

AYURVEDA EXPLORATION OF PHARMACOKINETICS OF SNEHA BASTI - A REVIEW ARTICLE

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ABSTRACT

Pharmacology is concerned with the movement of drugs within the body. The oral ingestion of lipids/fats get converted into lipoproteins; further utilised in different forms at various needs of life and excreted in excess. In *Basti karmukata* (action of *Basti*) it is rightly said that the action is achieved with the *Virya* and *prabhava*. In this way *Basti* reaches all over the body, churns the *dosha sanghata* (bonded humours) and eliminate the vitiated *doshas* from the body. The exact mechanism through which the benefits are obtained is yet to be ascertained with the help of contemporary science. It is also not clear that when *Sneha Basti* is administered the active principles in the formulation gain entry in to the systemic circulation or not. With these concepts of different conventional methods of intervention, an attempt is made to understand the pharmacokinetics of *Sneha Basti*.

Keywords: *Sneha Basti*, Lipid metabolism, Pharmacokinetics

INTRODUCTION

Lipid metabolism is the break down or storage of fats for energy; these fats are obtained from the regular diet. When a lipid is ingested minimal or no digestion is seen in mouth, some amount of lipid is acted upon by stomach enzymes, whereas maximum digestion of lipids takes place in small intestine with the help of bile salts, pancreatic enzymes and intestinal lipase¹

Basti is that which does both *Shodhana* (cleansing) and *Shamana Kriya* (alleviates). The disease present anywhere in the body gets cured even though the medicines are administered through anal route².

With this concept we can understand that *gudagata sneha Basti* is absorbed and circulated all over the body.

There are research studies which have proved the presence of active principles of *Basti dravya* in blood after a stipulated time³. But there is no/less research works about the presence of *sneha amsha* (unctuous substance) in the body after *sneha basti* treatment. A research study has stated⁴ that the body gets oiled when *sneha* is administered through anal route and can be an alternative method of administration for *Snehapana* (oral intake of oleagi-

nous substances). With these evidences this is an attempt made to understand the pharmacokinetics of *Sneha Basti*.

MODE OF ABSORPTION OF SNEHA BASTI

01. CLASSICAL APPROACH TOWARDS THE ABSORPTION OF BASTI:

A. The *Basti* when administered first reaches the rectum then the intestine (*Pakwashaya*). *Pakwashaya* extends from *Grahani* (duodenum) to *Guda Moola sthana of Pureeshavaha srotas* are *pakwashaya* and *sthulguda*. *Grahani* is nothing but the *pitta dhara kala*, *pitta dhara kala* is not different from *majjadhara kala*, in the same way *pureeshadhara kala* is not different from *asthidhara kala*. This shows that *basti* has direct effect on *asthi* and *majja Dhatu*⁵.

B. Absorption through *Dhamani/sira* (Arteries/Veins) :

Nabhi (umbilicus) divides the body into two parts. *Nabhi* is the *moola sthana* of *Dhamani* and *Sira*. Among 24 *Dhamanis*, 10 supplies above the umbilicus, 10 supplies below umbilicus, last 4 go in *Tiryak marga* and they split again as innumerable. Thus spread throughout the body as a network⁶. This shows that the *basti dravya* when reaches *Nabhi pradesha* spreads all over the body as well as the affected site and thus disease is relieved.

C. *Sneha basti is tridosha shamaka*:

If *vata dosha* is vitiated, 9-11 *Sneha basti* is advised, *pitta dosha* 5-7 *Sneha basti* and *Kapha dosha* 1-3 *ayugma* (odd number) *Sneha basti* should be administered⁷. 1 or 2 *Sneha Basti* becomes insufficient in depletion of disease, probable reason may be that *vata* owns the properties of *Ruksha* (dryness), *laghu* (lightness), *sheeta* (cold), *khara* (roughness) when it is in *pravrudhaavastha* (aggravated); one or 2 *Sneha basti* will not be beneficial to reach the severity. Therefore there is a need of maximum 11 *basti* to relieve the *vata dosha* situated wherever in the body.

D. *Basti vyapat (complications) in Sneha Basti*:

When we observe the symptoms produced by the *basti vyapat*⁸ it is either *sthanika* or *saarva daihika*. In *Vata avruta Sneha basti* there is a symptom-*jwara* (fever)⁹ seen because of *agni mandya* (lack of appetite). This shows that *basti* is acted upon by the *agni* (digestive fire). When *agni* fails to metabolise the lipid leads to disease. Thus it can be concluded that even the rectal administration of *basti* travels all over the body after coming in contact of *agni*.

