



**REVIEW ARTICLE**

**An Appraisal of Bio-Purificatory and Therapeutic Potential of Panchakarma**

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**ABSTRACT**

Ayurveda emphasizes on three fold therapeutic management of the diseases viz; *Samshodhana* (bio-purification), *Samshamana* (pacification) and *Nidana Parivarjana* (avoiding causative factors). *Panchakarma* is the therapeutic technology of *Samsodhana*. It presents a unique preventive as well as therapeutic approach in Ayurvedic system of medicine with specially designed five procedures used for internal bio-purification of body through the nearest possible route. Five procedures of *Panchakarma* include *Vamana* (therapeutic emesis), *Virechana* (therapeutic purgation), *Niruha or Asthapan Basti* (medicated decoction enema), *Anuvasana Basti* (medicated oil enema) and *Nasya* (nasal medication). Ayurveda emphasizes more on the preventive aspect of the *Panchakarma* rather than curative. It is believed to purify or cleanses all the body tissues and brings about the harmony of bio-humors (*Tridosha i.e. Vata, Pitta, Kapha, and Manasa Dosha i.e. Raja and Tama*) to obtain long-lasting beneficial effects. It also facilitates the absorption of nutrient and drugs administered thereafter in favor to attain their desired pharmaco-therapeutic effects. *Panchakarma* also restore the mental health, reduces the stress and therefore, help in the prevention as well as management of many psychosomatic disorders. *Panchakarma* is claimed for its preventive, promotive, prophylactic and rejuvenative properties.

**KEYWORDS**

Panchakarma, Samshodhan, Bio-purification, Bio-humors, Dosha

**INTRODUCTION**

Ayurveda is more than a mere healing system. It is a science and art of appropriate living which helps to achieve longevity. Ayurveda emphasizes more on the preventive aspect of *Panchakarma* rather than curative. The human biological system continuously undergoes wear and tear and needs to be cleansed and rejuvenated regularly. Therefore, Ayurveda advises seasonal *Panchakarma* as preventive measure for maintenance and promotion of physical as well as mental health.

*Panchakarma* therapy is considered superior to *Samshaman* therapy as the disorders treated with *Samshaman* therapy may sometimes be provoked again by gaining momentum with the help of etiological factors and vitiated environmental factors but in case of those treated with *Panchakarma*, there is lesser/no chances of gaining such type of momentum and thus, lesser/no chances of recurrence of a particular disorder<sup>1</sup>.

Ayurveda advocates a unique approach of therapeutics by introducing the three fold therapy which includes *Samshodhan*, *Samshaman* and *Nidana Parivarjan*<sup>2</sup>. It is the only system of medicine in the world which proposes the need of regular purification of the human biological system from gross level to the molecular level to

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render it suitable for self recovery and therapeutic responsiveness.

The imbalance in the metabolism arises due to an improper and irregular diet and dietetic patterns, absence of relaxation techniques and meditation practices, continuous exposure to tension and stress and lack of self observation. The regular use of *Panchakarma* procedures improve digestion and metabolism and promote psychosomatic health and thus help to impede the psychosocial stress.

*Panchakarma* has been given a special place in all ancient Ayurvedic texts. Acharya Charak, the author of the foremost important ancient text on internal medicine, the Charaka Samhita, has described a wide use of *Panchakarma* therapy in a wide range of disorders.

### **Panchakarma**

*Panchakarma* is a collective term used to address the five principal procedures or technologies of bio-purification. These procedures are used in order to cleanse the body channels, to eliminate toxins out of the body and to restore the homeostasis. When done properly, these promote psychosomatic health, rejuvenate the body and increase the receptivity and effectiveness of subsequent therapies. The five technologies of *Panchakarma* include *Vaman*, *Virechan*, *Asthapan Basti*, *Anuvasana Basti* and *Nasya Karma*.

### **Objectives of Panchakarma**

These include

- Promotion of physical as well as mental health in an healthy individual
- Management of disease in a diseased person.
- Prophylaxis and rehabilitation

### **Methodology of Panchakarma**

The methodology of *Panchakarma* includes<sup>3</sup>

- *Poorva Karma* (pre procedure preparation)
- *Pradhan Karma* (principal procedure)
- *Pashchat Karma* (post procedure management)

### **Poorva Karma**

*Poorva karma* includes *Pachan* (digestion), *Snehan* (oleation) and *Swedan* (sudation)<sup>3</sup>. *Pachan* especially aimed at digestion of *Ama* (*Apakwa Annarasa* or intermediary harmful metabolites). The purpose of *Snehan* is pacification of the *Vata*, softening of biological system i.e. to prepare the system for elimination of *Doshas* i.e. morbid bio-humors by loosening them. *Swedan* is aimed at liquefaction of morbid bio-humors even in small channels inside the biological system<sup>4</sup>.

