



Importance Of Bhasajya Kala In The Management Of Diseases

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Ayurvedic system of medicine is unique due to its personalized approach in the patient management. Because subtle are the Vikalpas of Dosa and Dusya. The transforming moeity itself is in a state of flux and is highly prone to be affected by individual, diurnal and seasonal variabilities. The same Bhesaja may not be given I two patients afflicted with the similar disease. This reflects the Purusam Purusam Viksya Siddhanta of Caraka. It can be explained by an example. In Medoroga, there is Medodhatvagnimandya. Stimulation of Medodhatvagni and Lekhana of the Dhatu is the target to be achieved by the physician. The Bhasajya Kala, at this juncture offers a range of Agni -Bhesaja interaction to suit the disease and diseased. The Pratah Kala could be advocated in a patient who is physically and mentally strong to bear the rapid metabolic effects of the Bhesaja by Agni, due to unaltered potency of medicine used. If the patient is old, women, and anxious (Satvadurbala), the same Bhesaja can be given at the Pragbhakta Kala or Nisa Kala. The quick metabolic effects of Bhesaja are reduced to a great extent in Pragbhakta Kala, as food follows the Bhesaja intake and in Nisa Kala due to Kala Prabhava, which slows down all the metabolic activities of the body.

Key words:- Bhesaja, Bhasajya Kala, Medoroga, Medodhatvagnimandya, Lekhana.

Introduction

Kala is unique and specific causative factor of all type of effects, at the same time, it is unavoidable. It is described as *Anayathasiddha Nimitta Karana*, means no action is possible without the causative association of Kala. That is why, Ayurveda being science of life, gives emphasis on the concept of Kala. Though, Kala has relationship with all the effects, to prove it practically in the clinical aspect, the problem was undertaken. The Bhesaja and Kala relation is explored in various shades by the ancient Acaryas. Bhasajya Kala exemplifies the applicability of concept of Kala in the management of diseases. Acarya Vagbhata has stated that *Kalo Bhasajya Yoga Krt* (A. S. Su. 1/45), which means Kala fulfills the aim of administration of Bhesaja. In accordance, Acarya Caraka says that Bhesaja given at appropriate Kala is more efficacious than one given at inappropriate Kala. *Optimum digestion and metabolism in a healthy individual is attributed to Agni*. The hypoactivity of Agni produces majority of disorders like Agnimandya, Jvara, Atisara and Grahani. So, *the essence of all the therapeutic interventions is to reestablish, maintain and preserve the integrity of Agni*. The Bhesaja is the means used by the physician to restore the transforming capacity of Agni. The rate of metabolism of Bhesaja by Agni is affected by factors - food, type of Bhesaja used, time of administration and Sariravastha. The stalwarts of Ayurveda have designed the Bhasajya Kala, in which food is predominantly used as a vehicle to achieve the expected therapeutic results. The Pancamahabhutas are in a latent state of activity in Anna and in Bhesaja, they could be conceived to be in the dynamic phase. The sequence of food- Bhesaja, by the choice of appropriate Bhasajya Kala could be decided by a physician according to the Agni- Bhesaja interaction needed in a specific disease and diseased.

The activity of a Bhesaja, anticipated by a physician is also determinental in the choice of Bhaisajya Kala. For Rasayana purpose, the Agni - Bhesaja interaction should stimulate the Agni at all levels - Jatharagni, Bhutagni and Dhatvagni. So, Acarya have advocated the Pratah Niranna Kala. When Dipana Dravya is to be given in a patient of Agnimandya, augmentation of Jatharagni is achieved by the administration of Bhesaja at the MadhyabhaktaKala. Here localized Agni – Bhesaja Interaction is also facilitated due to Samana vayu association. Kala and Agni, both have been accorded the status of Parinamakarabhava by the Acaryas. *Thus, a thorough knowledge of Agni - Bhesaja interaction in the Bhaisajya Kala will help in the quick action, with reduced dose and for prolonged duration of the medication used.*

ETYMOLOGY:

The Karma or task of a physician is known as Bhesaja.

1. It is a wide meaning of the term, as it comprises all the therapeutic interventions done by a Bhisak.
2. Bhesa means that which dispels the fear of diseases.

Bhaisajya Kala can be understood under the following aspects:

1. An appropriate time of administration of Bhesaja

If the Vyana component of Vata is vitiated, the Bhesajya Kala is time after morning meals.

2. A particular frequency for administration of Bhesaja.

In Svasa, Kasa and Pipasa, the Bhesaja should be given frequently.

Number of Bhaisajya Kala as per various classics:

(Ref. C. Ci. 30/298; Su. U. 64/65; Ka. S. Khi. 3/43, Sa. S. P. K. C. 2/2, A. S.Su. 23/12, A. H. Su. 13/37)

Caraka, Susruta, Kasyapa and Astangahrdayakara are unanimous about Dasa Ausadha Kala. Sarngdhara has classified the Dasa Ausadha Kala into five and Samgraha (Astanga) has added one more Kala making *Ekadasa Ausadha Avacarana Kala*.

