basti dravya formulations for long duration. So, it can be used easily and in emergency conditions also. A good way to make availability of these preparations at a large scale in market is to develop tetra packs. All these needs extensive research activities.

#### DISCUSSION

Ayurveda has two modalities of treatment shodhana and shamana. i.e. purification and pacification of doshas (meta physiological humors). For purification or cleansing purpose, the Panchakarma therapies are used. These five procedures namely Vamana, Virechana, Nasya, Niruha Basti and Raktamokshana are called as Panchakarma. Out of these Basti is glorified as a half treatment of disease. When the drug is administered through anal canal, stays in colon for a certain period and draws waste substances or bio toxins from all over the body and remove with feces is called Basti.

**Types of Basti:** There are many types of Basti are elaborated in classical texts, according to the site of administration, drugs used, amount of Basti dravya and the action of drug toward body. These all Basti falls under two categories. One is the medium used for Basti formulation and second is the number of Basti administered.<sup>5</sup>

**According to the Medium used for Basti Formulation:** It has two types. Anuvasana and Niruha, where different mediums are used.

**Anuvasana Basti:** The viscous substances like oil, ghee (clarified butter) fat is uniformly mixed with salt and the concoction is administered. There are three types of Anuvasana Basti according to the amount of concoction used.

**Sneha Basti:** Maximum quantity of concoction i.e. six pala or 240 ml is used.

**Anuvasana Basti:** Half amount of Sneha Basti i.e. 3 pala or 120 ml.

**Matra Basti:** Half amount of Anuvasana i.e. 1 ½ pala or 60 ml. Retention time of Anuvasana Basti is three yama or 12 hours<sup>6</sup>.

**Niruha Basti:** Decoction of medicated drugs is prepared by using water or milk as a medium. The Basti formulation is prepared by mixing honey, salt and oil. Then the decoction and paste of some medicines is added gently to make homogenous mixture. The amount of Niruha Basti is 24 pala or 960 ml. Retention time is 1 muhurta or 48 minutes.<sup>7</sup>

#### According to the Number of Basti administered<sup>8</sup>

**Karma Basti:** The number of Basti administered are 30. Starting with Anuvasana followed by Niruha and then alternate Anuvasana -Niruha ended with 5 Anuvasana Basti.

**Kala Basti:** Total 16 Basti are given. Started with Anuvasana then alternate Niruha –Anuvasana and last 3 Anuvasana Basti are administered.

**Yoga Basti:** 8 Basti are administered. First Anuvasana followed by alternate use of Niruha- Anuvasana and last with 1 Anuvasana.

**Preservation of Basti formulation:** The Basti formulation must be prepared fresh every time before administration. It is time consuming and meticulous to make the formulation homogenous emulsion every time. It makes hard to use rectal route of drug administration in emergency condition. This is always challenging to preserve the decoction type of Niruha Basti formulations. Comparatively oil or viscous substances are used in Anuvasana Basti, so it easier to preserve this formulation for long duration.

**Understanding Ayurveda Concept of Basti Pharmacology:** The Basti is administered through guda or anus and sited at pakwashaya i.e. colon. According to Charaka after administration of Basti the formulation is reaches up to umbilicus/nabhi, pelvic region / kati, kukshi-parshwa/flanks then mix with mala/ feces and doshas. It retains there for one muhurta i.e. 45 minutes and then expelled out with feces and vitiated doshas. The virya (potential form of drug) reaches to all over body through different channels/strotasas and exerts its action. As Basti does not eliminate doshas from colon only, but from whole body thus it has more systemic effect rather than local action.<sup>9,10</sup>

**Understanding Modern Pharmacology for Basti Formulation:** Pharmacodynamics is how drug reacts to body and pharmacokinetics is how body reacts to drug. This concept of pharmacology is not much more explored in Ayurveda.<sup>11,12</sup>

**Pharmacodynamics:** The biochemical and physiological properties depend on the ingredients used for Basti formulation. pH of intestine is alkaline, so the alkaline pH of Basti formulation

facilitates its absorption. The Basti formulation has different density substances. The osmolets per liter will determine the osmolality of emulsion. It will help to find the rate of absorption per liter for Basti formulation. Active principle of drugs has different properties and the Basti formulation shows its cumulative effect. The formulation is absorbed in rectum and colon and shows their desired action by reaching to targeted cells.

