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A conceptual review of *Matra Basti* in children w.s.r. to Cerebral Palsy

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ABSTRACT

Vata is the chief controller among the causative factors of disease and *Pakwashaya* (Intestine) has been considered *Vata's* seat. *Basti Karma* is the best treatment modality in dealing with *Vata Vikara* and other *Vata* dominant *Vikara* (disorders) as *Sneha* is the best *Dravya* to control *Vata*. *Matra Basti*, a type of *Sneha Basti*, is considered safe and effective and can be given to children safely. Cerebral palsy (CP) is one of the major challenges with no treatment so far. *Ayurveda* is proving quite promising in improving the quality of life among children with CP. In such conditions, it is need of time to standardize and understand different procedures which can be applied in the management of cerebral palsy. The present study constitutes the probable mode of action of *Matra Basti* in general and w.s.r. to CP in particular and also considers the optimum dose as per age of the child.

Key words: Cerebral palsy, *Matra Basti*, *Vatayadhi*, *Panchkarma*, *Ayurveda*

INTRODUCTION

Basti Karma is the best method of treatment in dealing with *Vata Vikara* and other *Vata* dominating *Vikaras* as *Vata* being the chief controller among the causative forces of disease.^[1] *Pakwashaya* (Intestine) is considered the seat of *Vata*. Direct application of this kind of treatment to *Pakwashaya* helps for the proper regulation and coordination of the functions of *Vata Dosha* not only in its own site but also control the related *Doshas* which are involved in the pathogenesis of disease.^[2] Hence, it is considered as

one of the appropriate treatments for *Vata* predominant disease and is also called as the *Ardhachikitsa*.^[3] *Kashyapa* equated *Basti Karma* as '*Amrutam*', because of its wide application even in both infants and in old age.^[4] *Basti's* area of effect is the complete body and its main seat of action is *Pakvashaya*.^[5]

Action of the *Basti*

Basti increases *Bala*, *Agni*, *Medha*, *Varna*, etc. It strengthens the body, prolongs life, removes *Dosha* from all over the body, and thus pacifies all ailments; it is beneficial in all age groups from childhood to old age.^[6] *Basti* is a supreme treatment and incomparable to other treatments when it comes to the treatment of *Marma* i.e., vital points of the body. *Charaka Samhita* states that *Basti*, when introduced in the *Pakvashaya*, shows its effect on all systems of the body and expels out the *Doshas* from the body like the sun vaporizes water present on earth.^[7] It effectively pacifies diseases associated with *Vata Dosha*, by providing better bio availability of drug used of *Basti* procedure.^[8]

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Indication of *Basti* in Children

Basti provides prompt power; hence it is the ultimate treatment, specifically in children and old age person, it does not cause any complication in this age group as compared to other procedures like *Virechana Karma*.^[9] *Kashyapa* equated *Basti Karma* as '*Amritam*', because of its wide application even in both infants and in old age.^[10] This can be given in *Shishu* who can walk on the ground (*Adhastano*) & one who can eat cereals (*Annabhokthacha*).^[11] It is praised as '*Sarvarthakari* & *Niratyaya* for *Shishu* & *Vridhdha*.^[12]

Matra Basti

It is a type of *Sneha Basti*. It is termed so because the dose of *Sneha* used in it is very less compared to the dose of *Sneha Basti*.^[13] *Sneha* is the best *Dravya* to control *Vata*. *Sneha* contains *Guru Snigdha* properties that are opposite to the qualities of *Vata*. So, according to *Samanya Visheshha Siddhanta* it pacifies *Vata*. Therefore, *Sneha Basti* is the most specific *Basti Karma* for *Vata Vyadhi*.^[14]

Derivation of word *Matra Basti*

The term *Matra Basti* consists of two conjoint words: *Matra* and *Basti*. The word '*Matra*' is used in many contexts with different meanings such as measures of any kind, quantity, size, duration, number, degree, unit of time and movement. It is also defined as an instant i.e., the length of time to pronounce a short vowel. In this context, *Matra* is considered for the unit of measure i.e., *Basti Dravya* quantity as per *Arundutta*, "*Matra Shabdasthara Pramanarthaha*.^[15]

Properties of *Matra Basti*

According to *Charaka Samhita*, it is said to be *Balya* (strengthening) *Srustapuresha* (cleans bowels), *Brimhana* (provides nutrition), and *Vatarogahara* (cures *Vata* disease).^[16] *Ashtanga Sangraha* also had a similar opinion; they stated it as *Varnya* (good for skin) and *Doshaghna* (pacifies *Dosha*). Commentator *Hemadri*, commenting on the word *Sukha* says, it is devoid of complication.^[17]