Caraka 's Ausadhveksa Kala :

The Kala in consideration with the Bhesaja is Ausadhveksa Kala and they are ten in number. *Pratah Niranna Kala* is specified by Caraka. It is considered by Cakrapani into the Bhuktadau Kala. i.e., the Bhuktadau Kala has been split by Cakrapani into two *Pratah Bhuktadau Kala* and merely Bhuktadau Kala. Taking into consideration the physiology of Sarira which is different with respect to Vata, activated at both Pratah Bhuktapascat Kala and Sayam Bhuktapascat Kala it has been specified as two separate Kala, realigning the Ausadha Kala to ten . The later authors have added to the Ausadhasevana Kala, Antarabhakta Kala (Su. U. 64) If we observe the exact Kala of administration of Antarabhakta Kala, as per the commentators, it is Madhyanha; which could be included into the *Dinaveksa Kala* of Caraka. Same is true for the Nisa Kala which is also a component of the Dinaveksa Kala .

Susruta's Ausadha Kala:

The Kalas are 10 in number. Instead of Niranna word, *Abhakta Kala* is coined by Acarya Susruta. The activity of Bhesaja in this Ausadha Kala is explained in detail, it could be stated that *it was an initiative to describe the pharmacodynamics*. As other Acaryas, Susruta has not split the Adhobhakta Kala. It is very important to note that he has not taken the components of vitiated Vata into consideration, while designing the Dasa Ausadha Kala. He has mentioned the Antarabhakta Kala and restored the number of Ausadha Kala to ten. The term 'Sabhakta' is used to define Bhaktasamyuktam Kala of Caraka

Kasyapa's Das Ausadha Kala:

Ten Kalas have been described by Kasyapa for intake of Bhesaja. He has coined *Purva bhaktasya* for Bhuktadau Kala of Caraka, *Madhyebhaktasya* for Bhuktamadhye; similar to Susruta he has not split the Bhuktasyadah Kala into morning and evening components. He has *described the local activity of Bhesaja*

given at a particular Kala, which could be stated as his unique contributions. Components of Vata vitiated has not been taken into account by him. Antarabhakta Kala has been mentioned as Bhaktayohomadhya by Kasyapa.

Astangasamgraha's Ekadasa Ausadhavacarana Kala:

Eleven Kala have been advocated by Astangasamgrahakara for administration of Ausadha in accordance to the Aturavastha. He has added Nisa Kala to the already specified Dasa Kala by previous Acaryas. He has followed the suit of Susruta and Kasyapa by not taking into consideration separate morning and evening components of Adhobhakta Kala in the number of Ausadha Kala, but while mentioning the specific indications of advocacy of the Kala, he has divided the Kala into - Pratah Adhobhakta Kala and Sayam Adhobhakta Kala separately in accordance with the Vyana and Udana Vayu predominance . Antarabhakta Kala of Susruta is also described. *A conglomeration of all factors is considered by Acarya Vrddha Vagbhata -viz- the type of patient, activity of Bhesaja at a particular Kala and component of Vata vitiated, which have been dealt by Acarya Caraka in the concept of Sadaveksa Kala.*

Astangahrdaya's Dasa Samana Ausadhi Kala:

Acarya specifies that the Kala are specially meant for Samana Ausadhi. Abhakta Kala is coined as *Annam* by Vagbhata. He has imitated Samgrahakara by mentioning Nisa Kala.

Sarngdhara's Panca Ausadhasevana Kala:

Sarngdhara has simplified the *Bhesaja Grahana Kala* into five, at the sametime, the Kala mentioned by previous Acaryas have been included into the five Kala. *Prabhata Kala*, i.e. the Kala when sun has just rose is used to define Pratah Niranna Kala of Caraka. *Divasa bhojana Kala* - the Kala during the day with reference to meals has been classified into *Bhojanagra Kala* i.e. Bhuktadau Kala of Caraka; *Bhojana Madhye* is similar to Madhyabhakta Kala of Caraka, *Bhojananta Kala* is similar to the Bhuktapascat Kala; *Purvam anteca bhojanat* is the Samudga Kala of Caraka. The third Kala is *Sayantane bhojana Kala*; it is classified into Grasa Grasantara Kala which is indicated for Udana Vayu vitiated conditions, while all the previous Acarya have indicated the same for the Prana Vayu vitiated conditions. Bhuktasya ante sandhyasya is in contrast asked to be given in Prana vitiated conditions. The *Caturtha Kala* is the Muhurmuhu Kala and *pancama Kala* is Nisa Kala; In short, the time during meals during the day is divided into four Kala and but during evening into two Kala; and hence *an attempt has been done by Sarngdhara to include all the important Bhaisajya Kala mentioned by previous Acaryas into the five.*

Controversies regarding Dasa Bhaisajya Kala:

Most of the Acaryas exhibit unanimity regarding the number of Bhaisajya Kala but there is marked difference of opinion with respect to the individual components of the Bhaisajya Kala. The various opinion of the commentators of Caraka Samhita, regarding the Dasa Bhaisajya Kala is as follows - In the Nirantarapadavyakhya of Acarya Jejjata, summary of the opinion of other commentators is observed.

