

Concept of Aushadha Sevana Kala (Time of Drug Administration)

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ABSTRACT

The therapeutic success of any medicine not only depends on the quality of the drug and its dosage but also on the time of its administration—termed as Aushadha Sevana Kala in Ayurveda. This concept plays a crucial role in determining the pharmacodynamics and pharmacokinetics of medicines, aligning their effect with the biological rhythm and digestive strength (Agni) of the individual. The classical Ayurvedic texts describe various Kalās or time schedules such as Prāgbhakta, Madhyabhakta, Adhobhakta, Antarabhakta, Samudga, and Nishā, each chosen according to disease, Doṣha predominance, and drug potency. Modern pharmacology also emphasizes the significance of dosing schedules in maintaining drug plasma concentration and optimizing efficacy, correlating with the principles of chronopharmacology. This paper explores the classical foundation, scientific rationale, and practical importance of Aushadha Sevana Kala in promoting therapeutic outcomes, integrating Ayurvedic wisdom with modern scientific interpretation.

KEYWORDS: *Aushadha Sevana Kala, Ayurveda, Time of Drug Administration, Chronopharmacology, Agni, Dosha, Therapeutic Timing.*

INTRODUCTION

In Ayurveda, the administration of medicine is not a random act but a highly individualized therapeutic process. The timing of drug intake, or Aushadha Sevana Kala, has been given equal importance as the drug (Aushadha), dose (Matra), and route (Marga). The classical texts, including Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya, emphasize that when a

drug is administered at the appropriate time, its effect is maximized, adverse effects are minimized, and the patient's recovery becomes faster.

Modern pharmacology has also realized the importance of the biological clock in drug action. Concepts like circadian rhythm and chronotherapy indicate that the human body undergoes physiological variations throughout the day that affect drug absorption, distribution, metabolism, and excretion. Thus, the ancient wisdom of Aushadha Sevana Kala aligns remarkably with modern pharmacological science.

This paper elaborates the Ayurvedic understanding of Aushadha Sevana Kala, its classification, disease-specific timings, physiological and pharmacological correlation, and its relevance in the context of modern therapeutics.

LITERATURE REVIEW

The concept of *Aushadha Sevana Kala* (time of drug administration) is well-documented across classical Ayurvedic treatises, commentaries, and Nighantus, emphasizing that the timing of drug intake significantly influences its therapeutic success. The selection of the correct *Kala* (time) is considered as vital as the choice of the drug itself.

1. References in Charaka Samhita

In *Charaka Samhita Sutra Sthana* (5/13–17), Acharya Charaka highlights the importance of administering drugs in synchronization with the body's condition, food intake, and *Doṣha* predominance. He asserts that a medicine acts effectively only when taken at the appropriate time, considering *Agni Bala* (digestive power), *Koshtha Bala* (bowel condition), and *Roga Bala* (disease strength). The text explains:

“Kālah samyak prayukto hi rogān jayati na anyathā”

(Charaka Sutra Sthana 1/124)

Meaning – When medicine is administered in the proper time, it conquers disease; otherwise, it fails.

Charaka further categorizes *Aushadha Kala* based on food timing — *Prāgbhakta* (before meals), *Madhyabhakta* (during meals), and *Adhobhakta* (after meals) — and relates them to *Kapha*, *Pitta*, and *Vata* disorders respectively. He also emphasizes considering the day-night cycle, seasonal variation (*Ritucharya*), and patient’s constitution (*Prakriti*) for determining the best therapeutic timing.

2. References in Sushruta Samhita

Acharya Sushruta elaborates *Aushadha Kala* primarily in the context of *Kriya Kalpa* (treatment procedures). According to *Sushruta Chikitsa Sthana* (1/24–26), drugs given at improper times can lead to opposite effects or even toxicity. He prescribes specific timings for *Sneha Pana*, *Vamana*, and *Virechana* based on *Agni* and *Doṣha* dominance.

Sushruta also introduces *Ritu Kala* (seasonal time) and *Divas–Ratri Kala* (day-night time) as essential factors, showing a broader temporal awareness than *Charaka*. For example, he recommends purgation during the morning hours when *Pitta* is predominant and emesis in early daytime when *Kapha* is at its peak.