### **Pradhan Karma**

The principal procedure includes the five technologies of internal bio-purification which are *Vaman*, *Virechan*, *Asthapan Basti*, *Anuvasan Basti* and *Nasya Karma*<sup>5,6</sup>.

### **Vaman**

It is the process of therapeutic emesis especially indicated to eliminate morbid *Kapha* out of the body and for the management of *Kaphaja* disorders. Therapeutic emesis is induced by administration of some special drugs like *Madanphala* (*Randia spinosa* Poir.), *Madhuyashti* (*Glycyrrhiza glabra* Linn.), *Madhu* (honey), salt etc., which are also common in clinical practice.

### **Virechan**

It is the process of therapeutic purgation especially indicated to eliminate morbid *Pitta* out of the body through anal route and for the management of *Pittaja* disorders. *Virechan* is induced by some drugs having special properties. *Virechan* is categorized into three groups depending upon intensity of therapeutic purgation which are *Mridu Virechan* (minimum optimal therapeutic purgation), *Madhya Virechan* (moderate optimal therapeutic purgation) and *Tikshna Virechan* (maximum optimal therapeutic purgation). Acharya Charaka suggested *Aragvadha* (*Cassia fistula* Linn.) as the best *Mridu Virechan* drug, *Trivia* (*Operculina turpethum* Linn.) as the best *Madhya or Sukha Virechan* drug and *Snuhi Kshira* (milk of *Euphorbia neriifolia* Linn.) as the best *Tikhsna Virechan* drug<sup>7</sup>.

### **Asthapan and Anuvasana Basti**

In this procedure the medication is administered into the rectum or lower gut through anal route. If the medication administered into urinary bladder through urethral route or into the uterus through vaginal route than the procedure is termed as *Uttar Basti*. In *Asthapan Basti* principally the decoction made from single or multiple drugs has administered. In *Anuvasan Basti* principally the medicated oil has administered<sup>8,9</sup>.

As *Basti Dravya* is homogenous emulsion mixture of Honey, *Saindhava*, *Sneha Dravya*, *Kalka*, and decoction of crude drugs and *Prakshepa Dravya* prepared accordingly depending upon *Prakriti* (psychosomatic constitution) in healthy individual and type of disorder in diseased individual. Therefore, *Basti Dravya* may also be used as vehicle for drug administration.

*Basti* therapy is the most important among *Panchakarma* due to its multiple effects. There are three physical bio-humors inside the bio-system namely *Vata*, *Pitta* and *Kapha*. Out of which *Vata* is considered principal because *Pitta* and *Kapha* are dependent on *Vata*, as it governs their functions<sup>10</sup>.

*Basti* is considered best for purification and pacification of *Vata* but it is not limited to *Vata* only and is equally effective for restoring the physiological state of the morbid *Pitta*, *Kapha* and *Rakta*. Charaka has considered, *Basti* therapy as half of the treatment for all types of disorders, while some authors consider it as the complete remedy for all the ailments.

In modern medicine, enema is mainly given to remove the feces from the large intestine or in other words to clear the lower gut while in Ayurveda, *Basti* therapy is administered for multiple actions, which acts locally on large intestine for cleansing and restoring of muscle tone as well as on whole biological system for systematic effects<sup>11</sup>.

### **Nasya Karma**

*Nasa* (nose) is one of the five *Gyanendriya Adhasthan*. It is the *Adhasthan* (seat) of

*Ghranendriya* responsible for *Gandha* (olfaction). But the function of nose is not limited to olfaction and is also a route for drug administration. In Ayurveda the nose is considered as the gateway of *Shir* (brain/mind)<sup>12</sup>. *Nasya Karma* is considered best among the *Panchakarma* for elimination of morbid *Doshas* and for the management of the disorders above the level of *Jatru* (clavicle). Ayurveda advocates the administration of different formulations of drugs through nasal route like *Swaras*, Powder, oil, *Ghrita* etc. Outcome of *Nasya Karma* also depends upon these therapeutic forms of the drugs.

Contemporary science concluded through several researches that the intranasal therapy is sometimes alternative or even superior to intravenous route of drug delivery system, which perhaps explains why intravenous route of drug delivery is not found in any of the Ayurveda texts.

### **Mode of Action**

*Vaman* and *Virechan* drugs possess five special properties viz. *Ushna*, *Tikshna*, *Sukshma*, *Vyavayi* and *Vikasi*. *Vaman* and *Virechan* drugs execute their action with the help of these five important properties<sup>13</sup>.

