



## Review Article

**ROLE OF KAALA (TIME) IN KAYASHODHANA (DETOXIFICATION OF BODY)****I. B. Kotturshetti<sup>1\*</sup>, Yogitha Bali M.R<sup>2</sup>, Gurubasava S. Hiremath<sup>3</sup>**<sup>1</sup>Principal and Chief Medical Officer, Professor and HOD, Department of Panchakarma, R.G.E.S. Ayurveda Medical College and Hospital, Ron, Gadag, Karnataka, India.<sup>2</sup>Professor and HOD, Dept. of Shareera Rachana, Sushruta Ayurvedic Medical College, Bangalore, India.<sup>3</sup> 4<sup>th</sup> Professional BAMS, R.G.E.S. Ayurveda Medical College and Hospital, Ron, Gadag, Karnataka, India.**KEYWORDS:** *Kala, Ayurveda, Panchakarma, Dosha, Agni, Bala, Ahara, Vyadhi, Oushadha.***ABSTRACT**

The principles and practices in relation to human health as described in Ayurveda signify the moulding techniques of inculcating healthy personality in dependence of *Kala* or the time. The *Kala* is accepted as one of the important environmental phenomena from the health and disease point of view. The life style prescribed in Ayurveda according to *Kala* plays a vital role in maintaining and promoting the positive health as well as to prevent and cure the diseases. *Dosha, Agni, Bala, Ahara, Vyadhi, Oushadha* and *Chikitsa* etc various factors are influenced by *Kala*. Ageing also depends upon the *Kaala* which helps us to ascertain the *Sharira Avastha, Sharira bala* and *Roga bala* etc of the person according to which the treatment can be planned to reduce the sufferings of the patient. So here, an effort is made to elucidate the therapeutic application of *Kaala* or the time in reference to *Panchakarma* therapies that does the *Kaya Shodhana* which can be considered as the detoxification or purification of the body.

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[dribkotturshetty@gmail.com](mailto:dribkotturshetty@gmail.com)**INTRODUCTION**

The main goal of Ayurveda is maintaining the health of a healthy person by preventing him from illness. This immortal science not only looks into cure of disease, but also gives prime importance to the prevention of disease and hence maintains a state of equilibrium of all factors within the body and entire universe.<sup>[1]</sup> Prolonged use of Ayurveda by people has also led to several home remedies for common ailments. Ayurvedic medicines contain sophisticated therapeutic formulations. Ayurveda is also a person-centered medicine (PCM), which deals with healthy lifestyle, health promotion and sustenance, disease prevention, diagnosis and treatment.<sup>[2]</sup> *Panchakarma* is the main treatment modality which is widely used in all the eight branches of Ayurveda. The *Shodhana* therapy is more admired by virtue of its capability to completely eliminate the *Doshas*.<sup>[3]</sup>

Everything in nature happens in cyclical manner. Whether it is one second or the era or day or the season, well being or ill feeling, everything moves in a rhythm. All the activities of the world

are under the control of *Kala*. This is the reason our Acharya's have compared the *Kaala* or the time. *Kala* has a great role in Ayurveda in connection to collection of remedies, preservation, purification, manufacturing, toxicity, validity of medicine, expiry of medicine, disease, programme of treatment, birth, growth, development of different organs in embryo, different stages of human life, death, etc, so *Kala* is having master role in creation and evolution, *Kala* is *Eka* (one) but visible as many, Eternal (*Nitya*), No origin or end (*Anadi*), *Ananta* have pervading nature, cause for all *Parinamakara Bhavas* and believed God as - कालो हि नाम भगवान्।<sup>[4]</sup>

