Chronotherapy, Formulation specific Bhaishaja sevana kala – A bird’s view

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ABSTRACT

Any substance which helps to bring the vitiated doshas back to normalcy and the body to a healthy state is known as Bhaishaja. Acharya Vagbhata describes, “Kalobhaishajya yoga krt”. A medicine exerts its action properly, only if administered at proper time. Why kaala is mandatory in Aushadha sevana? Kala is Anayathasiddha Nimitta Karana, means for every action in the Universe is bound with the causative association of kala and hence Aushadha employed in a proper Kaala will result in expected kaarya. Time specific administration of medicine results in optimum pharmacological utility of the drug. Bhaishaja sevana kala a classical concept is presently studied as chronotherapy in the contemporary science gaining its importance in medical practice. Further here an attempt is made to highlight the formulation specific Bhaishaja sevana kala and its rationality, relevance with the present understanding of chronotherapy in certain diseases. The literature review was collected from different Ayurvedic Classics, review and original articles on chronotherapy and Bhaishaja sevana kala.

Keywords: Bhaishaja yoga sevana kala, Chronotherapy.

INTRODUCTION

Specificity is an art that helps in distinguishing and providing accuracy in any field of science. Treatment comprises mainly Drug specificity: Depending on its habitat, potency, time of collection, properties etc., Prakruti specific i.e., unique to an individual. But formulation and disease specificity with respect to time of administration is a unique concept mentioned in the classics.

Acharya Vagbhata describes, “Kalobhaishajya yoga krt” [1]. In order to provide efficacious treatment it is essential that the medicine is released into the blood stream at a specific time. The variation in doshas occur throughout the life in the form of physiological variations like increase in kapha during the early morning, first stage of digestion and childhood and the pathological condition like exacerbation of diseases like pratishyaya (rhinitis), kasa (cough) and so on. Thus to get the desired effect of the treatment consideration of that particular time for administration of medicine is valuable. Synchronizing the drug therapies with body rhythms will indeed improve the result of treatment and that is studied presently under “chronotherapeutics” [2].

The concept of Bhaishaja yoga sevana kala entail the importance of right time of drug administration for accuracy in treatment irrespective of disease status, prakruti etc. Similarly chronotherapy is the time regulated treatment of diseases coordinating with the biological rhythm of the body; therefore the present article provides an insight to highlight formulation specific bhaishaja kala and understand the link between the body rhythms and time of drug administration classically.

MATERIALS AND METHODS

The review data was collected from Ayurvedic classics like Bhaishajya Ratnavali and Sahasrayogam and also includes review and original articles on chronotherapy and Bhaishaja sevana kala.

