



POST-STROKE DEPRESSION AND ITS MANAGEMENT BY BASTI THERAPY: AN OVERVIEW

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ABSTRACT:

A stroke is defined as a sudden disruption in blood flow to the brain, which causes thrombotic, embolic, or hemorrhagic events that permanently damage brain tissue. Mood depression is a common and significant side effect of a stroke. Epidemiological studies have shown that more than 30% of stroke patients experience depression, either immediately or later after the stroke. The phrase "*Niyantah praneta cha manasa*" is used in Ayurvedic writings to indicate that *vata* is the controller of *manas*. Both the *pakshaghata* (stroke) and the *avasada* (depression) caused by *vata* dosha vitiation fall under the category of *vataja vyadhis* in Post-stroke depression. Acharya Charaka stated in "*Bastih Vataharanam*" that *basti* is the most effective *vata* dosha remedy. The *Basti* drug first reaches *Pakvashaya*, the *Vata dosha's* main site. Thus, by acting on the primary site, *Basti* gains control of *Vata* throughout the body.

Keywords: *Pakshaghata*, Depression, Medical enema, *Manas*.

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INTRODUCTION:

Post-stroke depression (PSD) has been noticed by psychiatrists for more than 100 years, although controlled systematic investigations did not begin until the 1970s. Cerebrovascular illness is connected with depression, anxiety disorder, apathy, cognitive dysfunction, mania, psychosis, pathological affective display, catastrophic reactions, exhaustion, and anosognosia. Researchers such as Martin Roth^[1], who demonstrated the link between atherosclerotic disease and depression, conducted the first empirical studies of post-stroke depression (PSD) as well as Folstein et al^[2], who discovered that depression was significantly more common in stroke patients than in patients with comparable physical impairments due to orthopaedic injuries. One-third of stroke survivors experience post-stroke depression. The rate is highest in the first year, accounting for nearly one-third of all stroke survivors, and then begins to decline.

In numerous individual studies and meta-analyses, the prevalence of PSD has been estimated to range from 20% to 65%^[3]. Post-stroke depression (PSD) is common and is associated with an increased risk of death, a slower recovery, more severe cognitive deficits, and a lower quality of life than stroke without depression^[4]. PSD diagnosis is challenging in both acute and chronic

aftermath. As a result, it often goes undetected and/or untreated. The link between depression and stroke is extremely complex, and the pathophysiological mechanisms remain unknown, though an interaction between anatomical and psychosocial factors may play a role in PSD development.

The DSM-5 defines post-stroke mood disorders as mood disorders caused as a result of a stroke with depressive features, major depressive-like episodes, or mixed-mood features. Major or minor vascular neurocognitive disorder is the only cerebrovascular disease-specific disorder in the DSM-5. A stroke-related mood disorder requires a depressed mood or loss of interest or pleasure, as well as at least two but no more than five major depression symptoms lasting two weeks or longer^[5]. These symptoms include weight gain or loss, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness or excessive/inappropriate guilt, decreased ability to think or concentrate, and recurring thoughts of death or suicidal ideation. A minor depressive episode meets the same criteria as a major depressive episode, but only two depressive symptoms are required in addition to the core symptom of either a depressed

mood or a loss of interest or pleasure. When minor depression is taken into account, the prevalence of PSD rises to approximately half of all stroke survivors [6].

Although the pathogenesis of *Pakshaghata* has been discussed in *Ayurvedic* literature, there is no direct description of how emotional changes manifest in *Pakshaghata*. However, the manifestation of emotional changes in these can be synthesised from the various references. *Pakshaghata* is a *Vataja Vikara*, and *Vata Dosha* is important in psychological well-beings like *Utsaha* [7], as well as *Manas* proper functioning [8]. *Apraharsha* and *Mudhasangyata* are vitiated *Vata* manifestations [9]. Furthermore, some sources discuss the presence of somatic diseases in psychological illness and vice versa [10]. All of these references contribute to our understanding of the prevalence of depression in post-stroke patients [11].

Emotional disturbances are not visible and thus go unnoticed by busy clinicians. Their phenomenology, risk factors, and pathophysiology have received little attention [12]. PSD is associated with *Pakshaghata paschata Chittaavasada*; according to *Ayurvedic* literature *Vishada* and *Avasada* are two conditions that are very similar to depression. According to *Charaka*, "*VishadoRogavardhananam*" means that

Vishada is the primary cause of the disease's deterioration. *Pakshaghata* and *Avasada* are caused by *vata dusti* and mental disturbance. According to *Acharya Charaka*, *vata* is the controller of *manas*, and in post-stroke depression, both stroke (*pakshaghata*) and depression (*avsada*) fall under *vataja vyadhis*, which are caused by *vata dosha* vitiation [13].