Indications

Table 1: Indication of *Matra Basti*^[18]

SN	Indications	Ch.	A.H.	A.S.
1.	<i>Karma karshita</i>	+	-	-
2.	<i>Bharakarshita</i>	+	+	+
3.	<i>Adhvakarshita</i>	+	+	+
4.	<i>Vyayamakarshita</i>	+	+	+
5.	<i>Vyanakarshita</i>	+	-	+
6.	<i>Strikarshita</i>	+	+	+
7.	<i>Durbala</i>	+	+	+
8.	<i>Vatarogi</i>	+	+	+
9.	<i>Bala</i>	-	+	+
10.	<i>Vridhdha</i>	-	+	+
11.	<i>Chintatur</i>	-	+	+
12.	<i>Stri</i>	-	-	+
13.	<i>Nripa</i>	-	+	+
14.	<i>Sukumar</i>	-	-	+
15.	<i>Alpagni</i>	-	+	+
16.	<i>Sukhatma</i>	-	+	-

('+' signifies : it is an indication of *Matra Basti* in the particular text, '-' signifies : it is not an indication of *Matra Basti* in the particular text)

Out of these following properties *Vatahara* property was considered for taking *Matra Basti* as a procedure in the present trial. As *Charaka* has described that *Matra Basti* acts according to the properties of the content apart from being *Vatahara*. Hence, drug with content effective on the nervous system was taken in the study.^[19]

Contraindications

In classics, there are no major contraindications

mentioned for *Matra Basti*, but *Ashtanga Samgraha* has stated that *Matra Basti* should not be administered in persons having *Ajirna*.^[20]

Dose of *Matra Basti*

According to *Vagbhata*, *Matra Basti* is recommended in a dose equal to the dose of *Hrsva Snehapana*. The *Matra*, which gets digested in 2 *Yama* i.e., 6 hours, is called as *Hrsva Matra* of *Snehapana*,^[21] but the dose required to get digested in 2 *Yama* is not mentioned.^[22] *Acharya Sushruta* has given the dose as ½ of the dose of *Anuvasana Basti* and according to him the dose of *Anuvasana Basti* is half as compared that of *Sneha Basti*. While *Sneha Basti*'s dose is one-fourth of *Niruha Basti* i.e., 6 *Pala* (24 *Tola*) hence according to *Dalhana* its *Matra* is 6 *Tola* i.e., 1½ *Pala*.^[23] But according to *Kashyapa* the *Matra* of *Sneha* in *Matra Basti* is 2 *Pala* as *Uttama*, 1½ *Pala* as *Madhyama* and 1 *Prakuncha* as *Hrsva Matra*. He further says that half *Pala* of *Sneha* can be given in a newborn baby, and it can be administered without any hesitation and complications.^[24] *Chakrapani* advised *Sneha Pramana* for *Matra Basti* as 1½ *Pala*.^[25] But, *Acharya Sharangadhara* has mentioned the *Matra* as 2 *Pala* (8 *Tola*).^[26] In *Charak Samhita* age wise dose of *Niruha Basti* is given.^[27] Hence to compile up the dose of *Matra Basti* varies according to age is shown in the table which was taken in the study.

Table 2: Dose of *Matra Basti* according to Age

Age in Years	Dose in <i>Tola</i>	Dose in ml. ^[28]
01	1	12
02	2	24
03	3	36
04	4	48
05	5	60
06	6	72
07	7	84

08	8	96
09	9	104
10	10	120
11	11	132
12	12	156
13	14	168
14	16	192
15	18	216
16	20	240
17	22	264
18	24	288

Procedure of *Matra Basti*

Before the administration of *Basti*, it is confirmed that the patient had taken *Laghuahara* (light food) and is advised to pass urine and stools.^[29] After that, the patient is instructed to lie over the *Basti Karma* table in the left lateral position keeping his body in a straight line i.e., without bending. The patient is asked to pillow himself with his left hand and to flex the right limb resting on the extended left knee. Then anal orifice was smeared with oil for lubrication. Then the Medicated Oil is taken in a 50ml syringe removing air bubbles in it. Then it is connected to a rubber catheter with oil smeared on its top. The catheter is gently inserted about 4 *Angula* (about 4 centimeters) into the rectum following the vertebral column. The *Bastidravaya* was gently pushed into the colon. The patient was instructed to take deep breaths through his open mouth. Complete drug from the syringe should not be administered into the patient's colon otherwise air may enter along with it into the colon. Following this, the patient is instructed to be in a supine posture for some time. As *Matra Basti* does not produce any complications and does not have any restrictions in *Ahara* and *Vihara* (food or day-to-day work). There is no *Samsarjana Karma* (dietary

restrictions). The patients are advised to take normal food and perform their routine duties.