REVIEW

Knowledge of specific bhaishaja kala in various diseases based on dosha is described in Bruhattrayee. Time specific administrations of formulations in specific diseases are categorized below.
| Disease (vyadhi prakarana) | Yoga | Bhesaja kala |
|---------------------------|------|-------------|
| Jwara                     | Guduchyadi kwatha | Prataha |
|                          | Rasnadi kwatha | Muhurdandantara |
|                          | Kwathapanchaka | Prataha |
|                          | Deerghapatrakakanadi yoga | Prataha |
|                          | Guduchipanchamulikwatha | Prataha - sayam |
|                          | Kaphaketu (bruhat) | Prataha - sayam |
|                          | Jwarabhairavo rasa | Prataha |
|                          | Bhanuchudamani rasa | Prataha |
|                          | Maharajavati | Prataha |
|                          | Sarvatobhadrarasa | Prataha |
|                          | Vishamajwarantakaloha | Prataha |
|                          | Lakshmivilasa rasa | Prataha |
|                          | Mrutasanjeevani sura | Muhurmuhu |
| Jwara-atisara             | Kutajavaleha | Prataha |
| Atisara                   | Putikadiwatha | Sayam |
|                          | Purnachandrodaya rasa | Prataha |
|                          | Bruhat gaganasundara rasa | Prataha |
| Grahanvi                  | Grahanishardula churna | Prataha |
|                          | Vartakugutika | Bhojanottara |
|                          | Dashamula guda | Prataha |
|                          | Bruhatmethimodaka | Prataha |
|                          | Madanamodaka | Prataha |
|                          | Jeerakadimodaka | Prataha |
|                          | Bruhatjeerakamodaka | Prataha |
|                          | Agnikumaramodaka | Prataha |
|                          | Shri nrupativalabha rasa | Prataha |
|                          | Bruhat nrupativalabha rasa | Prataha |
|                          | Loha parpati | Prataha |
|                          | Vijaya parpati | Prataha |
|                          | Panchamrutamandura | Prataha |
|                          | Mahashatpalaka ghrita | Bhaktena saha or nirbhakta |
|                          | Kameshwaro modaka | Bhojanadi or bhojanante |
| Arshas                    | Dhatturadi churna | Nishi |
|                          | Kankayana modaka | Prataha |
|                          | Guda bhallataka | Prataha |
|                          | Nalinipratradi prayoga | Prataha |
|                          | Krishnatilakalka | Prataha |
|                          | Pranada gutika | Purva - paschath |
|                          | Nagarjuna yoga | Bhaktasya upari |
| Agnimandy                 | Hingwashtaka churna | Pratama kavala bhuktam |
|                          | Lavangadi vati | Prataha |
|                          | Agnisandeepano rasa | Sandhyayo (Pratah - sayam) |
|                          | Bhaktavipakavati | Bhaktottareeya |
|                          | Pashupato rasa | Bhojanante |
|                          | Ajeernabalakanalo rasa | Bhojanante |
|                          | Shankhavati-mahashankhavati” | Prataha |
|                          | Mahashankhavati “” | Bhojanante |
|Keyword| Description|
|---|---|
|Kravyada rasa| Bhojanante|
|Shardulakanji| Bhojanante|
|Gudashtakam| Prataha|
|Krimiroga| Prataha|
|Krimidhulijalaplovlo rasa| Prataha|
|Kriminhashano rasa| Prataha|
|Panduroga| Prataha|
|Aymala prayoga| Bhaktena saha|
|Triphaladi swarasra| Prataha|
|Trikatrayadi loha| Bhojanadi-madhya-anta|
|Panchamrta loha mandoora| Prataha|
|Trayushnaadi mandoora| Jeerne cha bhojanam|
|Anandodaya rasa| Sayam|
|Pandupanchanana rasa| Prataha|
|Dhatyarishta| Abhakta|
|Rajayakhsha| Pratikantha|
|Asraharaishita| Prati yama|
|Rajatadiloha| Prataha|
|Shrungarabhra rasa| Prataha|
|Rasendra gutika| Jeerne cha bhojanam|
|Eladimanta(ghrita)| Prataha|
|Chagadaya ghrita| Prataha|