*Kala* is the constant factor which is the basic cause for the *Parinama* of immature substance to gets its maturity and maturity to its destruction i.e. for *Utpatti-Sthiti-Pralaya*. Nothing is left behind which cannot be affected by the *Kala*. The *Rutu*, time of the day, etc. where ever there is a *Dravya* and the existence of *Kala* there is always *Parinama*. Hence *Kaala* has an impact on the principles governing *Ahara*. To decide the frequency, the

longevity of day and night, age, *Prakriti*, etc. have to be taken into consideration e.g. on long days frequency will be more and vice versa.<sup>[5]</sup> According to Charaka, *Kala* have been divided into two *Nithyaka* and *Avasthika*. *Nithyaka* again divided into *Uttarayana* and *Dakshinayana*. *Uttarayana* being further classified as *Shishira*, *Vasantha*, *Greeshma* and *Dakshinayana* further classified into *Varsha*, *Sharat*, *Hemantha*. *Avasthika* tells us about different *Avasthas* of *Vyadhi*.<sup>[6]</sup>

According to Susruta Samhita, *Kaala* is the one which doesn't stop even for a moment. *Dalhana*, commenting on Susrutha Samhita has elaborated so many definitions of the *Kaala*. Consideration of some other definitions will also help to understand *Kaala* in a better way. At first, the factor which collects and makes all the beings in a single fraction is called *Kala*. Secondly, the substance responsible for providing happiness and miseries is called as *Kala*. Thirdly, the factor for shortening of the life of all the living beings is *Kala*. Fourthly, the substance which leads everybody towards death is *Kala* and at last, the factor responsible for creation of all beings is called as *Kala*.<sup>[4]</sup> A living person is the product of *Kala*. Diseases occurring to the persons are also considered to be caused by time. The whole universe is under the control of time. Hence time is the cause everywhere. From the microscopic changes to the macro changes in the universe all are governed by time.<sup>[6]</sup>

*Kāla* is unique and specific causative factor of all type of effects, at the same time it is unavoidable. *Kāla* pervades each and every aspect of Ayu. To fulfil above purpose, two modes of treating the disease has been mentioned in our classics that is *Shodhana* and *Shamana*. Among these two, *Shodhana Chikitsa* is done through a unique way of purification therapy called as *Panchakarma Chikitsa*. By *Panchakarma Chikitsa*, the *Kupita Vāta*, *Pitta* and *Kapha* can be removed from its root. *Kala* is divinity, has been described in Ayurveda as a factor which has neither a start nor an end. The change resulting from an earlier situation to succeed or present situation is known as *Kala*. It is also known as *Parinama*.<sup>[4]</sup>

Ayurveda has given great importance to the *Kala* (time) for the *Swastha* (healthy) as well as the *Athura* (disease). From the basic *Dina charya* (daily regimen), *Rtu charya* (seasona regimen), *Dosha kala* (time of each *Dosa*), *Avasthapaka* (stages of digestion) *Kala*, *Dhathu poshana* (process of nourishment) *Kala*, the process of ageing, developing *Samprapthi* (pathogenesis) in a disease to its *Chikitsa* (treatment), all the factors depends on time.<sup>[6]</sup>

*Kala* is the principle reason for the vicious cycle of birth and death among human beings. *Panchakarma*, the unique concept of Ayurveda system of medicine removes the *Upasthita Dosha* only after considering *Kala* and *Matra*.<sup>[7]</sup> *Shamshodana Chikitsa* or the detoxification therapy will be successful if *Kalaadi bhavas* are assessed properly. If treatment is not given according to *Kāla* then it may lead to *Peeda* or *Marana* just like the plants which get destroyed by untimely rain.<sup>[8]</sup>

*Panchakarma* is the most essential part of Ayurveda treatments. It is preventive, preservative, promotive, curative and rehabilitative therapy. The umbrella of *Panchakarma* includes five major therapeutic procedures *Vamana* (therapeutic emesis), *Virechana* (therapeutic purgation), *Niruha Basti* (therapeutic decoction enema), *Anuvasana Basti* (therapeutic oily enema) and *Nasya* (therapeutic errhine) and many allied therapies.<sup>[9]</sup>

The role of *Kāla* in *Panchakarma* is to maintain the *Swāsthya*, to provide the benefits of *Rasayana* and to get relieved from the *Vyadhi*. In order to elucidate the effect of *Kaala* and its role in *Panchakarma* therapies with more emphasis on *Kaya shodhana* or the detoxification of the body, the present study was conducted as there were very only few studies on the subject.