*Ushna Guna* leads to *Vishyandana* i.e. help in liquefaction of morbid *Doshas* by virtue of its *Agneya* property. Hence, it facilitates movement of morbid *Doshas* towards *Koshtha* (central part of the bio-system) to be expelled out of body. *Tikshna* property leads to '*Vichchhindan*' or *Sanghatbhedan* i. e. breaks the complex morbid matter into smaller molecules. Thus, *Tikshna* property converted the *Mala* and morbid *Dosha* into micro form to help the process of expulsion. *Sukshma* Guna allow the drug to pass into micro-channels by virtue of its '*Anupravanabhava*' (a special property to get enter into the micro-channels) by dilating the channels. This property helps to remove the morbid matter from micro-channels and brings them to *Koshtha* for expulsion. *Vyavayi* property allows the drugs to spread quickly throughout the body & starts their action before their digestion without any change in their form. By virtue of

*Vikasi* property *Vaman* and *Virechan* drugs leads to *Shaithilyata* (loosening) of morbid *Doshas* and thus help them to bring inside the *Koshtha* for their easy expulsion<sup>14</sup>.

The Mucosal layer is most superficial which comes directly in contact with the administered *Basti Dravya* (drugs). When the intestine gets purified daily, the layers of intestine and villi get the nutrition and further absorption of micronutrients may be enhanced and these micronutrients may enter the circulation and finally reaches to the target organ. Mucous membrane of intestine can easily absorb the lipid soluble content administered through the *Anuvasana Basti* and finally assimilate into the circulation for systemic action. Modified from<sup>15</sup>.

Mechanisms of action for *Nasya Karma* through nasal mucosa include para-cellular transport between the cells and trans-cellular or simple diffusion across the membrane. The first mechanism includes aqueous route of transport, also termed as the para-cellular route which is slow and passive. Trans-cellular process is the second mechanism of transport through a lipoidal route and is responsible for the transport of lipophilic drugs that show a rate dependency on their lipophilicity. Drugs also cross cell membranes by an active transport route via carrier-mediated means or transport through the opening of tight junctions. Olfactory mucosa has affinity towards lipophilic nature of *Sneha Nasya* and can easily and rapidly gets absorbed. The drug then shows its action either by passing into blood circulation through vascular path way or by stimulating the nerve endings in the mucosal layer<sup>16,17</sup>.

### **Pashchat Karma**

*Pashchat Karma* includes the specific management and instruction for the patient following *Panchakarma* procedure. The special dietetic pattern named *Sansarjan Krama* is to be followed after *Vaman* and *Virechan* therapy for the resurgence of *Agni Bala* and *Sharira Bala*<sup>26</sup>. After the completion of therapeutic procedures like *Vamana* and *Virechan*, normal diet should not be given immediately as the *Agni* (Digestion and metabolism) got impaired

and vulnerable to diet which is beyond its capacity to digest. Hence, the intention of *Sansarjana Krama* is resurgence of impaired *Agni*. During the *Panchakarma* process after liquefaction, the *Doshas* reaches to *Amashaya* and hamper the strength of the *Agni*. Therefore, it is important to restore the strength of the *Agni* by using *Sansarjan Krama*. In some conditions like *Kapha* and *Pitta* are not eliminated properly, patient is alcoholic and patient having predominance of *Vata-Pitta* (or having *Vata-Pitta Prakriti*) Acharya Charaka and Vagbhat suggested *Tarpanadi Krama* (an alternative way for dietetic regimen) instead of *Sansarjan Krama*<sup>18</sup>. Importance of *Sansarjan Krama* includes restoration of the strength of *Agni*, Maintenance of the electrolyte imbalance and to regularizes the body and thus, help to restore the physical strength.

Some other *Pariharya* (precautions and instructions) are mentioned by Acharyas which should be followed after *Panchakarma*. Following should be avoided, *Vega Vidharan* (suppression of natural urges), *Ratrijagran* (late night sleep), *Vyavaya* (sexual act), day sleep, anger and sorrow, loud speaking, excessive meal, sitting in one posture for long time, *Viruddha Ahar* (incompatible diet), *Asatmya Ahar* (unwholesome diet), *Guru Ahar* (heavy diet) etc. The eight *Pariharya* (*Ashta Mahadoshakar Bhava*) should strictly be avoided after *Panchakarma* therapy, which are as follows<sup>19</sup>.

1. Speak loudly
2. Riding over unbalanced vehicle
3. Excessive walking
4. Continuous sitting for long time
5. Eating during the state of indigestion
6. *Ahita Bhojan* (unwholesome diet)
7. Day sleep
8. Sexual act.