|Kasa| Prataha|
|Chandramrutra rasa| Prataha|
|Vijayabhairavo rasa| Prataha|
|Chandramrutra loha| Prataha|
|Bhogottara gutika| Prataha|
|Hikkashwas| Prataha|
|Bhargisharkara| Prataha|
|Murcharoga| Prataha|
|Triphala yoga| Prataha|
|Madataya| Prataha|
|Eladyo modaka| Prataha|
|Mahakalyana vati| Prataha|
|Unmada| Pratika|
|Puranaghrita| Prataha|
|Vatavaryaddhi| Sayam|
|Dashamulyadi kwatha| Prataha|
|Talakeshwara rasa| Prataha|
|Ashtadhashatikaprasaranitaikala| Bhojanath (with food)|
|Mashtaila| Uttarabhattikam|
|Vatarakta| Prataha|
|Amrutadya ghrita| Bhojapanana|
|Amavata| Prataha|
|Shuntayadi kwatha| Prataha|
|Triphaladi loha| Prataha|
|Panchanjara loha| Prataha|
|Rasona pinda(mahan)| Prataha|
|Vatari guggulu| Prataha|
|Vydhiphishdura guggulu| Prataha|
|Shularoga| Prataha|
|Hingwadi churna| Prataha|
|Shulaharana yoga| Bhojanante|
|Vidangadi modaka| Prataha|
|Shambukadi vati| Prataha-bhojanakaale|
|Shankarasa| Prataha|
|Vidyadhara rasa| Prataha|
|Shularaja loha| Prataha|
|Dhatri loha“”| Bhaktadi|
|Koladi mandura| Bhaakti-Madhya-Ante|
| Disease | Ayurvedic Medicine |
|---------|--------------------|
| Chatuhasama mandura | Bhaktadi-Madhya-Ante |
| Bheemavatataka mandura | Bhaktadi-Madhya-Ante |
| Taramandura guda | Bhaktadi-Madhya-Ante |
| Shatavari mandura | Bhaktadi-Madhya-Ante |
| Guda mandura | Bhaktadi-Madhya-Ante |
| Puga khandha | Prataha |
| Udaavarta anaha | Naracha churna |
| Pippalyadi kwatha | Prataha |
| Guda sura | Prataha |
| Rasona prayoga | Prataha |
| Gulmaroga | Hingwadichurna vatika(Tritiya) |
| Guilmakalanalo raso bruhat | Prataha |
| Vruscheeradyarishta | Jeerne cha bhakta |
| Hrudroga | Kakkubhadi choorna |
| Mutrakruchra | Trinetrakhya rasa |
| Mutraghata | Naladitrinamula kwatha |
| Ashmari | Shwadamshtradi kwatha |
| Varunadya loha | Prataha |
| Prameha | Sphatika churna |
| Mehakunjakesari rasa | Prataha |
| Shilaajatu prayoga | Jeerne cha bhojane |
| Medoroga | Loharishta |
| Udana roga | Samudradya churna |
| Punarnavadi kwatha | Pratama kavala bhukta |
| Pheelhayakrut roga | Shankhadravako rasa |
| Shothari churna | Prataha |
| Shothakalanalo rasa | Prataha |
| Trikatvadi mandura | Prataha |
| Rasabhramandoora | Prataha |
| Vridhrioga | Hareetaki prayoga |
| Triphala kwatha | Prataha |
| Galagandaadi roga | Kanchanara guggulu |
| Shleepada | Pippalyadya churna |
| Vidradhi roga | Shobhanjana kwatha |
| Upadamsha roga | Rasashekhara |
| Sayam |
| Kushtaroaga | Amrutabhallataka |
| Ekavimshatiko guggulu | Prataha |
| Udarad-sheeta-pitta-kota | Ardrakakhandam |
| Prataha |
| Amlapitta | Paneeyabhtka gutika |
| Prataha |
| Avipattikara churna | Bhojanadou-madhya |
| Kshudhavathi gutika | Prataha |
| Pippali ghrita | Prataha |
| Drakshadya ghrita | Saha bhojane |
| Mukharoga | Rasendra vati |
| Prataha |
| Karnaroga | Sarvdhi vati |
| Prataha |
| Netra roga | Tripaladiva ghrita mahat |
| Bhojanadi-madhya-ante |
| Shiroroga | Rasachandrika vati |
| Prataha |
| Shirvaga | Soubhagya shunti |
| Prataha |
| Sutika roga | Sutikaari rasa |
| Prataha |
| Baalaroga | Shivamodakam |
| Prataha |
Rasayana prakarana  Triphala rasayana  Pragbhukte-vibhitake  
Bhuktw-(bojana paschat)-amalaki  
Jaranante – hareetaki  
Purvahne-bhuktwagre(pragbhakta)-bojanasya(bhojanante)  
Kimshuka kshara bhavita pippli rasayana  Bhojanadou-pradoshe(sayam)  
Bhuktwa bhakshite(prathakahala)  
Amruttavartika  Shivanikshika  
Vajeekarana  Shatavari modaka (bruhat)  Prataha or bhojanakaale va  
Mahakameshwar modaka  Prataha  
Vanari vatika  Prataha-sayam  
Amashayaroga  Pipalayodikwatha  Prataha  
Gadodwega  Ksheerodahiras  Prataha – sayam  
Snayuroga  Swarnasindhiruras  Pratahasayam  
Maharajatavati  Prataha  
Somaroga-mutratisara  Himamshuras  Prataha-madhyahna-nisha  
Shukremeha  Shilajatadivati  Prataha  
Aupasargikameha  Sphatikadichurna  Prataha-sayam  
Phirangaroga  Saptashali vati  Prataha  
Mastishka roga  Trivrutaadi modaka  Sayam  
Dhatirghrita  Prataha  