3. References in Ashtanga Hridaya

Vagbhata in *Ashtanga Hridaya Sutra Sthana* (1/13–15) provides a systematic classification of six *Aushadha Kālās* relative to food intake — *Prāgbhakta*, *Madhyabhakta*, *Adhobhakta*, *Antarabhakta*, *Samudga*, and *Nishā*. Each *Kala* is associated with specific *Doṣha* conditions and pharmacological objectives. His approach is more patient-oriented and practical, reflecting the evolution of therapeutic precision.

He states:

“Bhuktakāle yathārogyaṃ bhuktaṃ caivānu sevayet”

(*A. H. Sutra 1/14*)

Meaning – The drug should be administered in relation to food intake, according to the disease condition and patient’s health status.

4. Commentaries and Nighantus

Commentators like *Chakrapani Datta* (on Charaka) and *Dalhana* (on Sushruta) provide interpretative clarity, explaining that *Kala* not only denotes time but also appropriateness of condition (*Avasta*). They highlight that even the most potent medicine becomes ineffective if administered without considering proper *Kala*.

In *Bhavaprakasha Nighantu* (Purva Khanda, 5th chapter), Bhavamishra expands on specific *Aushadha Kala* for various diseases such as *Jwara* (fever), *Kasa* (cough), *Atisara* (diarrhea), and *Amlapitta* (acidity), which indicates the practical application of this concept in classical times.

5. Modern Interpretations

Contemporary scholars such as R. H. Singh (2017) and P. K. Mukherjee (2021) have reinterpreted *Aushadha Kala* in terms of biological clock and circadian rhythms, relating Ayurvedic timing principles to modern chronopharmacology. The synchronization of drug delivery with natural physiological cycles is shown to enhance bioavailability, reduce adverse effects, and improve clinical outcomes.

Hence, the literature consistently underscores that *Aushadha Kala* is a vital determinant in the success of therapy, deeply rooted in classical Ayurvedic wisdom and validated by modern scientific reasoning.

CLASSICAL AYURVEDIC PERSPECTIVE

The Ayurvedic perspective on *Aushadha Sevana Kala* encompasses not only the mechanical timing of administration but also a holistic understanding of physiological, psychological, and environmental factors that influence therapeutic outcomes.

1. Conceptual Basis

The term *Aushadha* refers to any substance used to restore health or alleviate disease, while *Sevana* means intake or administration. *Kala*, in this context, signifies the specific time or circumstance that supports optimal drug efficacy. Thus, *Aushadha Sevana Kala* collectively denotes the appropriate time and condition under which a medicine should be administered to achieve maximum benefit.

This timing is chosen based on:

- The dominance of *Doṣhas* (Vata, Pitta, Kapha)
- Strength of *Agni* (digestive and metabolic fire)
- Condition of *Koshtha* (bowel habit)
- Disease nature and chronicity
- The strength and age of the patient (*Rogi Bala*)
- Season and time of day (*Ritu* and *Dina–Ratri*)

2. The Six Types of Aushadha Sevana Kala

The classical Ayurvedic texts categorize six major *Kalās* relative to food intake. Each has a distinct therapeutic indication and rationale:

(i) Prāgbhakta Kala (Before Meals)

- **Meaning:** Administration before taking food.
- **Purpose:** To clear channels and enhance *Agni* before digestion starts.
- **Indicated in:** *Kapha* and *Medas*-dominant diseases such as obesity, cough, cold, sinusitis, and indigestion due to sluggish metabolism.
- **Rationale:** Food increases *Kapha* naturally; hence, drugs taken before meals counter this and stimulate digestion.
- Example: *Trikatu Churna* for dyspepsia.

(ii) Madhyabhakta Kala (During Meals)

- **Meaning:** Drug given in the middle of food intake.
- **Indicated in:** *Pitta* disorders like hyperacidity, gastritis, and heartburn.
- **Rationale:** During food intake, *Pitta* is active; thus, drugs mixed with food balance its intensity and prevent irritation.
- Example: *Shatavari Kalpa* or *Ghee* preparations for gastritis.