### **Panchakarma Chikitsa or the therapies Frequency of Panchakarma Chikitsa**

*Virechana* should be done after 15 days of *Vamana*, *Niruha basti* should be carried out after 15 days of *Virechana*, *Anuvasana* is done immediately after *Niruha Basti* or *Anuvasana Basti* should be done 7 days after *Virechana*.<sup>[10]</sup> Complete *Panchakarma* therapy is done for the purpose of *Rasayana*, *Vajikarana* or *Sarira Shuddhi* (detoxification therapy). In *Pravara Matra/ Uttama Matra*, *Panchakarma chikitsa* should be completed by 120<sup>th</sup> day, in *Madhyama Shodhana*, *Panchakarma* should be completed by 85<sup>th</sup> day and in *Avara Shodhna*, *Panchakarma* should be complete by 59<sup>th</sup> day.

### **Rasayana and Panchakarma**

With the aim of *Kaya shodhana*, *Panchakarma* therapies are administered even before the commencement of *Rasayana Aushadhis*. For instance, before giving *Kutipravesika Rasayana*, *Vamana*, *Virechana*, *Basti* and *Nasya Karma* should be done.<sup>[11]</sup> *Snehana*, *Svedana*, *Vamana*, *Virechana*, *Niruha Basti* should be conducted before *Rasayana* and *Vajikarana chikitsa*.<sup>[12]</sup> *Vrushya yoga* which is given without *Shodhana* by *Panchakrama* will not be effective, similar to the dye not staining a dirty, unwashed

cloth. Sushruta has also opined the same by quoting 'Srotah Samsodhana' before administering several Rasayana.<sup>[13]</sup>

### **Panchakarma – Poorva Karma**

#### **Deepana and Pāchana**

*Deepana-Pachana* is a pre therapy in which the drugs are administered to increase the *Agni* and for the digestion of *Ama*. If *Snehana* is done in *Amayukta* condition, it may lead to destruction of *Sanjna* and even also death. In *Mandāgni* and *Krura Koshta*, *Kshara* and *Lavanayukta Grita* should be taken to increase the *Agni*. After the *Amapachana*, *Snehana*, *Svedana* and *Virechana* should be given.<sup>[14]</sup> There is no specific time duration for *Dipana Pachana*. *Deepana-Pachana* should be carried out till the observation of *Nirāma Lakshanas*.

#### **Snehana**

Before performing *Panchakarma*, first *Deepana Pachana*, next *Sneha Karma*, then *Svedana Karma* and later it should be followed by any *Samshodhana*.<sup>[15]</sup> Between any two *Panchakarma* therapy there should be a *Snehana Karma* again. Any type of *Panchakarma* should end with *Sneha karma*.<sup>[16]</sup> *Sneha Karma* should be done, when the person is having *Laghu Koshta* (a state after passing regular *Vegas*) and in early morning when sunrise starts. *Snehapāna* should not be done in *Akala* (*Ati Ushna* or *Ati Sheeta*) and *Durdina* (the day of cloudy atmosphere).<sup>[17]</sup>

**Table 1: Rutus and Appearance of Sun**

<i>Sādhārana rutu (Vasanta, Sharad and Varsha)</i>	When sun rays starts to touch the earth
<i>Sarad rutu</i>	<i>Sarpi</i>
<i>Pravrit</i>	<i>Taila</i>
<i>Madhava (Greeshma)</i>	<i>Vasa-majja</i>

*Snehana* should be done when the previous night meal get digested.<sup>[18]</sup> In case of *Mridu koshta* - 3 days, *Madhyama koshta* - 5 days and *Krura koshta* - 7 days. In *Sleshmadhika* and *Sheeta kala* - *Snehapana* done in day, In *Vata Pittadhika* and *Ushnakala-Snehapana* done in night,<sup>[19]</sup> in *Vata Pittadhika* - *Snehapana* should be done in night and in *Vatakapittadhika* - *Snehapana* should be carried out in daytime.