(A) First opinion of the commentators is as follows:

- (1) Pragbhakta Kala
- (2) Pratah Madhyebhakta Kala
- (3) Sayam Madhyebhakta Kala
- (4) Pratah Bhaktapascat Kala
- (5) Sayam Bhatktapascat Kala
- (6) Grasa Kala
- (7) Grasantare Kala
- (8) Samudga Kala
- (9) Bhuktasamyukta Kala
- (10) Muhurmuhu Kala

In these components of Bhaisajya Kala, it can be seen that Madhyabhakta Kala has been considered twice i.e.

- (1) Pratah Madhyabhakta Kala
- (2) Sayam Madhyabhakta Kala

If one recollects the Dasa Bhaisajya Kala of Caraka the Madhyabhakta Kala when considered twice, the Bhaisajya Kala should have reached eleven but it has been restored to ten by not considering Pratah Niranna Kala. Jejjata is not in support of this view.

(B) Second opinion of the commentators:

1. Pratarasadi Kala
2. Pratarasamadhyam Kala
3. Pratarasantam Kala
4. Sayamasadih Kala
5. Sayamasamadhyam Kala
6. Sayamasantah Kala
7. Samudga Kala
8. Bhukta samyukta Kala
9. Sagrasa Kala
10. Grasantara Kala

In these Bhaisajya Kala put forth by the commentators, Bhukta Madhyabhakta Kala has been spilt into two viz.

- (1) Prataharasamadhyam
- (2) Sayamasamadhyam as well as Bhuktadau Kala has been considered twice as under;

- (1) Pratarasadih
- (2) Sayamasadih

Consequently, the Bhaisajya Kala should have been twelve, but here the number has been realigned to twelve by deleting.

- (1) Muhurmuhur Kala
- (2) Pratah Niranna Kala

Acarya Jejjata has not recommended the second opinion of other Acarya.

(c) Opinion of Acarya Gangadhara

1. Bhuktadau Kala
2. Bhuktamadhyam Kala
3. Bhuktapascat Kala
4. Muhurmuhu Kala
5. Samudga Kala
6. Bhaktasamyuktam Kala
7. Grasa Kala
8. Grasantare Kala
9. Pratah Niranna Kala
10. Pratah pathyadyuktam Kala

Critical analysis of all the opinion of the commentators.

First opinion of the commentators:

1. Pratah Madhyabhakta Kala
2. Sayam Madhyabhakta Kala

The Madhyabhakta Kala has been divided into two Kala; on the basis of morning and evening time. In this Kala, the Samana Vayu is in a state of stimulation. The Bhesaja given in this Kala, will act on Samana Vayu; irrespective of whether it is given in the morning or evening. Here the day and night division does not alter the physiology of the body in relation to the component of Vata activated. Thus, there is no logic evident in the consideration of two Kalas namely - Pratah and Sayam Madhyabhakta Kala, they could be cohered into a single Madhyabhakta Kala.

Second opinion of the commentators:

1. Prataharasadih Kala
2. Sayamasadih Kala

It could be considered as a single Bhaisajya Kala as Asadhi Kala, in the view of the Apana component of Vata which is active at both the Kalas. In both the Kala, time in between the meals in the morning and evening, Samanavayu exhibits a state of dynamism. Thus Bhesaja given at both the Kala will show similar action as far as component of Vata involved is considered, hence one could cohered to one i.e Asamadhya Kala.

Opinion of Acarya Jejjata :

This have been done by Acarya Jejjata on the grammatical pretext. But a subtle understanding will reveal that here the basic difference lies in the Bhaisajya Kalpana or the formulation of the Bhesaja used. Bhukta Kala is when the Bhesaja is given with peya and manda while Sambhukta Kala means the Bhesaja is given with variety of the foods. Here the variety of food could include both peya and manda. Thus the time of administration is same in both the Kala i.e. along with food ; except for the food variety which is consumed. Hence could be considered as one and the same.

Pratah pathyadiyuktam has been put forth by Acarya Jejjata as a separate Bhaisajya Kala, instead of splitting Bhuktapascata Kala into Pratah and Sayam components. But only specification of this Kala is that it is given in the morning with wholesome diet; offers no ground to accept it as a separate Bhaisajya Kala.

Opinion of Acarya Gangadhara :

In these components of Dasa Bhaisajya Kala, Acarya Gangadhara has considered only one Bhuktapascat Kala against (1) Pratah Bhuktapascat (2) Sayam Bhuktapascat Kala of Acarya Caraka, and has realigned the number to ten by adding Pratah pathyadiyuktam.

Opinion of Acarya Cakrapani :

Cakrapani has classified the Dasa Bhaisajya Kala on the basis of action of the Bhesaja given at the particular Kala in accordance with the physiology of the body at the specific class. Mainly the Vata vitiated has been taken into account for division of the Bhaisajya Kala. The Bhukta pascata Kala has been separated into Sayam and Pratah Kala because the status of the Dosas and component of Vata activated is different in both the Kala. Although the both Grasa and Grasantara Kala exhibit activity on the Pranavayu; but there is marked difference in the time of administration (Grasa Kala i.e.) with each morsel and (Grasantara Kala) in between two or more morsels. Hence cannot be considered as one.