(iii) Adhobhakta Kala (After Meals)

- **Meaning:** Administration immediately after food.
- **Indicated in:** *Vata* disorders such as arthritis, flatulence, neuralgia, and paralysis.
- **Rationale:** Food pacifies *Vata*; hence, postprandial administration prevents gas formation and supports nutrient absorption.
- Example: *Dashamoola Arishta* after meals.

(iv) Antarabhakta Kala (Between Meals)

- **Meaning:** Given between two meals.
- **Indicated in:** Mixed *Doṣha* disorders or metabolic disturbances.
- **Rationale:** Ensures balanced drug absorption when *Agni* is stable but not overloaded.
- Example: *Chyavanprash Avaleha* between breakfast and lunch.

(v) Samudga Kala (Before and After Meals)

- **Meaning:** Administration both before and after food.
- **Indicated in:** Complex or *Sannipataja* conditions where all *Doṣhas* are involved.
- **Rationale:** Double dosing enhances coverage over digestion stages and ensures comprehensive action.
- Example: *Guduchi Kwatha* before and after food in chronic fever.

(vi) Nishā Kala (At Night)

- **Meaning:** Administration during the night.
- **Indicated in:** Night-dominant or chronic conditions such as insomnia, constipation, and neurological disorders.
- **Rationale:** During night, *Vata* and *Pitta* dominate; medicines given then regulate sleep and nocturnal metabolism.
- Example: *Triphala Churna* or *Ashwagandha Churna* at bedtime.

3. Additional Classifications

Apart from the six primary types, Ayurveda also classifies *Aushadha Kala* based on **day-night cycle**, **seasons**, and **pathological states**:

Table 3: Expanded Aushadha Kala Classifications

| Basis | Kala (Time) | Example / Significance |
|-----------------|---|---|
| Day–Night Cycle | Morning, Noon, Evening | Used in <i>Dinacharya</i> -based treatments; e.g., <i>Nasya</i> in morning, <i>Abhyanga</i> in evening. |
| Ritu (Season) | <i>Vasanta</i> , <i>Grishma</i> , <i>Varsha</i> , <i>Sharad</i> , <i>Hemanta</i> , <i>Shishira</i> | Seasonal therapies; <i>Vamana</i> in <i>Vasanta</i> , <i>Virechana</i> in <i>Sharad</i> . |

| Basis | Kala (Time) | Example / Significance |
|------------------------|---------------------------|---|
| Avasta (Disease Stage) | Acute or chronic phase | Acute fever: after digestion; chronic arthritis: after meals. |
| Doṣha Dominance | <i>Vata, Pitta, Kapha</i> | Determines whether before, during, or after meals. |

4. Aushadha Kala In Relation To Agni

Agni—the digestive fire—is central to Ayurvedic pharmacology. Its intensity varies throughout the day and affects drug digestion and assimilation. When *Agni* is strong (midday and midnight), the body efficiently metabolizes drugs; when weak (early morning and evening), absorption may be poor.

Hence, *Aushadha Kala* is fixed according to *Agni Bala*:

- Strong *Agni*: Suitable for *Tikta* (bitter) and *Katu* (pungent) drugs.
- Weak *Agni*: Prefer mild *Madhura* (sweet) and *Snigdha* (unctuous) drugs.
- Irregular *Agni*: Timing between meals (*Antarabhakta*) is ideal to stabilize digestion.

5. Doṣha-Based Administration

Ayurveda emphasizes the functional predominance of *Vata*, *Pitta*, and *Kapha* at specific times of the day:

| Time of Day | Predominant Doṣha | Recommended Administration |
|------------------|-------------------|---|
| 6 a.m. – 10 a.m. | <i>Kapha</i> | Before meals (<i>Prāgbhakta</i>) for Kapha diseases |
| 10 a.m. – 2 p.m. | <i>Pitta</i> | During meals (<i>Madhyabhakta</i>) for Pitta diseases |
| 2 p.m. – 6 p.m. | <i>Vata</i> | After meals (<i>Adhobhakta</i>) for Vata diseases |

This *Doṣha-Kala* correlation provides a rhythmic framework for drug administration, ensuring harmony between medicine and body physiology.