**Table 2: Sneha Matra according to Kaala<sup>[20]</sup>**

Types of Sneha	Time period for the digestion of Sneha
<i>Hrsiyasi</i>	Within 3 hours
<i>Hrsva</i>	Within 6 hours
<i>Madhyama</i>	Within 12 hours
<i>Uttama</i>	Within 24 hours

*Shodhananga Snehapana* which is given in *Ananna* and *Akshudha Kala* should be done when the previous night meal gets digested and when the patient is not having hunger.<sup>[21]</sup>

#### **Swedana**

*Swedana* (body heating) is a treatment modality common to Ayurvedic clinical practice. Practiced either as preparatory component to *Panchakarma* (five detoxification procedures) or as an independent intervention, *Swedana* is praised for its relaxing and detoxifying effects all through the classical Ayurvedic texts.<sup>[22]</sup>

Incidentally, *Swedana* is identified as one most frequently observed procedures adopted in Ayurvedic *Panchakarma* clinics. It constitutes approximately 95% of total procedures carried out in Ayurvedic *Panchakarma* clinics.<sup>[23]</sup>

After *Snehana Karma* only *Svedana* should be done. *Svedana* is done after *Snehana* to relieve obstruction of *Vata*.<sup>[24]</sup> *Svedana* should be done in *Jeernanna avasta*.<sup>[25]</sup> If *Svedana* given in *Kshudita* then it causes *Atyanta Glani*.

#### **Pradhana karma**

##### **Vamana**

*Panchakarma* is an important component of Ayurvedic treatment, which eliminates vitiated *Doshas* from the body. *Vamana*, a *Pradhana karma* of *Panchakarma*, is an important *Samshodhana* procedure (bio-cleansing method) recommended for cleansing of *Bahudoshas*.<sup>[26]</sup>

*Vamana* should be administered early morning in the *Sadhara rutu* after the previous night meal has got digested.<sup>[27]</sup> This is to be carried out one day after *Sneha pana*. After *Vamana oushada prayoga* one should wait for one *Muhurta kāla* for *Vega*.<sup>[28]</sup> And also after the procedure of *Vamana*, patient needs to be consoled for 1 *Kshana*. Here *Kshana* means *Muhoorta*. On the day of *Vamana*, once the patient feels hungry, he should be advised to consume *Laghu Bhojana* in the evening.

##### **Virechana**

*Virechana chikitsa* should be administered after *Vamana*; or else the *Kapha dosha* moves downwards to the abdomen and produces *Agnimandhya* leading to many diseases. On the 9<sup>th</sup> day after *Vamana*, *Snehapana* should be done for the purpose of *Virechana*.<sup>[29]</sup> *Virechana* is to be done after *Sleshma kāla* and sunrise.<sup>[30]</sup> The *Virechana Aushada* needs to be given in morning and it produces *Samyak Virechana Lakshanas* after *Paka*. *Virechana* should be done three days after *Snehana*.