It is interesting to note that in almost all the vyadhi prakarana the time of administration of medicine is during morning (pratah) and only in the context of shula roga for pain management, the bhashaja is to be administered before, between and after food. Apart from this, formulations like bruhat kapha ketu rasa, vanari gutika, swarnasindhura rasa [3], Shatavarayadi Kashaya (in sarvavatara is to be administered - morning with eranda taila and sindhava lavauna for Koshta shodhanartha and to maintain the agni in the evening with jeeraka and sarkara after meals) [4] etc., are indicated to be taken both in morning and evening suggestive of its utility in treating chronic diseases.

Table 2: Formulations administered in morning and evening [3, 4]

| Formulations               | Indications                                                                 |
|----------------------------|----------------------------------------------------------------------------|
| Bruhat kapha ketu rasa     | Kantaroga, shiroroga, peenasa, kaphasanghata                               |
| Vanari vatika              | Dhvajabhanghi, vajeekara, sheeghradraavi                                   |
| Swarnasindhura rasa        | Snayuroga                                                                  |
| Sphatikadichurna           | Vranameha                                                                  |
| Kameshwar lehya            | Tridoshajaya raktapitta, kasa, shwasa, kshaya, pandu, chardi, adhmana, guilma, shula, hidhama, hridroga, arshas, grahami, asthirava, mutraghata, ashmari, mutakrichra, prameha, sarvaroga hara, bala-pushtikara, shukra vardhaka, ayushya, vajikara and shreshta rasayana |
| Shatavarayadi Kashaya      | Sarva vataroga                                                             |
| Gudchiphanchumukkwatha     | Jeernajwara, kaphadhwamsi                                                  |
| Amruttavartika             | Deepana, kantikara, keshya, chakshushya, pangu, balapradra                 |
| Ksheerodadhi rasa          | Gadodwega, urahakshata, kshaya, raktapitta, prameha, vatafapattaya roga, haleemaka, pandu, jeernajwara, arshas |

Another interesting factor here is, various yogas have different action based on the time of administration such as Dhatri loha: before food in pitta vataja roga; between food in vishtambha janya roga and prevents vidaha; after food in viruddha anna krita dosha [3].

DISCUSSION

Rationale behind time specificity of drug administration can be incorporated based on the enregement of the three humours – vata, pitta, kapha causing respective diseases.

Nidhig dikadi kwatha: administered in evening for urdhwajatruvikara and ratri jwara, in morning for other types of jwara [4].
Based on dosha predominancy [2]

With reference to kala (time), on the basis of aggravated doshas –

With respect to seasons: Kapha diseases are manifested in spring (vasantha rtu), Pitta diseases are manifested in the summer, and Vata diseases are manifested in (the beginning of) the rainy seasons [3], mainly these time are used for elimination of Dosa for prophylactic purpose and kindling the agni, medicaments are supplemented; for example Chandrakala rasa- greeehma and Sharad kala- jwara, amlapitta, pradara, Gudabhransha, rasajanya murcha, raklapitta, sarva mutrakruchra, sarva prameha [3].

With respect to Day: During the end of the night and the day, Vata diseases get aggravated, Kapha diseases get aggravated during the onset of morning and evening, and Pitta diseases get aggravated during the midday and midnight.

With respect to phases of life: During old age diseases caused by Vayu, during middle age diseases caused by Pitta and during the adolescence, diseases caused by Kapha take a serious turn.

With respect to digestion of food: Generally Vata diseases get aggravated after the digestion of food, Pitta diseases get aggravated during the digestion of food and Kapha diseases get aggravated immediately after taking food.

Thus, Vata-Pitta-Kapha respectively exhibits their marked presence in the end, middle and beginning of life, day, night and digestion. Similarly the Breshaja is administered in accordance with their state of predominancy [4].

For example: talakeshwara rasa is administered during early morning hours when Vata is predominant, dasamulyadi kwatha is to be administered in the evening, oral administration of masha tala is after food (uttarabhaktikam) beneficial in Vata vikara [3].

Example: Guda bhallatala, mahakalyanavati, naracha churna, Kanchanara guggulu etc.

Absorption of medicines is the most important factor to provide maximum productiveness. Eventually, on an empty stomach absorption takes place easily. Hence, maximum therapeutic efficacy can be expected. Therefore apana vayu related disorders can be checked as the seat of apana Vata is large intestine. Also in chronic diseases to achieve the maximum potential of the drug, empty stomach is preferred.

Gastrointestinal absorption of the drug is influenced not only by the gastro intestinal motility, the intraluminal pH, blood flow to stomach and enzymatic action, but also depends on the circadian rhythms. All the above mentioned factors are also influenced by the time of the day. Drugs that are lipophilic are found to have more rate of absorption in early morning hours rather than any hour of the day [6].