6. Food and Aushadha Interaction

Ayurveda recognizes the synergistic and antagonistic relationship between *Aahara* (food) and *Aushadha* (drug). Food acts as a vehicle (*Anupana*) that influences the speed, direction, and intensity of drug action. For instance:

- *Madhu* (honey) before meals enhances *Kapha Shamana* effect.
- *Ghee* during meals pacifies *Pitta* and protects gastric mucosa.
- *Hot water* after meals promotes *Vata* regulation and digestion.

Thus, *Aushadha Kala* cannot be isolated from dietary context; it is an integrated system balancing medicine, food, and metabolism.

7. Role in Panchakarma and Rasayana Therapy

The timing of medicine in *Panchakarma* therapies like *Vamana* (emesis) and *Virechana* (purgation) is strictly regulated according to *Aushadha Kala*. Improper timing may lead to partial detoxification or complications. Similarly, in *Rasayana* therapy (rejuvenation), morning intake is preferred for adaptogenic herbs like *Amalaki* and *Brahmi* to synchronize with *Sattvika* dominance and daylight metabolism.

8. Philosophical Underpinning

At a deeper level, *Aushadha Kala* embodies the Ayurvedic philosophy of *Samanya–Vishesa Siddhanta* (principle of similarity and dissimilarity). The drug acts effectively when its qualities are opposite to the pathological state prevailing at that specific time. For instance, in *Kapha Kala* (morning), administration of hot, light, and pungent drugs neutralizes Kapha dominance.

SCIENTIFIC CORRELATION WITH MODERN PHARMACOLOGY

The Ayurvedic concept of *Aushadha Kala* finds scientific parallels in the modern fields of **chronopharmacology** and **chronotherapy**. These disciplines study how the timing of drug administration affects its absorption, metabolism, and action.

1. **Before Meals (Prāgbhakta)** – Similar to administering drugs on an empty stomach for faster absorption and rapid onset of action, like proton pump inhibitors or anti-asthmatic drugs.
2. **During Meals (Madhyabhakta)** – Corresponds to taking gastric-protective or lipid-soluble drugs that require food for absorption.

3. **After Meals (Adhobhakta)** – Parallel to giving drugs that may irritate the stomach lining if taken empty, such as NSAIDs.
4. **Night-time (Nishā Kala)** – Reflects modern practice in administering sedatives or antihypertensive drugs during nocturnal hours for circadian effect.

Research indicates that certain enzymes and hormones follow circadian rhythms; thus, drug metabolism varies throughout the day. For instance, corticosteroids exhibit better therapeutic effect when taken in the morning, aligning with the body's natural cortisol rhythm.

Hence, *Aushadha Sevana Kala* can be seen as an early form of chronotherapy that synchronizes treatment with biological time.

PRACTICAL APPLICATIONS IN CLINICAL PRACTICE

1. Personalized Treatment:

Aushadha Kala provides a framework for individualizing drug schedules based on *Doṣha*, digestion, and daily routine (*Dinacharya*).

2. Enhancing Drug Absorption:

By aligning drug intake with digestive strength, absorption is maximized, especially in herbal formulations.

3. Reducing Adverse Effects:

Administering medicines at appropriate times prevents gastric irritation, nausea, or metabolic imbalance.

4. Improving Patient Compliance:

Time-based prescriptions simplify regimen and enhance patient adherence.

5. Relevance in Panchakarma Therapy:

In detoxification procedures, the timing of *Sneha Pana* or *Vamana* drugs is critical for success, reflecting *Aushadha Kala*'s importance.