### Anuvasana Basti

*Anuvasana basti* should be administered on the 9<sup>th</sup> day after *Vamana* or *Virechana*. In *Sheeta kaala* (*Shishira*, *Hemanta* and *Vasanta Ritu*), *Anuvasana Basti* is done in *Diva* or daytime. With *Vata Pitta Dosha* involvement and in *Sharad*, *Greeshma* and *Varsha Ritu*, *Anuvasana basti* is administered in *Rātri* or night. With *Kapha Dosha* involvement and *Sheeta kaala* and in *Vasanta Ritu* *Anuvasana basti* is administered during day time. *Anuvāsana basti* should be given in day time because *Sroto mukha* will be open in day time it helps the *Sneha* to reach all *Srotas*.<sup>[31]</sup> If *Anuvāsana basti* is given in night, it may lead to *Dosha uthklesha*.<sup>[32]</sup>

Once the *Niruha dravya* comes out, patient is advised to take bath and consume *Shali anna* and *Māmsa rasa* should be advised. After *Pāchana* of this, *Laghu* and *Alpamātra bhojana* should be given by evening. Then *Anuvasana basti* is given for the purpose of *Brimhana*.<sup>[33]</sup> *Anuvasana basti* should be given after food. If *Anvāsana basti* is given in *Abhuktāvastha*, it may go upwards due to *Anāvritatva* and *Shunyata* and comes through *Kanta* producing *Stambha*, *Kantagraha*, *Urdhwa Virechana*.<sup>[34]</sup> After the administration of *Anuvasana Basti Dravya*, patient should remain in the same position for 100 *Matrakāla*. *Pratyāgaman kāla* is 3 *yāma* (1 *yāma*= 3 hours). *Nitya anuvāsana-* In *Ati ruksha*, *Bahu vāta* condition *Anuvāsana* can be given daily.<sup>[35]</sup>

### Mātra basti

*Mātra basti* is a special type of *Basti* that can be administered any time (*Sarvakalam nirataya*).<sup>[36]</sup> But it should not be administered in the persons having *Ajirna* and those who sleep during day time. As *Matra Basti* is a type of *Sneha basti* its *Pratyagamana kala* is 3 *Yama*.

### Niruha basti/Asthapana basti

This type of *Basti* should be given before food, when the patient is not hungry. If *Niruha basti* is given after food, then it causes *Visuchika*, *Chardi* and *Sarvadosha prakopa*. In *Sheeta kāla teekshna basti* should be given, in *Ushna kāla mrudu basti* and in *Vasanta*, *Sarad* and *Sheetoshna Madya kālasadharana basti* is given. *Niruha basti* is also called as *Asthapana basti* and this should be conducted during *Shukla paksha*, in the suitable *Nakshatra* and *Muhurta* and when the previous night's meal has been digested.<sup>[37]</sup> After the administration of *Niruha basti*, the *Basti dravya* should come out within 1 *Muhurta*, otherwise it may cause *Mrutyurupa peeda*.<sup>[38]</sup>

### Madhutailika basti

*Madhutailika basti* is a type of *Niruha Basti*, indicated in *Snigdha*, *Alpa Doshayukta* and *Mrudu kostha* persons. In this type of *Basti*, the maximum time of retention is one *Muhurta* (48 min).

**Yapana basti** - *Yapana basti* is a type of unique *Basti* that can be given any time and in any condition. This *Basti* retains the medicine for longer duration.<sup>[39]</sup>

### Uttara basti

*Uttara basti* is the *Basti* that is administered only in females and should be given in *Ārtava kāla*. *Uttara basti* should be given after 2-3 *Asthapana Basti's* which does *Shodhana* during *Rutukala* because during this period the *yoni* or the *Garbhasaya* is *Avarana rahita* and so *Sneha* enters and gets absorbed easily.<sup>[40]</sup> According to *Astanga Sangraha* this *Basti* can be administered even in *Atyayika Avastha*.