The treatment of *vata dosha* in *Ayurveda* is best planned by *basti chikitsa*. *Basti* has not only curative but also preventive and promotional properties. Scholars emphasise the importance of *basti* in all *Ayurvedic* texts, even referring to it as *Ardha Chikitsa* or *Sampurna Chikitsa* [14].

Basti treatment: The term *basti* is derived from the root word 'Vas Nivase'. It denotes the retention action of the therapy in its various meanings. *Basti* is so named because in ancient times, this therapy was administered using the Urinary Bladders of various animals [15]. *Basti Chikitsa* is a popular *Panchakarma* treatment modality. While moving through the *nabhi*, *kati*, *parshva*, and *kukshi pradesh*, the therapy churns the *shakrut* and *doshas* present and then properly evacuates and nourishes the body [16].

Method of administration of *Matra Basti*

Patients are advised to take a light meal, i.e., neither too much *snigdha* nor too much *ruksha* and not more than three-fourths of the

usual amount. Before administering *Basti*, *Abhyanga* with *Taila* is applied to the whole body. After that, *Swedana* is performed. After these *purvakarma*, the patient is advised to take the left lateral position with the left lower limb straight and the right lower limb bent at the knee and hip joints. The patient is advised to keep the left hand under the head. *Taila* is applied in a small amount to the anus. Sixty milliliters of lukewarm oil is drawn up in an enema syringe. A rubber catheter lubricated with *Sneha Dravya* is attached to the enema syringe. After the air is removed from the enema syringe, the rubber catheter is inserted into the patient's anus to a length of 4-5 inches. The patient is advised to take a deep breath while inserting the catheter and medication. The entire oil is not administered to avoid the entry of *vayu* into the *pakvashaya*, which can cause pain. After the administration of *Basti*, the patient is instructed to lie supine and the patient's buttocks are gently tapped and the legs are lifted a few times to raise the waist. After a while, the patient is advised to get up from the table and rest.

Effect of Basti: According to Acharya Charaka

Basti is especially beneficial to the following people:

1) Those whose limbs have stiffened and contracted, 2) Those who are lame, 3) Those

who have fractures and dislocations (*Rugna*), and 4) Those whose entire limbs are affected by the movement of various types of aggravated *Vayu*. Stroke patients experience these kinds of symptoms. *Basti* is widely regarded as the most effective treatment for *vata vyadhies*. In different types of *Basti* therapy, *Matra Basti* increases strength without requiring a strict diet and facilitates the elimination of *mala* and *mutra*. It fulfils the role of *brimhana* and cures *vatavyadhi*^[17].

Role of Vata in the Manifestation of Diseases:

The three *doshas* govern the entire physiology of the body, and when they are out of balance, they are responsible for disease manifestation. *Basti* is the only treatment that is effective in treating all of the *Tridoshas'* pathological conditions. *Vata* is the most important and powerful of the three *doshas* for the following reasons: *Pitta* and *Kapha doshas*, as well as *saptadhatu*s and *malas*, are thought to be lame. They resemble the wind-carried clouds. Similarly, the *pitta* and *kapha doshas*, as well as the *saptadhatu*s and *malas*, are controlled by the *vata dosha* in the body. Controlling *Vata* is just as important as controlling the other components of the body and mind. *Vata* maintains the entire body in its proper working state. It is responsible for all activities. It controls the *manas* and all of its activities. It

is in responsible of coordinating the *arthas* of all *indriyas*. It encourages people to speak up. It is also in charge of *sparsha* and *shravana*. It is the source of both joy and courage. It stimulates the *agni*. The fundamental cause of ailments is *vata dosha*, which causes diseases in all areas of the body (*shaka, koshta, marma pradesha, urdhwanga, and sarva ayayava*). Dislodgement is caused by *vata* or a combination of *vit, mutra, pitta, and kapha*. When *vata* becomes aggravated, the only treatment is *basti* for its *shamana*. Hence *Basti* is considered as *Ardha Chikitsa* or *Sampoorna Chikitsa*^[18].

Dr. C. Dwarkanatha proposed in the early 1960s that *Basti* therapy, through several of its medications, has a significant impact on the normal bacterial flora of the colon. It does so by influencing the rate of endogenous synthesis of vitamin B12, which is normally produced by colonic bacterial flora. This vitamin B12 may help with nerve upkeep or regeneration. According to him, it was one of the conceivable processes by which *Basti* could benefit with *Vatika* or neurological illnesses. *Basti* influences two major factors: *Vata* and *Agni*. Both are in responsibility of *Chetanavrutti* and *Dhatu's* appropriate formation. Because *Vata* is regarded to be the *Dhatu* marshaler (*Sarvasharira Dhatu*

Vyuhakara), regulating *Vata* permits all *Dhatu* to work smoothly^[19].