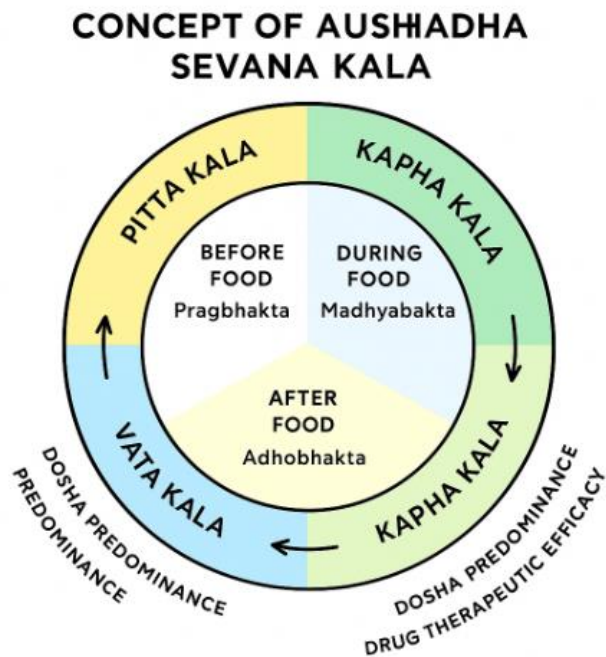


Figure 1: Schematic Representation of Aushadha Sevana Kala

RECENT ADVANCES AND FORMULATION RESEARCH

In recent years, Ayurvedic scholars and pharmacologists have begun exploring Aushadha Kala through clinical and experimental models.

Chronotherapeutic Ayurvedic Formulations:

Researchers have proposed synchronizing herbal drug release patterns with specific biological rhythms. For instance, Triphala capsules designed for nocturnal bowel activity.

Standardization of Drug Timing in Clinical Trials:

Modern Ayurveda research protocols now record the time of administration as a variable influencing therapeutic outcomes.

Ayurvedic Nutraceuticals:

Studies have shown that herbal tonics like Brahmi Rasayana produce better results when taken during the morning (Kapha-Pitta balance period) due to optimal absorption and mental freshness.

Integration with Modern Chronotherapy:

Ayurvedic time-based medication schedules are now being compared to modern controlled-release formulations to validate pharmacokinetic similarities.

Digital Aushadha Timing Apps:

Emerging digital Ayurveda platforms include time-reminder tools based on Aushadha Kala, aligning drug administration with sunrise, sunset, and digestive cycles.

CHALLENGES AND LIMITATIONS

Despite its strong theoretical foundation, Aushadha Sevana Kala faces several challenges:

Lack of Standardization:

Classical references differ slightly across texts; hence, unified guidelines are needed.

Limited Clinical Evidence:

Few controlled clinical trials have been conducted to validate Kala-based outcomes.

Modern Lifestyle Constraints:

Irregular food habits, altered sleep cycles, and stress disturb natural biological rhythms, making classical timings difficult to implement.

Documentation Gap:

Many practitioners neglect recording Kala during clinical observations, reducing the opportunity for evidence-based analysis.

DISCUSSION

The concept of Aushadha Sevana Kala beautifully bridges Ayurveda and modern pharmacology. Both systems recognize that the efficacy of drugs depends not only on their chemical nature but also on when and how they are administered. Ayurveda's time-specific administration is based on Doṣha cycles and Agni function, whereas modern pharmacology bases it on enzyme activity and circadian variation.

In the holistic Ayurvedic framework, Aushadha Kala reflects an integrated understanding of human physiology, environment, and time. The modern reinterpretation of this concept can revolutionize personalized medicine, offering safer and more effective drug delivery methods.

Thus, adopting Aushadha Kala into clinical practice, alongside evidence-based modern methods, can enhance therapeutic efficiency while preserving traditional integrity.

CONCLUSION

Aushadha Sevana Kala—the time of drug administration—is a cornerstone of Ayurvedic therapeutics. It emphasizes that medicine taken at the right time acts effectively, harmonizing with the body's internal rhythm and digestive state. Ancient seers like Charaka, Sushruta, and Vagbhata established detailed guidelines that modern science is only beginning to rediscover through chronotherapy and circadian pharmacology.

Integrating Aushadha Kala into clinical and pharmaceutical research could open new frontiers in personalized healthcare. As modern lifestyles disturb natural biological timing, reviving this concept offers a profound solution for restoring harmony between medicine, body, and nature.

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