In view of the different opinion of the commentators, the division done by Acarya Cakrapani is more applicable as far as the physiology of the body is concerned.

OPINION OF COMMENTATORS REGARDING BHAISAJYA KALA:

(1) Niranna Kala:

Bhesaja should be administered on empty stomach. All the commentators unanimously agree that Bhesaja should not be given with food i.e. they should not be mixed, in this Kala. Hemadri only specifies that once the food consumed is digested; Bhesaja should be given and after its digestion food should be given i.e. it should be given on empty stomach. Indu adds that Bhesaja given 2 hrs after sunrise in the morning is Niranna Kala.

Activity of Bhesaja in this Kala :

It becomes highly potent due to no contact of Bhesaja with food. Bhesaja Virya remains unaltered. Agni and Bhesaja interaction is initiated in this Kala. Thus the disease in which Abakta Kala is mentioned, will definitely eradicate the disease concerned.

It is advocated in the following situations –

Type of patient : A strong person in whom Agni is in a stimulated condition can only tolerate the Bhesaja given at the Abhakta Kala. A debilitated person, whose Dhatu and Dosa status is weak, cannot bear the quick metabolic effect of the Bhesaja. They will experience immediate and severe Balaksya.

Physiology of the Sarira at this Kala: The Amasaya and Srotas are devoid of Kapha, at the Pratah Niranna Kala. Kapha is the entity of the body which can withstand and is responsible for the resistance of change. When the channels are devoid of Kapha, the Bhesaja has a direct interaction with Agni and produces quick and strong effects over the Sarira. The Agni at all levels Jatharagni, Bhutagni and Dhatvagni could be stimulated if given Bhesaja in this Kala.

Type of Disease: A strong disease expects a strong Bhesaja at the proper Kala i.e. Niranna Kala. This Kala provides quick and definite cure of the disease.

(2) Pragbhakta Kala:

Time before meals is the appropriate Kala for Bhesaja intake. There is no difference of opinion regarding this Kala, Bhesaja is to be given before meals. Hemadri comments that Bhesaja intake should be immediately followed by food.

Activity of Bhesaja in this Kala :

The Bhesaja intake is followed by food. Thus it is the first target of Agni and not the food. Thus it undergoes Asu Paka (quick metabolism) at the same time, it does not produce Balaksya, the reason being the food follows the Bhesaja, thus the Bhesaja cannot produce severe metabolic effects on the body. The mechanical expulsion of the Bhesaja is avoided due to food intake; hence can be given in the debilitated patients. The Bhesaja admits elective affinity for Amasaya and eradicates Dosas indulged. The time before meals, is the Kala when Apana Vayu is in a state of activity. Thus the Kala is the appropriate for Apana Vayu vitiated conditions. Apana Karya Ksetra is Adah kaya, hence the Apana Kala is the appropriate time to enhance the strength of lower part of the body.

(3) Madhyabhakta Kala:

Bhesaja is administered in between meals. Cakrapani and Indu specify that after half of food is consumed Bhesaja should be given again followed by the remaining half of food.

Activity of the Bhesaja in this Kala - is described by Kasyapa and Susruta practically. Bhesaja is compressed by meals at the upper and lower ends, so it cannot spread and is *forced to act locally and eradicates the Sthanika Dosas*. *Systemic action of the Bhesaja on the Sarira bhavas i.e. Dosa & Dhatu is delayed*. In between meals, Samanavayu is stimulated. Samana Vayu and Agni association is known, thus the Paka of Bhesaja is enhanced. As Samana Vayu and Pacaka Pitta are both situated in the Kosta, Madhyabhakta Kala is indicated in Paittika and Kosthagatavyadhi and in Samana Vayu vitiated conditions. In persons who have a hypoactive agni (Mandagni), this is the Kala to administer Agnidipaka Bhesaja.

(4) Adhobhakta Kala:

Kala after meals is the Adhobhakta Kala, both after lunch and dinner. Cakrapani reminds of both morning and evening time after meals. Indu and Hemadri add to the above by quoting that immediately after meals is the time of medicine intake.

It is useful in the following conditions :

(1) *Component of Vata vitiated is the determinant :* After lunch, there is stimulation of Vyana Vayu and after dinner of Udana Vayu, there by they could be given in the respective disorders.

(2) *Purpose of administration of Bhesaja is the determinant:* The Gati of Udanavayu which is active in this Kala facilitates the activity of Bhesaja to enhance the strength of the upper part of the body. (A. H. Su. 12).

(3) *In Krsa patients for sthulikarana purpose.*

(5) Antarabhakta Kala :

Appropriate Kala for Bhesaja intake is Madhyanha, when the previous food consumed is digested; and after Bhesaja is metabolised ,again food is to be taken in the evening. (Indu _A.S.Su23/18).

Cakrapani's definition of the term is similar to that of Sabhakta Kala, hence to be deferred. Comment of Indu regarding Antarabhakta Kala demands attention when he says that after digestion of food consumed in the morning, medicine is to be taken in the afternoon and after digestion of medicine, again food is to be given to the patient in the evening.

In this Kala the Agni is in a stimulated condition (Madhyanha) (Pitta Kala) A.H. Su.1.