**Table 3: Types of Basti based on Kāla**

Basti	Days	Anuvasana	Niruha
Karma basti	30	18	12
Kāla basti	16	10	6
Yoga basti	8	5	3

### Peyādi krama

*Peyadi krama* should be done after the completion of *Vamana virechana* etc *Samshodhana karmas* to increase the *Agni*. *Peyadi krama* should be observed as follows; in *Pravara shodhana* 7 days, in *Madhyama shodhana* 5 days and in *Avara shodhana* 3 days. *Parihāra kāla* between *Niruha* and *Virechana/Virechan* and *Niruha* is 7 days. After *Virechana*, *Niruha basti* can be done and vice versa.<sup>[44]</sup>

### Nasya Karma

*Nasya karma* is a process wherein the drug herbal oils and liquid medicines are administered through the nostrils. Since nose is the gateway of the head, it is highly effective in curing a number of diseases pertaining to the head, if it is performed systematically. It cleanses and opens the channels of the head, thereby improving the process of oxygenation *Prana*, which has a direct influence on the functioning of brain. It is beneficial if done on a regular basis, because it keeps the eyes, nose and ear healthy. It also prevents the early greying of hair and bear.<sup>[42]</sup>

In cases of *Khalitya*, *Palitya* and other diseases like *Manyastambha*, *Shirahshula*, *Ardita*, *Hanustambha*, *Pinasa*, *Ardhavabhedaka*, *Shirokampa* etc *Vyadhis*, *Anutaila Nasya* is administered in *Pravrita*, *Sarada* and *Vasant rutu* to promote the

functions of eyes, ears and nose to prevent and sudden onset of other disease which may occur in the *Urdhvajatru pradesha*. *Anutaila nasya karma* should be done once in 3 days for 7 times.<sup>[43]</sup> In *Swasthavritta*, *nasya karma* is administered in *Sharad* and *Vasanta* during morning, in *Sheetakala*, afternoon, in *Greeshma rutu*, evening and in *Varsha rutu* in the presence of sun.

*Nasya* should be given in empty stomach because if it given after food, then the *Doshas* covers the *Urdwa srotas* and it causes *Chardi*, *Shwasa*, *Kāsa*, *Pratishyaya*. *Nasya karma* is contra indicated in *Anārta* and *Durdina*. Otherwise it causes *Shiroroga*, *Vepathu*, *Sthaimithya*, *Tālu*, *Netra kandu*, *Manyāstamba*. *Kantaroga*, *Pratishyāya*, *Arumshika*. In *Shleshma roga* during morning, afternoon in the *Pittaja rogas* and evening in case of *Vataja rogas*. In *Hidhma*, *Apatanaka*, *Manyasthamba* and *Swarabramsha* etc disorders, *Vāta prakopa* will be more and therefore *Nasya* should be done daily morning and evening. In other disorders one day gap should be there between two *Nasya karmas*. In the procedure, patient should remain in the same position for *Vak shata* after administration of *Nasya*. According to *Vagbhata*, *Nasya karma* may be given for seven consecutive days. In conditions like *Vata Dosha*, in *Shira pradesha*, hiccough, loss of voice etc. it may be given twice a day (in morning and evening).<sup>[44]</sup> *Nasya* should be given for 3 days, 5 days, 7 days and 8 days or till the patient shows the symptoms of *Samyak nasya* as stated in *Ashtanga Sangraha*. Acharya Charaka has not mentioned specific duration of the *Nasya* therapy, but suggested to administer the procedure based on the severity of disease. As per *Bhoja*, If *Nasya* is given continuously beyond nine days then it becomes *Satmya* to patients and if given further, it neither benefits nor harms to the patients.

#### **Pratimarsha nasya**

This can be administered in Morning, evening and in any time.<sup>[45]</sup> Even in *Akāla* and *Varsha rutu*, *Pratimarsha nasya* can be done.<sup>[46]</sup> It can be given from birth till death.<sup>[47]</sup>

#### **Based on the Daily Regimen**

*Nasya karma* and *Matra Basti* can be done daily.<sup>[7]</sup>

#### **Based on the Seasonal Regimen**

*Samshodhana chikitsa* should be done in *Sadharana kala* i.e., *Vamana* in *Vasanta rutu*, *Virechana* in *Sarad rutu* and *Basti chikitsa* in *Pravrit Ritu*.<sup>[8]</sup>