According to scientific evidence, the most likely mode of action is as follows:

- By absorption mechanism: *Basti*, once in the rectum and colon, causes bile secretion from the gallbladder, resulting in the formation of conjugate micelles that are absorbed via passive diffusion.
- By system biology concept: The most recent system biology concept clarifies how *Basti* can act on organ systems. According to this theory, all organs are molecularly connected. Any molecular incident undergoes transformation at the cellular level, then at the tissue level, and finally at the organ level. As a result, the effects of *Basti* on the gastrointestinal system will affect other systems and aid in the restoration of bodily internal homeostasis.
- By Nervous Stimulation Mechanism/Influence via Enteric Nervous System (ENS):

The enteric nervous system is one of the main divisions of the Autonomic nervous system and consists of a mesh-like system of neurons that governs the function of the gastrointestinal tract. The CNS and ENS

share many similarities in terms of cellular structure, neuropeptide secretion, and specific functions. The ENS contains over 500 million neurons, earning it the moniker "second brain." *Basti* may act on ENS receptors to stimulate the CNS, causing the release of necessary hormones or other chemicals. As a result, the effect of *Basti* may be associated with the "Touch & Go Theory," which causes activation of ENS receptors [20].

It is known that ENS has the unique ability to mediate reflexes independently of brain or spinal cord input. ENS includes sensory receptors, primary afferent neurons, interneurons, and motor neurons. Events controlled at least in part by ENS are diverse and include motor activity, secretion, absorption, defense responses, blood flow, and interaction with other organs. The enteric nervous system is embedded in the lining of the GIT system and begins at the esophagus and extends down to the anus. It produces a wide range of hormones and about 40 neurotransmitters (serotonin, dopamine, glutamate, norepinephrine, nitric oxide, etc.) that belong to the same classes as those in the brain. The gastrointestinal tract contains about 90% of the serotonin in the body. A deficiency or decrease in serotonin levels is directly responsible for symptoms such as depression,

aggressive behavior, anxiety, and increased sensitivity to pain [21].

DISCUSSION:

PSD is a common complication of stroke and can affect quality of life. The burden of functional impairment after stroke can increase the risk of PSD, which then leads to further impairments such as increased disability, limited social activities, delayed recovery, failure to return to work, and prolonged institutional care, thus affecting quality of life. *Acharya Charaka* cites "*Niyantah praneta cha manasa*," meaning that *vata* exerts control over *manas*, and that in post-stroke depression, both the *Pakshaghata* (stroke) and the *Avsada* (depression) fall within the realm of *vatavyadhis*, due to impairment of *vata dosha*. In *Ayurveda*, the treatment of *Vata Dosh*a is best planned through *Basti Chikitsa*. *Basti* has not only curative but also preventive and beneficial aspects. In all *Ayurvedic* texts, the importance of *Basti* is emphasised so much that it is called *Ardha Chikitsa*.

When *Vata* is controlled, it is as good as maintaining the other components of the body and mind. *Basti* has shown statistically significant improvement in HTN, *Shirahshoola*, *Anidra*, *Santapa*, *Bhrama*, *Buddhi Sanmoha* in studies, so *Basti* can be chosen as the first line of treatment for *Vata Vyadhis* [22]. The main

action of *Basti* is *Vata Nigraha*, and therefore it controls the movement of all other *doshas* that can be associated with the enteric nervous system and the gut-brain concept. *Basti* does the *poshana* of the entire *doshas* through absorption in the *pakwashaya*, just as the roots of the plant absorb nutrients from the soil and pass them on to each cell of the plant. Likewise, the *pakwashaya* absorbs nutrients from the *dravyas* with the help of the bacterial flora in the intestines. In this way, *Basti* causes *shamana*, *shodhana* and *dhatu poshana* through different modes of action. The permutation and combination of drugs used to produce *Basti dravya* may be responsible for the variable or multifactorial effects of *Basti*. Numerous behaviours, such as *doshasamshohana*, *doshashamana*, *doshasangrahana*, *vajikarana*, *brimhana*, *karhana*, and *vayahsthapana*, can be displayed by *Basti therapy*^[23].

CONCLUSION:

Currently, there are still too many questions concerning PSD and far too few answers. Important unresolved difficulties are primarily connected to appropriate diagnostic and treatment techniques. By reviewing all of the historical references, it is obvious that *Basti* has a wide range of applications in the treatment of numerous disorders, including PSD. The multi-dimensional aspect of *Basti*

makes it a unique one. Different permutations and combinations of *Basti dravyas* provide the physician with a wide range of options for treating all types of ailments in all age groups. As a result, there is no doubt about considering *Basti* as *ardha chikitsa* and also aiding in the treatment and prevention of PSD consequences.

Conflict of interest: None

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