02. CONTEMPORARY APPROACH TOWARDS THE ABSORPTION OF SNEHA-BASTI:

In allied science rectal mucosal route is preferred for systemic effects if other routes are not advisable. Rectal administration provides rapid absorption of drugs and becomes an easy alternative to the intravenous route, advantage is relatively painless. The rate of rectal Trans mucosal absorption depends on the following factors¹⁰

01. Formulation
02. Volume of liquid
03. Concentration of drug
04. Length of catheter
05. Presence of stool in the rectal vault etc

Drugs administered high in the rectum (drained by the superior rectal veins) are usually carried directly to the liver, and thus, are subjected to metabolism. Drugs administered low in the rectum are delivered systematically in the inferior and middle rectal veins before passing through the liver. This gives an idea in clinical implications of rectal venous drainage for absorption and metabolism of any drug used in *Basti*.

The volume mostly controls the retention of *basti* inside the lumen. The standard dose of *Niruha Basti* is more in quantity where as *Sneha basti* are designed to be less in quantity to retain in the body for at least 3 Yama (9 hours).

Concentration or pH of the oil/ghee/fat also plays an important role in the retention and absorption of *Basti*. Highly concentrated medications are quickly evacuated, this may be the reason that the soup water enemas do not retain for longer in the body and are evacuated with the stool to attain the cleansing action of the intestine. Therefore the *Sneha basti* which are sticky by nature retain in the intestine which may probably activate the nerve endings and is absorbed by the plasma/ mucosal layers.

Length of the catheter is another aspect to consider for the healthy absorption of oil enema. High up insertion may fail to allow the *basti* to be in rectum for some time. It may cause ill effects on the body. Therefore in texts there is well mention about the size and length of catheter to have the beneficial effects of *basti*.

DISCUSSION

Ghruta (ghee), *taila* (oil), *vasa* (muscle fat) *majja* (bone marrow) are used both in the *Niruha* and *Sneha basti*. For absorption and digestion of *sneha* generally bile, gastric lipase, pancreatic lipase, etc are necessary. *Chakrapani* has solved this by stating that fat adhered to the colon is acted upon by *agni* located above the colon while it exudates to the exterior. This is specially inkling about presence of some factors of digestion there which is not yet discovered¹¹ Short chain and medium chain fatty acids are present in *ghruta*, *dugdha* (milk) and natural oils. These fatty acids are absorbed through the wall of the colon as they do not require bile salt or pancreatic lipase or micelle formulation for absorption.

There is another concept of first pass metabolism, a phenomenon of drug metabolism whereby the concentration of a drug is greatly reduced before it reaches the systemic circulation^{12,13} It is the fraction of drug lost during the process of absorption which is generally related to the liver and gut wall. Alternative routes of administration like suppository, intravenous, intramuscular, inhalational aerosol, transdermal and sublingual avoid the first-pass effect because

they allow drugs to be absorbed directly into the systemic circulation.

In the recent advancements the Gut Brain theory¹⁴ has evolved which has the action of receptors. The gastrointestinal system has a network of nerve fibres, which is known as 'Enteric nervous system' (ENS). Similar to brain ENS sends and receives impulses, record experiences and responds to various stimuli. Gut brain possess n number of neurotransmitters. ENS is loosely connected with central nervous system (CNS) through vagus nerve and can mostly function alone, without instruction from top.

Thus ENS works in synergism with the CNS. Stimulation by the *Basti* (either by chemo or mechano receptors) may lead to activation of concerned part of CNS which precipitates result accordingly. There is close resemblance in the functioning of *Vata Dosha* and nervous system. *Sneha Basti* is prescribed as the best remedy for *Vata*. It again validates the efficacy of *Basti karma* on nervous system.

CONCLUSION

Basti by eliminating morbid content from the large intestine will definitely put a positive impact on the other system of body also. Intervention is either oral or anal there is absorption of administered drugs. As main site for *vata dosha* is *pakwashaya*, better management can be done through nearer route by *Sneha basti*. Thus the absorption mechanism dealt till gives a hint about probable metabolism and absorption of the drugs via rectal route also.

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