Clinical studies report most of the drugs seem to have a higher rate or extent of bioavailability when they are taken in the morning than when they are taken in the evening particularly in relation to cardiovascular active drugs, non-steroidal anti-inflammatory drugs (NSAIDs), local anaesthetics, anticancer drugs, psychotropic drugs, antibiotics and anti-asthmatic drugs [7].

Administration of ACEs inhibitors and antihistamines on an empty stomach increase their effectiveness through increased absorption [8].

Absorption of thyroxine is reported to be more complete on empty stomach but can be variable and incomplete when taken with food [9].

In peptic ulcer patients, high gastric acid secretions; slow gastric emptying and vomiting at night causes pain, gastric distress and acute exacerbation of the disease which are most likely in the late evening and early morning hours. Suppression of nocturnal acid is an important factor in duodenal ulcer healing. Nocturnal administration of H2 antagonists or morning administration of proton pump antagonist medications not only reduce acid secretion more effectively but also promote ulcer healing and reduce ulcer recurrence [10].

Further it can be understood that classically more number of formulations are advised to be administered in the early morning hours of the day.

2) Madhya bhakta – in between food:

Indication: Pittaja, Koshtagata – pakwashayagata vyadhi like grahani, gulma, samanavayu vikruti, mandagni, shula.

Example: dhatri loha, avipattikara choorna

Diseases related with the agni can be checked but very few formulations are indicated during this time, mainly shulahara formulations are mentioned.

3) Adhobhakta - After food

This kala is subdivided into pratah-paschatbhakta and sayam-paschatbhakta with different indications as below.

Indication:

a. In disorders of Vyana Vata medicine is given at the end of morning food. Vyana vata resides in chest, circulates all over the body and is responsible for many functions like flexion and extension of limbs, does locomotion etc. imbalance of which causes naspunsakata (debility), shopha, jwara, kusha, visarpa, udasinta (depression), body ache, tingling, numbness.
Example: Nagarajuna yoga, masha taila

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 [11].

b. In disorders of Udana Vata medicine is given after dinner. Udana vata governs memory, speech, enthusiasm, vitality etc and its symptoms are reported to be highest during the night and their zenith in the morning. Therefore administration of asthma medications immediately after dinner is not recommended. For example rasendra gutika is indicated in Sarvarupa kshaya, kasa, amlapitta, aruchi, raktapitta and is administered after digestion of food which can be either morning or evening food.

Example: Nidhardhikadi kswatha, vartaku gutika, Kravyada rasa

Anti-psychotic drugs: Chlorpromazine produces maximum sedative effect when administered at midnight and maximum anti-psychotic effect when administered immediately after awakening [12]. Haloperidol shows both sedative and antipsychotic effect when administered in the evening [12].

4) Antarabahkta - in between two meals

As per Aharavidhi in Ayurveda, two meals per day are conducive to health. Therefore in the mid-day, that is after digestion of the breakfast and at about mid night, following the digestion of the dinner, coincides with pitta pradhana kala, during this time medicine is administered.

Indication: As per Acharya Sushruta, the bheshaja given at this kala shows hrdaya, pathya, deepana, manobalakara effect [13], administration of medicines for a long duration, and in disorders of vyanavayu, this time period is favorable. Therefore formulations indicated as jaranate, jeerne cha bhojane can be considered under this kala.

Example: Shilajatu prayoga, Rasendra gutika

Plasma protein binding: Albumin and acid glycoprotein reach their nadir during nocturnal rest and their zenith in the morning. Therefore drugs bound to plasma protein, like valproic acid, carbamazepine, diazepam, lignocaine, prednisolone show increase in free fraction at night [14].

5) Sabhakta

Indication: aruchi, sarvanga samshrita vyadhi like kushta, prameha etc.

Example: Amrutadya ghrita, ayomala prayoga, ashtadasha shashthika prasaranini taila

Antidiabetic drug glimepiride, a new generation sulfonylurea derivative should be administered with breakfast or the first main meal of the day. It has absolute bioavailability and the absence of food interaction guarantee highly reproducible pharmacokinetics [8].

6) Samudgakala

It is also noted that most of the shula hara formulations are to be administered before-between –after food, for sustained release of drug so that pain is under control throughout the day, while samudga kala refers to only before and after food, the combination of samudga and Madhya bhakta can be appreciated.