#### **DISCUSSION**

Ayurveda is a holistic system of medicine that considers *Prakriti*, *Agni*, strength etc of the patient and also of the *Vyadhi* that provides the

customized treatment for the patients. *Panchakarma chikitsa*, the unique concept of Ayurveda plays a vital role in bringing the *Dhatusamyata* and involves therapies that do the purification or the detoxification of the body also called as *Kayashodhana*. These therapies include particular *Purva karma*, *Pradhana karma* and the *Paschat karma*. With respect to *Panchakarma* and the *Kayashodhana*, *Kaala* or the time plays a important role in deciding the type of the *Panchakarma* procedure to be done, type and the severity of the *Vyadhi*, with its advantages and disadvantages.

#### **Deepana-pachana**

Most of the *Deepana Dravyas* (appetizer) have predominance of *Laghu* (Lightness) and *Ushna Gunas* (Hot) whereas *Ruksha* (rough) and *Ushna gunas* (hot) are predominant in *Pachana* (digester).<sup>[48]</sup>

The basis of Ayurvedic Pharmacology lies in *Rasapanchaka* of the drug. The constituent predominant *Mahabhootas* play important role therein. The *Deepaniya* drugs consist of *Vayu* and *Agni mahabhoota*, having *Katu*, *Amla* and *Lavana rasa*, *Ushna virya* and *Tikshana*, *Ushna* and *Laghu guna*. Whereas *Pachaneeya* drugs consists of *Agni* and *Vayu mahabhoota*<sup>[28]</sup>, having *Tikta*, *Katu*, and *Kashaya rasa*. Charaka has explained properties of six *Rasas* (tastes) to understand its exact mechanism of action; and provided guidelines for judicious use of the same in the therapeutics.

Application of *Deepaniya* drugs is for stimulation and increase of digestive fire while *Pachaniya* drugs are useful to address indigestion. Critical review and analysis suggest that *Katu*, *Amla* and *Tikta rasa* are associated with *Deepaniya* action of the herbs while *Tikta rasa* is mostly found with the drugs mentioned for *Pachaniya* effect. The presence of *Agni* and *Vayu mahabhoota* are responsible for the said actions. Based on causative *Dosha* involved in for *Agnimandya* the *Dravya* of *Sheeta* or *Ushna Veerya* are selectively used in therapeutics. The drugs namely, *Pippali*, *Chitrak*, and *Nagar* possessing *Pachana* or *Amapachana* action are preferred in the condition of *Ajirna*.<sup>[49]</sup>

#### **Snehana and Swedana**

The features produced after *Snehana* suggest that there is loosening of morbid *Doshas* which were adherent to the walls of transforming channels and which in turn will help in the *Shodhana Karma*, performed afterwards.<sup>[50]</sup>

By the combined effect of oral ingestion of lipids (*Snehapana*) and fomentation (*Svedana*), there is an apparent increase in the *Dosha* (humors)

coupled with liquefaction of *Dosha*, metabolism of *Dosha*, opening of tissue channels (*Srotomukha*) and control of neurohormonal mechanism (*Vata-nigraha*), the *Doshas* are propelled to the *Koshtha* (GIT) by *Anupravana Bhava*, (diffusion) and then they are expelled out through nearest route by appropriate purificatory therapies (*Shodhana Karma*).<sup>[51]</sup>

*Snehana Karma* (Massage) may produce following effects in the body 1) Lubricates the *Srotamsi* (microcirculatory channels) 2) Displaces exudates and thus may relieve tension and pain. 3) Softens muscles, ligaments and tendons. Thus corrects stiffness and rigidity and induces elasticity in body. 4) Prepares smooth passages (micro channels) for elimination of vitiated *Doshas* during *Swedana* therapy.