Acaryas advocates the Antarabhakta Kala in the following conditions :

1) *The type of patient is the determinant :*

In a person who has Diptagni ,the power of transformation is tremendous, and thus the Bhesaja is metabolised when consumed in between the meals.

2) *The component of vata vitiated is the determinant :*

In Vyana vitiated disorders, Antarabhakta Kala is advocated.

3) *Activity of Bhesaja on the Sarira :*

It is mentioned by Acarya Susruta, that Bhesaja given at this Kala shows Hrdaya, Pathya, Dipana and Manobalakara effect.

(6) Sabhakta Kala:

Bhesaja is given mixed with food in this Kala. Except for Indu, all the commentators agree that Bhesaja should be consumed along with food. Indu specifies that Bhesaja is processed or cooked along with food or it is given along with food.

Conditions in which this Kala of administration is indicated -

1) *Disease afflicted is the determinant :* Sabhakta Kala is employed in Arocaka Aruci and in Sarvangasamsrita vyadhi.

2) *Type of patient involved is the determinant :* In women, old, children, debilitated patients, delicate and patients who exhibit unpalatability to certain medicinal formulations are to be given Bhesaja at the Sabhakta Kala .

3) *To maintain the integrity of Bala and Agni :* The Sabhakta Kala is indicated.

(7) Samudga Kala :

Bhesaja is administered at the time immediate before and after meals. All commentators are unanimous about Samudga Kala i.e. Bhesaja to be given before and after meals. Indu and Hemadri specify that Bhesaja should be consumed immediately in relation to food.

Bhesaja acts as a box for Ahara, so it is called as Samudga Kala.

It is advocated in the conditions :

(1) *Vyadhi - Hikka, Kampa and Aksepaka*

Main Dosas involved in the pathogenesis of Hikka are Kapha and Vata. (C. Ci.17/8). As per A. H. Su.1/7, Kapha is situated in the Urdhvasarira and Vata in the Adah Sarira. The simultaneous pacification of the Kapha and Vata (i.e. action on both the parts of body) Urdhvah and Adha Samsrita Dosa, is possible, when Bhesaja is given at the Samudga Kala.

In Aksepaka, the Dosas are localized in Pani and Pada as per the Samprapti (C. Ci. 28/150), so the action of Bhesaja is expected on both the extremities of the body is availed of by the administration of Bhesaja at the Samudga Kala.

As Samudga Kala acts on Vyana, Apana and Udana Vayu, it could be advocated Bhasajya Kala in Vataja Prameha and Sukradosa (Su. Ni. 1/20).

In all the diseases, Hikka, Kampa and Aksepaka, there is *an evident Gati Vikrti* of Vata Dosa. Samudga Kala probably helps in the therapeutic activity of the Bhesaja in correcting the pathogenesis and establishing Anulomana of Vata Dosa.

(2) *Status of Dosas in the Body :*

When the vitiated dosas are localized in the both upper and lower parts of the body, Samudga Kala is indicated.

(3) *Type of Patient :*

A patient who consumes light food, should be given Bhesaja at Samudga Kala.

(4) *Type of Dravya :* Pacana Dravya is advised to be given in this Kala.

(8) **Muhurmuhu Kala :**

Frequent administration of Bhesaja regardless of Bhukta or Abuktavastha is Muhurmuhu Kala. Except for Cakrapani, all are of the opinion that Bhesaja should be given irrespective of meals.

Diseases in which it is indicated are -

Pranavahasrotogata Vyadhis-Svasa, Kasa, Hikka, Udakavaha Srotogata Vyadhis-Trt and in Annavaha Srotogata Vyadhi -Chhardi and Visa (Vikara). It is worth noting, that all the conditions mentioned above demand quick and immediate therapeutic intervention. They could also be life threatening, unless proper treatment is done. In Svasa, the vegavastha is the condition in which prompt medication is mandatory. In Kasa, when the patient is restless of coughing, in Trt there is severe Rasa ksya laksana. Same is the case with Chhardi. In Visavikara, the Visa shows quick effect, which is to be counter acted by the frequent administration of Visaghna dravya. It seems that *parenteral administration was less frequent in the older periods, thus Acaryas found Muhurmuhu Kala as a remedy to tackle these conditions*. While all the commentators are of the view that Bhesaja should be given regardless of the meals in the Muhurmuhu Kala, it means the prakrt paka of Bhesaja when given in morning and in evening i s slow. In Muhurmuhu Kala, in order to achieve immediate relief, the Bhesaja is given frequently, so its concentration is maintained as its paka is enhanced. The Kala provides an opportunity to administer large quantity of Bhesaja to pacify the aggravated Dosas.

It serves the following purposes -

1. To maintain the constant level of concentration of the drug and make it *more bio available*.
2. To provide more sublingual absorption of drug for faster action.

In Muhurmuhur Kala, time interval should be minimum in between consequently administered drug.

(9) **Grasa Kala :**

Means with each and every morsel of food, Bhesaja is given. Aruna datta and Hemadri opine that the Bhesaja is to be mixed with each morsel of food.

It is advocated in -

1) *Prana Vayu vitiated conditions :*

2) *Formulations mean to stimulate Agni :* Curna, vataka, Leha and Agni dipana yoga are to be given at the Grasa Kala..