Indication: Vyana-apana-udanavayu vikruti, hikka, kampa, akshepa, vataja prameha, shukradosha.

Example: pranada gutika

7) Muhurmuhu:

Indication: Pranavaha strotogata Vyadhi- Shvasa, Kasa, Hikka; Udakavaha strotogata Vyadhi – Trishna; Annavaha strotogata Vyadhi - Chhardi, Visha

Example: Mrutasanjeevani rasa, rasnadi kwatha, asraraharishtha

8) Sayam/Nishi

At night– the second highly preferred kala as per formulation specific, where diseases of tridosha are indicated.

(It can also be noted that the formulations under antarabahkta holds good for nishi as well as it coincides with the time after digestion of the evening meal. For example rasendra gutika is indicated in Sarvarupa kshaya, kasa, amlapitta, aruchi, raktapitta and is administered after digestion of food which can be either morning or evening food).

Indication: Kapha Dosha Vikruti, Urdhvajatrugata Vyadhi, lekhana, brumhana

Example: trivrutada modaka, dhatturadi churna, anandodaya rasa

Allergic rhinitis: The symptoms are reported to be highest during the morning. Administration of long acting antihistamine at night provides better results in controlling this morning discomfort rather than taking the medication in the morning as is frequently recommended [7].

Bronchial asthma is characterized by chronic airway inflammation and limitation of airflow in the airways, and attacks begin with paroxysms of coughing, wheezing, and dyspnea. Statistically based on chronopharmacological studies it is observed that the development of asthma symptoms and many types of broncho-spastic attacks is more common from midnight to early morning from 2 A.M and 6 A.M every day. The main aim of Chronopharmacotherapy for asthma is to obtain maximal effect from bronchodilator medications during the early morning hours. Based on chrono-pharmacology, several drugs for asthma have been developed. One example is the bronchodilator uniphyll, a long-acting theophylline taken once a day in the evening causes theophylline blood levels to reach their peak and improve lung function during the difficult early morning hours [6].

Cancer: Chronopharmacotherapy of cancer is based on the chronobiological cycles which differ in the normal human bone marrow cells is around noon while DNA synthesis in lymphoma cells has a peak near midnight, an administration of s-phase active cytotoxic therapy at night with DNA synthesis leads to a decrease in the tumor cell count with a little effect on normal cells [10].

Arthritis: The symptoms of rheumatoid arthritis worsen in the morning. Administration of long acting NSAIDs like flubirofen, ketoprofen and etodolac at bedtime optimizes their therapeutic effect and reduces or averts their side effects [8].

Hypercholesterolemia: For the reevaluation of the circadian rhythm of cholesterol biosynthesis, 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitors were firstly introduced in the morning doses. The free cholesterol levels have been reported to be lowest at 2 p.m. to 6 p.m. and peak at 6 a.m and morning. It is observed that evening dosing frequency of some marketed preparations like Lescol, Mevacor, Prachol and Zocor is more effective than morning dosing. On the basis of the studies it is recommended that five of the six currently approved HMG-CoA reductase inhibitors can be administered between
the evening meal and bedtime; atorvastatin calcium or Lipitor may be an exception because of its long elimination half-life [15].

In Hypercholesterolemia, mainly lekhana action is indicated and rheumatoid arthritis being a kapha vata dosha vikruti, in all these conditions bhashaja kala indicated is nishi.

CONCLUSION

Most frequently indicated Bhaishajya yoga sevana kala being Pratah bhakta is suggestive of its utility in quick and complete absorption of drug.

Muhurmuhu bhashaja kala is advised in emergency conditions like status epilepticus, status asthmaticus, hiccups, poisoning etc. wherein repeated administration of medicine is required for effective control of the life threatening condition. Mrutasanjaneevani sura is repeatedly administered in life threatening fevers

Prathama kavala bhukta (first bolus of food) helps kindle the agni, and has anulomana and rochaka effect as specified for Hingwashtaka churna.

Administration of Bhaishajya during Bhajanadi serves in sustained release of drug, and reduces irritation of teekshna dravyas.

Bhaktadi-Madhya-Ante sevana kala is indicated in conditions which require regular instillation of medicine like Triphaladaya ghrita in netra roga, Mandura yogas in shula.