*Swedana Karma* (Sudation fomentation heat) may produce following effects in the body - Induces sweating and removes body toxins. 2. Induces *Srotoshudhi* (cleanses micro channels) 3. Liquefies morbid *Doshas* and expels them out with sweat. 4. Recovers vascular insufficiency of the joints and muscles. 5. Causes relaxation of muscles and tendons. 6. Activates the local metabolic processes which in turn produce relief of pain, swelling, tenderness and stiffness etc.<sup>[52]</sup>

#### **Vamana and Virechana**

In *Vamana*, there is anti-peristaltic movement begin to occur. The anti-peristaltic movement may begin as for down in the intestinal tract as the ileum and the antiperistaltic wave travels backward upto the intestine at the rate of 2-3cm/sec. During the vomiting, strong intrinsic contractions occur in both the duodenum and lower oesophageal sphincter. Thus following the vomitus to begin moving into the oesophagus, from here a specific vomiting involving abdominal muscle expel the vomitus to the exterior. In the vomitus, toxic/waste materials which are responsible for the alleviation of pathological process of various diseases through *Vamana* after *Snehana* and *Swedana* are excreted out.

The *Virechana Karma* clears the *Margavarodha* (obstruction), eliminates the morbid *Doshas* from *Rakta*, and regulates the activity and movement of *Vata*. According to the modern point of view, during *Virechana* process, the inflammation of intestinal mucosa leads to hyperemia and exudation resulting into increased passage of protein-rich fluids through vessel walls to intestinal lumen. Increase in fluid volume also results in the dilution of toxic material. Evacuation of the fluid from *Rasa-Rakta* by *Virechana* is the direct process

that leads to decrease in fluid volume. *Virechana* evacuates all morbid *Doshas* from all micro to macro *Dhatu* channels and regulates *Vata*, thus decreasing all symptoms of *Vata*, *Pitta*, and *Kapha* on *Srotasa* level.<sup>[53]</sup>

#### **Basti**

It can be understood in the following ways: (1). By absorption mechanism, (2). by system biology concept, and (3). by neural stimulation mechanism.

#### **By absorption mechanism**

*Basti*, after reaching the rectum and colon, causes secretion of bile from gall bladder, which leads to the formation of conjugate micelles which are absorbed through passive diffusion. Especially the middle-chain fatty acid present can get absorbed from colon and large intestine part gastrointestinal tract (GIT) and break the pathology of disease.

#### **By system biology concept**

The latest concept of system biology makes it clearer how *Basti* can act on the organ systems. This theory believes that all the organs are interconnected at molecular level. Any molecular incident is transformed at cellular level, then at tissue level and ultimately at organ level. Thus, the effects of *Basti* on gastrointestinal system will definitely affect another system and help to get the bodily internal homeostasis.<sup>[54]</sup>

All these purificatory procedures of Ayurveda help in purification of the body thereby focusing on the promotion of positive health and to overcome from the ill health. Administrations of these *Panchakarma* therapies are advised both in the normal condition and also in the diseased by the Acharyas. *Aushada dravyas* proves to be more effective if administered after *Panchakarma* therapies in prescribed *Kaala* or the time said in *Shastras*. Instead, if performed without taking *Kaala* into account, several complications of the procedure need to be encountered.

#### **CONCLUSION**

*Panchakarma*, a unique concept of Ayurveda with more emphasis on *Kaya shodhana* or the detoxification of the body helps in maintenance of the positive health, enhances the benefits of *Rasayana* and does the *Roga prashamana*. Administration of *Panchakarma* therapies in right time or the *Kala* knowing its importance and the utility leads to success of the treatment.

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**Cite this article as:**

I. B. Kotturshetti, Yogitha Bali M.R, Gurubasava S. Hiremath. Role of Kaala (Time) In Kayashodhana (Detoxification of Body). AYUSHDHARA, 2020;7(1): 2573-2580.

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

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