The benefits of *Panchakarma* therapy can be summarized as follows<sup>20</sup>.

- Maintains and promotes the psychosomatic health (when used as a preventive measure).
- Increases the strength of the *Agni* i.e. restores the equilibrium of digestive power and metabolic processes undergoing inside the body.
- Body attains *Rasayan* and *Vajikaran* properties.
- Alleviate the related diseases (if used as a management measure).
- Prevent forthcoming diseases by boosting our immunity.
- Delayed the process of aging.
- Increases life force, vitality, inner peace and overall well-being.

## DISCUSSION

Ayurveda is recognized across the world due to its holistic approach towards positive life style. Ayurveda emphasizes more on preventive aspect rather than curative. Ayurveda is a science of life and art of living which is continuously developing due to its holistic approach for prevention as well as management of a wide range of disorders.

*Panchakarma* is the method of cleansing and detoxifying the biological system. Accumulation of different toxins inside the body, intake of unwholesome diet and faulty lifestyle and dietetic patterns leads to vitiation of biological humors and body channels which in turn leads to manifestation of a particular disorder. Hence, the biological system needs regular cleansing by the use of *Panchakarma*.

*Poorvakarmas* are used to make the body conducive for elimination of toxins, waste material and morbid *Doshas* out of the body and cleansing of the body channels. The *Panchakarma* helps to maintain the *Dosha* and *Dhatu Samya* i.e to maintain the homeostasis & thus, leads to the repair and regeneration of different body tissues and also modulate the body immunity and cleanses the body channels by eliminating toxins out of the body. Therefore, bio-purification is very important preventive as

well as therapeutic measure for a wide range of disorders. Ayurveda is the science and art of healing that deals with all aspects of an individual. The aims of Ayurveda are to promote, physical, mental & emotional health and to cure the diseases. It provides guidance regarding food and lifestyle so that a healthy individual can stay healthy and individuals with health challenges can improve their health. In Ayurveda, psychological factors have been given equal importance as physical & physiological factors in the etio-pathogenesis of various disorders. It also promote the mental health, reduces the stress therefore also helps in the prevention and management of several psychosomatic disorders<sup>21</sup>.

The palliative therapy in the form of drugs and diets may not be effective unless the body channels are properly cleansed and toxic materials are eliminated. *Panchakarma* is believed to purify or cleanse all the body tissues and brings about the harmony of bio-humors (i.e. *Vata*, *Pitta*, *Kapha*, and *Raja & Tama*) to obtain long-lasting beneficial effects<sup>22</sup>.

Adopting *Basti* therapy will help in restoring the *Vata* into its normal physiological state. Hence, it is considered as one of the most suitable treatment modalities for *Vata* predominant disorders. Acharya Vagbhat also supports this by stating *Basti* therapy as “*Ardha Chikitsa*” (Half of the total treatment)<sup>23</sup>.

*Panchakarma* procedures are also considered as good bio-enhancers. These increase the strength of *Agni*, leading to increased digestion power and increased absorption of nutrients and drugs. Thus, ultimately increases the bioavailability of nutrients and drugs. In Ayurveda *Rasayana* (rejuvenative) and *Vajikaran* (aphrodisiac) drugs are advised to take after proper biopurification. Because proper bio-purification increases the bioavailability of *Rasayana* and *Vajikaran* drugs, thus potentiates their efficacy<sup>24</sup>.

Our literature review suggests that most of the procedures included under *Panchakarma* have been investigated to some extent. The majority of the studies reviewed showed positive outcomes for *Panchakarma* when compared to a control.

Unfortunately, only a limited number of high-quality clinical trials have been conducted to date. Common limitations include low sample size, inadequate descriptions of randomization and blinding protocols, inadequate descriptions of adverse events, and nonstandard outcome measures. In spite of this, preliminary studies support the use of *Panchakarma* and warrant additional large-scale research with rigorously designed trials<sup>25</sup>.

## CONCLUSION

*Panchakarma* is considered superior among the therapeutics described in Ayurvedic system of medicine in almost all types of disorders. It gets to the root cause of the pathological state and restores the essential balance of psychosomatic bio-humors (three somatic bio-humors, *Vata*, *Pitta* and *Kapha* and two psychological bio-humors *Raja* and *Tama*) inside the bio-system. Ayurveda emphasizes more on preventive aspect of *Panchakarma* and advises undergoing *Panchakarma* at the seasonal changes in order to clean the bio-system, improve the digestion and metabolic processes, to promote the psychosomatic health and thus to promote the overall well being. Therefore, *Panchakarma* can be used in the prevention as well as in the management of a wide range of disorders.

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