Retention of Matra Basti

The normal *Pratyagamana Kala* (time taken by the *Basti* drug to come back out of the rectum) of *Sneha Basti* is 3 *Yama* i.e., 9 hours. Being a type of *Sneha Basti*, the *Pratyagamana Kala* of *Matra Basti* is also 3 *Yama* i.e., 9 hours. There is no harm if *Matra Basti* retains in the body because, while describing *Anuvasana Basti* it has been said that it is not harmful to the body even in the event of its being retained in the body for the whole day. Also, the dose of *Sneha* in *Matra Basti* is very small, which can get easily absorbed in the body without coming out.^[30]

Probable mode of action of Matra Basti^[31]

1. By absorption mechanism

In the rectum, there is an abundant supply of blood as well as lymph, and drugs can penetrate the mucosa, just like any other layer of lipid.

So, it quickly absorbs unionized and lipid-soluble substances.

Due to their water-soluble nature, Short chain fatty acids, need not convert into triglycerides and thus are directly absorbed into portal blood circulation because of diffusion from epithelial cells directly into villi capillaries.

As the *Anuvasana Basti* stays for more time in the colon so the chances of absorption are more. *Anuvasana Basti* stimulates the release of bile from the gall bladder and this causes conjugate micelles formation which are then absorbed through the process of passive diffusion, this happens more specifically to the *Sneha* of *Anuvasana* which has short chain fatty acids.

2. By neural stimulation mechanism - Regulating the Gut Brain

In 1981, Wood J. described the nervous system of the gastrointestinal tract i.e., Enteric Nervous System (ENS) as The Brain of the Gut that integrates information received and issues an appropriate response.^[32] Like the brain, A number of stimuli are

sent and received by the Enteric Nervous System, experiences are registered, and reactions are produced by it. The location of the ENS is in the tissue sheath lining from the esophagus to the colon. This network of neurons is regarded as a whole entity by experts, and it contains neurotransmitters and proteins that exchange messages and regulate body function, just like the brain itself, as well as a complex circle that allows for independent action, learning, memory, and gut feeling.

A hundred million neurons are present in the gut, which is more than the number found in the spinal cord. A number of major neurotransmitters are found in the gut, including serotonin, dopamine, glutamate, norepinephrine, and nitric oxide. Also, the Gut has around two dozen neuropeptides and major cells of the immune system are also present. Signals are sent from the brain to the gut via 'command neurons,' which in turn send signals to the gut interneuron. The mesenteric plexus and submucosal plexus are the two layers of gut tissue that contain command neurons and interneurons.

As part of the synergism between the ENS and the brain, command neurons control the pattern of activity. So, it may be possible to activate the concerned part of the CNS by *Basti* (either by chemo or mechanic receptors). A close similarity exists between the *Vata Dosha* and the nervous system, *Basti* is recommended as the best remedy to treat *Vata* disorders, this is yet another confirmation of the effectiveness of *Basti* on the nervous system.

Changes after administration of Basti & Effect on the nervous system^[33]

An increase in the fatty acid & protein content is shown by bio-chemical investigations subsequent to the administration of *Sneha Basti*. When *Basti* is administered, pyruvic acid levels decline, resulting in higher vitamin B12 levels. The lower the level of B12 in the body, the greater the chance of myelin degeneration, neurological disorders, and digestive problems. This clarifies the rationale behind *Basti's* treatment of neuromuscular disorders. Numerous bacterial floras in the colon benefit the body by

manufacturing certain B vitamin and vitamin K components. Researchers have found that this flora grows abundantly under *Sneha Basti's* management; perhaps this creates an environment that is conducive to their development. The hypothalamus pituitary adrenal axis and autonomic nervous system are activated as a result of visceral afferent stimulation, releasing neurotransmitters and hormones. *Anuvasana & Matra Basti* have got the property to regulate the sympathetic activity, decrease adrenaline & noradrenaline secretion & help in the balance of the autonomic nervous system.

CONCLUSION

Matra Basti is a safe and effective treatment modality for *Vata* disorders and can be effectively used among children. Classical *Basti Netra* can be replaced with a catheter and syringe among children with no difference in the result. Different types of medicinal *Tail* to be used for different ailments and dose per age need to be standardized with multi-centric clinical studies.

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