3) *Type of Bhesaja :* Vajikarana Bhesaja are to be given at the Grasa Kala. :

According to modern pharmacokinetics, it can be said that Bhesaja given at Sagrasa Kala facilitates absorption of the Bhesaja from the buccal mucosa and reaches systemic circulation and thus facilitates rapid onset of action.

(10) **Grasantara Kala :**

Means Kala in between two morsels, is meant for Bhesaja intake.

It is advocated in the following suitations -

1) *Component of Vata vitiated :* In Prana Vayu vitiated conditions, Grasantara Kala is mentioned:

2) *Aim of administration of Bhesaja :* For Vamana purpose, the Grasantara Kala is indicated. Susruta mentions that is the Kasaghna Dhuma which is indicated at the Grasantara Kala (Su.ci.40/18) in which kasa comes in bouts and so Grasantara in take of Dhuma provides symptomatic relief.

3) Disease is the determinant : Grasantara Kala is indicated in Hrdroga.

(A.S.Su. 23)

(11) Nisa Kala :

Nisa Kala of Bhesaja administration, is after digestion of food consumed; Indu (A.S. Su.23/18) specifies the exact Nisa Kala is the time after the evening meal has digested and 3 hours have passed.

A brief account of the data suggested by Acaryas in which Bhesaja is given at the Nisa Kala is -

1) *Site of disease is the determinant -*

Urdhvajatrugata vikara means the diseases occurring above the neck. Sira, Urah, and Kanta are the Kapha Sthanas situated in the area (A.H. Su.11). Thus the Nisa Kala, in which there is Kapha vrddhi due to Kala Prabhava is an aid to the activity of Bhesaja used and Bhesaja admits elective affinity (Gamitva) towards the part, above the neck.

2) *Purpose of administration of Bhesaja :*

Lekhana and Brunhana Bhesaja are indicated at the Nisa Kala by Sarngdhara (Sa.S.P.Kh.1). Sarangdhara also specifies Ananna condition for Bhesaja intake.

3) *Type of Bhesaja is the determinant :*

Pacana and Samana Bhesaja should be given in this Kala.

Limitation of advocacy of Das Bhaisajya Kala :

Bhaisajya Kala is for Sodhana or Samana Ausadhi ? The query is answered in the Dipika commentary on in(Sa.S.P.K.2/2) The application of Bhaisajya Kala is *not meant for emergency conditions* as they demand other specialised modalities of therapeutic intervention. In the 13th chapter of Sutrasthana of Astangahrdaya after a

brief description of Sodhana Kala in the Vyadhita, Vagbhata describes, the Dasa

Ausadha Kala, which are renamed as *Samana Ausadha Kala* in the Ayurveda Rasayana commentary.

PARTICULAR VYADHI AND BHAIJAJYA KALA :

Acaryas have specifically mentioned Bhaisajya Kala only for a few Vyadhi like Visa, Kasa and Pipasa (Muhurmuhur Kala) and Samudga Kala is indicated for Kampa and Aksepaka. In case of other diseases, while describing the Cikitsa, Bhaisajya Kala is specially indicated. With the help of the Dosa involved in the pathogenesis, the Sthana of the Vyadhi, and status of Agni, one can deduce the Bhaisajya Kala for any Vyadhi with the help of Yuktipramana , Bhaisajya Kala in the other diseases indicated in the formulation could be,

In Arsa - Pragbhakta Kala

In Grahani - Madhyabhakta Kala

In Galamaya - Sayam Bhuktapascat Kala

In Panduta - Pratah Bhuktapascat Kala

In Visama Jvara - Pragbhakta, Madhyabhakta , Bhuktapascat Kala

In Vaivarnya - Sayam Bhukta Pascat Kala

In Pinasa - Nisa Kala

In Gulma - Madhyabhakta , Pragbhakta Kala

In Vatabalasaka - Pragbhakta , Adhobhakta Pratah Kala

Concept Of Agni In Relation To Bhaisajya Kala :

Agni is the transforming moiety of the body. The integrity of the human body is solely influenced by the status of Agni. (*Yukte Ciram Jivayati Anamayah*). (C. Ci. 15/4). Agni, in the human body is in *a state of flux* as Cakrapani (C. Su. 5/3) reveals that the Aharamatra which depends upon the metabolic capacity of Agni, is to be determined by an individual every day, every time he is to take food. All the endeavour of a physician is to maintain the Agni in the optimum form and it is opined to be the essence of all the therapeutic interventions (A.S. Ci. 12/41). Bhesaja + Agni reaction is influenced by various factors mainly (1) *Substance which is subjected to Parinama* (2) *The quantum of Agni available for the reaction* (3) *Time for which the reaction is allowed to occur*. Of relevance, to the present context, is that the *rate of metabolism of Bhesaja by the Agni which is controlled by the appropriate Bhaisajya Kala*.

Expected Activity Of Bhesaja And Ausadhikala

Sodhana Ausadhi :

The Bhesaja which expels the aggregation of provoked Dosa from their site of accumulation through the upper or lower orifices of the body is defined as Sodhana Dravya (Sa.S. P.K. 4/8). Here it is referred to the internal purification of the body. The time of administration of Sodhana Bhesaja is *Pratah Kala*. This Kala serves the following purposes.