#### Pharmacokinetics

**Absorption:** The epithelial cell of large intestine is made up of lipid. So, the lipophilic substances get absorbed more easily in the colon. Basti consist of lipid substances so get absorbed in large intestine.

**Distribution:** The Basti drugs absorbed in colon reaches to the circulation and get extends up to target cells. Where drug binds to target cell receptors and achieve desired action of Basti.

**Metabolism:** As the Basti formulation is administered through rectal route, it bypasses first pass mechanism or metabolism in liver and provide more bio availability of Basti formulation.<sup>13</sup>

**Excretion:** Most of the drug is eliminated directly through anus with faces and part of drugs get excreted with urine.

Ayurveda has its own terms and mechanism for understanding the concept of pharmacology. In the process of understanding modern concepts of pharmacology for Basti formulation we have noticed some lacunas.

**pH:** pH of the intestine is alkaline. Absorption of medicine is better when it will have alkaline pH. The water, milk, meat soup or some time cow urine is added in Basti formulation. The pH of all these formulations will defer. So, there is fine scope to find the pH of Basti formulation to determine the rate of absorption of medicines.

**Osmolarity:** Different density substances are used to formulate Basti emulsion. If the osmolarity of solution will be determined, it will ensure the homogeneity of emulsion at every single time of use. Also, it will facilitate the rate of absorption and get desired effect and potency of Basti formulation.

**Absorption:** Lipophilic drugs are more absorbed in intestine. So, the Anuvasana type of Basti where the lipid substances like oil, ghee etc. are used will get easily absorbed. But in case of a Niruha Basti, we must find the mechanism of absorption for water soluble drugs used. There is great scope to notice the absorption of lipophilic and hydrophilic medicines present in the formulation at different site of intestine like colon, rectum and anal canal.

**Electrolyte balance:** Need to understand the presence and absorption of electrolytes in intestine for Basti formulation. Volume of body fluid is dependent on presence of electrolytes. It will help to determine the effect of Basti formulation over fluid or plasma level of body.

**Distribution:** The Basti formulation is absorbed in Intestine reaches into circulation and get distributed all over body. So, the Basti formulation shows not only local but systemic effect also.

**Metabolism:** Superior rectal vein drains the upper part of rectum. This superior rectal vein drains into portal vein. Portal vein reaches to liver. If the Basti is reached up to or above upper rectum, the drug is taken to liver for first metabolism and might reduce the bio availability of drug administered. The lower part of rectum is drain by inferior and middle rectal vein. These veins

drain into inferior vena cava. So here the first pass mechanism is avoided, and drug reaches directly into the circulation. With this we get more bio availability of drug which is the main motto of rectal drug administration.

**Gut Microbiota:** Human colon is rich in microorganisms which help for digestion and absorption. These gut microbes convert the substances into short chain fatty acids/ SCFA. These SCFAs produce energy and provide immunity. There is need to find the action of Basti formulation on these gut microbiotas. Correlation between the number of Basti administered and microbes present at the intestine.

**Vitamin synthesis:** Vitamin K and B group are synthesized at large intestine by the gut microbes present there. Vitamin K is necessary for blood clotting mechanism and B is necessary for the formation and regeneration of Nerves. So, it must find the action of Basti formulation on vitamin synthesis.

**Enteric Nervous System/ ENS:** The ENS work in correlation with Central Nervous System/ CNS. There is need to study the mechanical and biochemical action of stimulus towards ENS in case of Basti administration. It will help to develop the administration of CNS stimulating drugs when required in large quantity and in unconscious patients.

**Excretion:** As some drug reaches to liver and some by passes liver the exact mode of excretion of drug through bile has to be studied and whether water soluble drugs are eliminated through kidneys has to be studied.

#### Preservation of Basti Formulation

If the preservation methods are used for Basti formulation the homogenous emulsion will get administered at every single time of use. It will ensure the proper dose, rate of absorption and help to achieve desired extent of drug action. It can be used in emergency condition where needed. The use of tetra packs for easy availability and ready to use form can be made for Basti formulations.