The medicines administered during Jeerne cha bhojane kala are most easily receptive to the body during this period and hence useful in agni deepti and various chronic diseases. Basandra gutika, Triyushnadi mandura, Vruscheeradyarishta etc., are administered after digestion of previous meal.

Prataha-madhyaha-nishi sevana kala is indicated in mooratisara, as repeated administration helps for sangrahana and to control the symptoms.

Bheshaja sevana kala acts like a guided missile to tackle disease at its most active phase, by précising drug intervention when doshas are at its peak and thus helps prevent irrational, frequent usage of drugs throughout the day thereby reducing the drug intake.

Thus maximum bioavailability of the drug was the prime consideration.

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REFERENCES

1. Acharya Vagbhata. Astanga Sangraha, Volume I, Translated by K Srikantamurthy, 2nd ed. Varanasi: Chaukhamba Orientalia, 1999.
2. Jeeth A, Alokath DD, Sujnana VS, Shreevatha. Utility of Bhashaja Sevana Kala – Open End Comparative Clinical Trial. J of Ayurveda and Hol Med (JAHM) 2014; 2(7):4-7. Available from: http://www.jahm.in/index.php/JAHM/article/view/201
3. Shri Govind Das, Bhaishajya Ratnavali. 18th ed. Varanasi: Chaukhamba Sanskrit Sansthan, 2005.
4. Nitheshwar K, Vidyarthi R, Sahasrayogam Text with English Translation, 2nd ed. Varanasi: Chaukhamba Sanskrit Sansthan, 2008.
5. Acharya YT, editor. Charaka Samhita of Agnivesha, Chikitsa Sthana. Reprint edition. Varanasi: Chaukhamba Sanskrit Sansthan, 2010; p.647
6. Maurya KK, Semwal BC, Singh N, Srivastava V, Rupshana K. Chronopharmacology: A tool for therapy of diseases, IRJP 2012; 3(5):128-132. Available from: http://www.irjponline.com/admin/php/uploads/1081_pdf.pdf
7. Sajan J, Cinu TA, Chacko AJ, Litty J, Jaseeda T. Chronotherapeutics and Chronotherapeutic Drug Delivery Systems. Tropical Journal of Pharmaceutical Research 2009; 8(5):467-475. Available from: https://www.ajol.info/index.php/tjpr/article/view/48091
8. Bushra R, Aslam N, Khan YA. Food–Drug Interactions. Oman Medical Journal 2011; 26(2):77-83. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3191675/
9. Satoskar RS, Bhandarkar SD, Rege NN. Pharmacology and Pharmacotheapeutics. Vol. 1. 21st ed. Popular Prakashan Private Limited, 2009; p.858.
10. Suresh S, Pathak S. Chronotherapeutics: Emerging Role of Biorhythms in Optimizing Drug Therapy. Indian J. Pharma. Sci. 2005; 67(2):135-140. Available from: https://www.researchgate.net/publication/286378237_Chronotherapeutics_Emerging_role_of_biorhythms_in_optimizing_drug_t
11. Sasanoo MT, Pooja BA, Gupta SC, Geetha L, Kumar B. Importance of Bhaishajya Kala in the Management of Disease. IAHM 2012; 2(2):353-365.
12. Sulthana N, Sultana A, Madhavi BB. The Clock which Times Us- Chronobiology, Chronopharmacology and Chronotherapeutics – Next Frontier in Optimizing Drug Therapy. World Journal of Pharmacy and Pharmaceutical Sciences 2015; 4(12):400-419. Available from: file:///F:/Downloads/article_wjpps_144865468.pdf
13. Acharya YT, editor. Sushruta Samhita of Sushruta, Uttaratantra. Varanasi: Chaukhambha Sanskrit Sansthan, 2008; p. 813.
14. Sharma P, Vyas B, Sarangdevot YS, Sharma A, Sharma B. Chronopharmacology: An Overview, 2013: Available from: http://www. pharmaturor.org/articles/chronopharmacology-overview?page=1%2C2&quicktabs_lastest_article_tabs=1
15. Singh R, Sharma PK, Malviya R. Review on Chronotherapeutics – A New Remedy in the Treatment of various Diseases. European J. of Biol. Sci. 2010; 2(3):67-76. Available from: https://www.researchgate.net/publication/228471495_Review_on_Chronotherapeutics-A_New_Remedy_in_the_Treatment_of_Various_Diseases.

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