- (1) For Sodhana action of the Bhesaja, its Virya should be unaltered (A. H.Su. 9)
- (2) The Sarira avastha at this Kala also facilitates the activity of the Bhesaja because the channels in the body are clear. There is Rikta Kosthatva and Srotas are devoid of Kapha, thus the Dravya can easily eradicate the Dosas out of the body (C. Si. 2/17, A.s. Su. 28/15).
- (3) The Virya inherent in the Sodhana Dravya is fully manifested as only Ausadhi is interacted by Agni. eg. s C. Ci. 1-1/77s C.Ci. 16/64

Samana Dravya :

The Dravya which pacifies the aggravated Dosas without expulsion from the body as well as which does not provoke the equilibrated Dosas is known as Samana Dravya (Sa. S. P. K. 4/2). The time advocated for its administration is *Nisa Kala*.

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This Kala serves the following purposes :

- (1) Sarira Avastha at this Kala is described by Caraka as Hradya is sluggish, channels are contracted there is Kostha Samvratatva and predominance of Kleda. (C. Ci. 15).
- (2) Kapha ++ and Pitta + Vrddhi is the status of Dosas as per Kala advocated by Indu (A. S. Su. 23).
- (3) Agni is in a state of hypoactivity
- (4) All these conditions contribute to the ciraparinamana of the Ausadha consumed, as it is expected by the Bhisak in order to achieve the action performed by the Samana Dravya. eg. (Formulation of Guduci) in a patient of Kustha.

Types Of Ausadhi Dravya And Bhaisajya Kala:

Rasayana Ausadhi :

The Rasyana therapy aims the promotion of strength and vitality of the Deha Dhatus. It is stated to contribute to the integrity of the sapta - dhatus and thus increases longevity(C. Ci. 1/7). The time of administration of Rasayana Dravya is *Pratah Kala*. The following could be reasons for these specific Kala.

- (1) At this moment, Sarira Srotas, are devoid of aggravation of Kapha Dosa (A.S. Su. 23/13).
- (2) Bhesaja and Anna contact is avoided i.e. administered on empty stomach.
- (3) Virya of the Rasayana Dravya is unaltered.
- (4) Potential energy inherent in the Rasayana Dravya is fully stimulated by the action of Agni Vyapara i.e. Virya is actualized i.e. kinetised
- (5) All the Agnis are stimulated - Jathragni, Bhutagni and Dhatvagni.
- (6) Resultant is the accomplishment of the Prasastva of the Sapta Dhatu.

Vajikarana Ausadhi :

The Vajikarana Dravya seeks to promote virility. The Bhesaja Kala mentioned is *Grasa Kala* for the administration of Vajikarana Dravya. Acarya Caraka describes the qualities of the Vrsya Dravya as those which are sweet in taste, unctuous and heavy in quality and are vitalisers, bulk promoting and exhilarating (C.Ci.2).

Grasa Kala provides the following advantages:

- (1) Sagra Kala causes manifestation of all the Gunas of the Vrsya Dravya consumed and they can be well appreciated by the patient.

(2) Grasa Kala is indicated in the Prana Vayu vitiated conditions. The function of normal Pranavayu is to regulate the intake of food. (A. H. Su. 12/4). It is thus stimulated and receptive at this Kala. These are subtle and fine activities. This effect on the Indriyas and Citta enhances karma of the Vrsya dravya by the impulse received by the Pranavayu, when given at the Grasa Kala.

Time of Administration of Drugs:

Time of administration of drugs in allied sciences, can be broadly classified in to 5 groups as under.

Repeated:

Emetics - centrally and peripherally acting emetic chlorpromazine is given 15 ml by mouth and repeated after 20 min if the individual fails to vomit.

Before meals:

Osmotic laxative - For quick onset of action, it is given early in the morning before breakfast.

Sucralfate - It's acid neutralization is slow, in fact it has no antisecretory effect and has poor acid neutralizing capacity. It forms a gel which coats the ulcer crater for more than 6 hours. This coating is not disturbed by food. The dose after taking into consideration its mode of action is given 1 hour before a meal and at bed time.

Insulin :

It is injected 1/2 hr before each major meal.

Ingestion of mixed meal results in the release of gut hormones (gastrin, pancreozymin, secretine, gastrointestinal peptide and enteroglucagon) into portal circulation. Absorption of food results in elevation of blood glucose, aminoacids and free fatty acids. The overall effect of food ingestion and absorption is to increase the insulin glucagon ratio.

After Meals:

Antacids : If given 1 hour after meal ,shows much longer effect for about 3-4 hours. The dose is thus given 1 and 3 hrs after meal because in the fasting state they have only a transient intragastric buffering effect.

Benzyl Penicillin : Food interferes with its absorption, hence should be given orally at least thirty minutes before or two to 3 hours after a meal.

Salicylates : Irritate the mucous membrane of stomach. Acidic pH of stomach favours the existence of salicylate in the unionized form, which is water insoluble, hence adheres to gastric mucosa producing gastric irritation and there is inhibition of Prostaglandin synthesis .They also reduce motility of stomach and increase gastric emptying time. To avoid gastric irritation, salicylates may be administered after food.