#### CONCLUSION

From the above discussion we can say that there is substantial need of pharmacological research for Ayurveda Basti formulation. There is fine scope to find the pH and osmolarity of Basti formulation to determine the rate of absorption of medicines. To understand the local and systemic action of Basti, absorption and distribution of Basti formulation has to be studied deeply. There is a scope for research to find the definite metabolism and its association with bio availability and first pass mechanism. There is significant need of finding the relationship between effect of Basti formulation over the action of gut microbiota and synthesis of vitamin K and B according to the medium used and the numbers of Basti administered. Researchers can notice the difference of pharmacology when the different numbers of Bastis are administered like in Karma-30, Kala-16 and Yog Basti-8. Researchers can find the correlation between effect of Basti formulation over enteric nervous system and stimulation of central nervous system. The excretion through bile in feces and from urine through kidney can be studied. To reduce

the time of preparation of fresh Basti formulation each time by developing preservation methods for it. Various methods of availability of such preserved formulation need to try and test. Use of tetra packs need to be studied at large scale.

From above discussion we can conclude that there is great opportunity for extensive laboratory and clinical research to realize the definite pharmacology of Basti formulation so the Basti half treatment regimen of disease can be used at large scale.

#### REFERENCES

1. Dr. Ganesh Krushna Garde, SarthVagbhata, Reprint 2005 Anamol Prakashan Pune, Sutrashatana 14/04, P 63.
2. Dr. Ganesh Krushna Garde, SarthVagbhata, Reprint 2005 Anamol Prakashan Pune, Sutrashatana 14/05, P 64.
3. Acharya Vidyadhar Shukla, Prof. Ravi Dutt Tripathi, Charak samhita of Agnivesha, elaborated by Charaka, redacted by Dridhbala, Volume 2, Reprint 2022, Chaukhamba Sanskrit Pratishthan New Delhi, Sidhhisthnam 1/39 p 883.
4. Dr. Ganesh Krushna Garde, SarthVagbhata Reprint 2005, Anamol Prakashan Pune, Sutrashatana 19/45, P 82.
5. Vaidya Haridas Shridhar Kasture, Ayurvediya Panchakrma Vidnyana, Reprint 2006, Shree Baidyanath Ayurved Bhavan Private Limited Nagpur, Chapter 6 P 373-384.
6. Acharya Vidyadhar Shukla, Prof. Ravi Dutt Tripathi, Charaka Samhita of Agnivesha, elaborated by Charaka, redacted by Dridhbala, Volume 2, Reprint 2022, Chaukhamba Sanskrit Pratishthan New Delhi, Sidhhisthanam 1/46 p 884.
7. Dr. Ganesh Krushna Garde, SarthVagbhata Reprint 2005 Anmol Prakashan Pune, Sutrashatana 19/44 to 47, P 82.
8. Acharya Vidyadhar Shukla, Prof. Ravi Dutt Tripathi, Charaka Samhita of Agnivesha, elaborated by Charaka, redacted by Dridhbala, Volume 2, Reprint 2022, Chaukhamba Sanskrit Pratishthan New Delhi, Sidhhisthanam 1/47,48 p 884.
9. Deepa Chaturvedi, Mamta Nakade. A Critical Review on Basti- An Ardha Chikitsa, Asian Pacific Journal of Health Science 2022;9(4):137-139.
10. Rohan Agalcha, Kshipra Rajoria Sarvesh Kumar Singh, Nivedita Sitpal, Critical Analysis on Action of Basti: A Review. Research and Review –A Journal of Ayurvedic Science, Yoga & Naturopathy 2022;9(3):32 - 36.
11. Harshamali KADT, Tharangani WAS. Critical review on Broad Spectrum Action of Vasti Karma- A Literary study. Ayushdhara July –August 2023;10(4):7-17
12. Hua S, Physiological and pharmaceutical consideration for rectal drug formulations. Front Pharmacol. 2019Oct16;10:1196. DOI:10.3389/fphar.2019.01196. PMID 31680970
13. Timothy F. Herman, Cynthia Santos. First Pass Effect. November 3, 2023, Bookshelf ID: NBK551679 PMID: 31869143 cited 10 December 2024 Available from <https://www.ncbi.nlm.nih.gov/books/NBK551679/>

#### Cite this article as:

Santosh R. Niphade, Varsharani A. Chaudhari and Sunita P. Bhusare. Opportunities for Research in Basti Chikitsa: A Critical Review. Int. J. Res. Ayurveda Pharm. 2025;16(1):153-155  
DOI: <http://dx.doi.org/10.7897/2277-4343.16129>

Source of support: Nil, Conflict of interest: None Declared

Disclaimer: IJRAP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publishing quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJRAP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of the IJRAP editor or editorial board members.