Along with food:

Nitrofurantion : It is one of the quinolones, it is rapidly and completely absorbed from the GIT. Food in the GIT increases its bio availability. The dose is administered orally along with food.

Empty stomach:

Thyroxine : Absorption is more complete on empty stomach but can be variable and incomplete when taken with food.

Chronotherapy:

Awareness of the recent research workers towards applied aspect of Kala is evident in the form of chronotherapy and chronopharmacology. Our bodies rhythms, also known as biological clocks, take their cue from the environmental and the rhythms of the solar system.

Definition And Scope Of Chronotherapy:

Co-ordinating biological rhythms (Chronobiology) with medical treatment is called chronotherapy. It considers a person's biological rhythms in determining the timing and sometimes the amount of medication

to optimize a drugs desired effects and minimize the undesired ones. It does not involve new medicines but using old ones differently. Revising the dose schedule, reformulating a drug so that its release into the blood stream is delayed, or using programmable pumps that deliver medicine at precise intervals are some of the simple changes that may reap enormous benefits. Drugs that are reformulated as chronotherapeutics are regulated by the food and drug administration. Chronotherapeutics present new challenges to regulators and scientists alike.

Among additional factors that must be considered with respect to chronotherapy are:

- (i) Time of day a drug is administered
- (ii) Time related biological factors such as seasonal disorders.
- (iii) Patients normal routines (eg. eating times and sleep patterns).

Chronotherapy in present scenario:

Making chronotherapy the focus of more clinical trials would be welcome news to many in the medical community, according to a 1996 American Medical Association Survey. The study found that about 75 percent of the doctors surveyed said they would like more treatment options to match a patient's circadian or daily rhythms. But chronotherapy has a way to go, considering that only 5 percent of the doctors surveyed said they were 'very familiar' with the subject.

Chronotherapy in certain diseases:

Asthma : Normal lung function undergoes circadian changes and reaches a low point in the early morning hours. Chronotherapy for Asthma is aimed at getting maximal effect from bronchodilator medications during the early morning hours. A long acting Theophylline preparation, could be taken once a day in the evening because Theophylline blood levels to reach their peak and improved lung function during the difficult early morning hours.

Arthritis : People with osteoarthritis, the most common form of disease, tend to have less pain in the morning and more at night. But for people with rheumatoid arthritis, the pain usually peaks in the morning and decreases as the day wears on. Chronotherapy for all forms of arthritis uses standard treatment, nonsteroidal anti-inflammatory drugs and corticosteroids; however the dosages are timed to ensure that the highest blood levels of the drug coincide with peak pain. For osteoarthritic sufferers, the optimal time for a non steroidal anti-inflammatory drug would be around noon or mid afternoon. The same drug would be more effective for people with rheumatoid arthritis when taken after the evening meal.

Treatment schedules with corticosteroids in Arthritis that involve an evening or night time ingestion result in greatest cortisone suppression. Morning or early afternoon once a day schedules are least detrimental. Thus the best way to minimize or avoid side effects of these medicines, especially when large doses are involved, is to take them in the morning.

Myocardial infarction :

Myocardial infarction often occur shortly after waking up because blood pressure surges at that time, drugs have been developed that can be taken at night, whose action is delayed several hours until they are most needed.

Chronovera :

It is the first chronotherapeutic treatment that uses chronobiology to treat cardiovascular diseases. Taken once a day, chronovera provides 24 hours blood pressure control, but it is designed to deliver peak concentrations of drug Verapamil in the morning when blood pressure, heart rate and incidence of cardiovascular events are the highest. This unique delivery system which is new technology known as COER-24 (controlled onset extended release) applies pharmacological properties of the drug to the greatest effect during the periods when blood pressure and heart rate are the highest.

Ulcers :

Stomach secretes almost 30% more acid after dinner, during night. A single dose of Ranitidine taken at night can block acid synthesis.

Conclusion:

The conclusions obtained are presented.

1. Bhaisajyakala is the time of administration of Bhesaja (Karana). It is to be decided by the Karana (Bhisak) in an effort towards the establishment of Dhatu Samya.
2. Number of Bhaisajya Kala are ten as per Caraka, Susruta, Astangahrdaya and Kasyapa, eleven are described in Astangasamgraha and Sarngdhara has condensed the Bhaisajya Kala into five.
3. A scrutiny of conditions considered by the Acaryas while designing the Bhaisajya Kala, revealed that the 48% of the factors are related to Bhesaja. This is concomitant with the term 'Ausadhaveksa Kala' of Caraka.
5. Bhaisajya Kala are meant for Samana purpose and not to be advocated in emergency conditions.
6. Enteral route of administration is advocated for the intake of medicines in all the Bhaisajya Kala.
7. Majority of Bhaisajya Kala (66%) are described in relation to food.
8. The rate of metabolism of Bhesaja by Agni is controlled by food with the aid of proper Bhaisajya Kala.
9. Bhaisajya Parinamakara Bhavas could be Agni, Vayu, Kala and Samyoga.

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