

Review Article

Volume 14 Issue 06

June 2025

A COMPREHENSIVE REVIEW OF *ASTHI KSHAYA* IN RELATION TO *VATA VRIDDHI*: CLINICAL INSIGHTS AND DIAGNOSTIC RELEVANCE

*Dr. Shaista Malik¹, Dr. Nisha Mor², Dr. Balkrishan Panwar³

¹Assistant Professor, Swati Hospital and Ayurvedic Medical College, Tawli,
Uttar Pradesh 251318

²Assistant Professor, National College of Ayurveda And Hospital, Barwala, Hisar, Haryana

Email- nishamor27@gmail.com

³Professor, Department of Kriya Sharir, Uttarakhand Ayurveda University, Dehradun

*Corresponding Author's Email- Abeernaina23@gmail.com Mob.no - 7456807021

ABSTRACT

Background: In *Ayurvedic* physiology, *Asthi Dhatu* (bony tissue) and *Vata Dosha* share a unique and interdependent relationship. The classical texts highlight that *Asthi Kshaya* (depletion of bony tissue) leads to *Vata Vriddhi* (aggravation of *Vata Dosha*), resulting in various clinical manifestations, particularly those resembling osteopenic and degenerative disorders in modern medicine. **Aim & Objectives** **Aim** -To critically evaluate the clinical correlation between *Asthi Kshaya* and *Vata Vriddhi* based on classical *Ayurvedic* literature and modern clinical understanding. **Objectives**-To explore the classical *Ayurvedic* references on *Asthi Dhatu* and *Vata Dosha*. To analyze the cause-effect relationship between *Asthi Kshaya* and *Vata Vriddhi*. To correlate the symptoms of *Asthi Kshaya* with modern degenerative disorders. To highlight diagnostic and prognostic significance of this relationship in clinical practice. **Materials and Methods:** This review is based on a comprehensive analysis of classical *Ayurvedic* texts including *Charaka Samhitā*, *Suśruta Samhita*, and *Astanga Hridaya*, along with recent scholarly commentaries and peer-reviewed journals in modern medicine. Cross-referencing with pathophysiological correlations like osteoporosis, degenerative joint

diseases, and neurological dysfunctions has been applied. **Results:** The review reveals that *Asthi Kshaya* manifests through signs such as dental fragility, hair fall, nail brittleness, and skeletal weakness, which clinically correlate with conditions like osteoporosis, osteoarthritis, and spinal degeneration. These conditions often coincide with *Vata* dominance symptoms like pain, stiffness, crepitus, and dryness. The classical *Ayurvedic* understanding offers a predictive model for early diagnosis and holistic management. **Conclusion:** The dynamic relationship between *Asthi Dhātu* and *Vata Dosha* serves as a diagnostic and therapeutic cornerstone in *Ayurveda*. Recognition of *Asthi Kshaya* as a trigger for *Vata Vriddhi* can improve early diagnosis, enable preventive care, and guide treatment protocols for degenerative disorders in integrative medicine.

KEYWORDS: *Asthi Dhātu, Vata Dosha, Asthi Kshaya, Vata Vriddhi, Osteoporosis, Degenerative Disorders*

INTRODUCTION

The science of *Ayurveda* is founded on the balance of *Tridosha* and *Saptadhatu* for the maintenance of health. Among these, *Asthi Dhātu* holds structural and functional importance in supporting the body framework, mobility, and strength.¹ Classical *Ayurvedic* literature describes that each *Dhātu* nourishes the next, and depletion in one leads to pathology in the subsequent *Dhātu*. In the case of *Asthi Kshaya*, the most prominent response is the aggravation of *Vata Dosha*, establishing a clear *Karya Karana* (cause-effect) relationship.²

According to *Charaka Samhita*, *Asthi Dhātu* is predominantly composed of *Prithvi* and *Vayu Mahabhuta*, and it is stated that "*Asthi Kshaye Vata Vriddhi*".³ This indicates that when the quality or quantity of *Asthi Dhātu* diminishes, it creates a vacuum or space that becomes a conducive site for *Vata* to aggravate. *Vata*, being *Ruksha, Laghu, Chala, and Khara*, further accelerates the degenerative process, causing a vicious cycle of deterioration.⁴

Suśruta Samhita and *Astanga Hridaya* provide elaborate insights into the clinical features of *Asthi Kshaya*, including *Dantabheda* (loosening of teeth), *Kesha Patana* (hair fall), *Nakha Nasha* (brittle nails), and *Sandhi Shula* (joint pain).⁵ These symptoms align with modern-day conditions such as osteoporosis, arthritis, and various degenerative spinal disorders. The textual descriptions offer not only early signs but also guidance for *Chikitsa Siddhanta*.⁶

Modern medicine identifies similar pathologies under the umbrella of osteopenia, osteoporosis, and degenerative joint disease. However, it often lacks an integrative causality model like the *Ayurvedic* doctrine of *Asthi Kshaya* leading to *Vata Vriddhi*.⁷ Thus, *Ayurveda* provides an advantage in both preventive and promotive health strategies by identifying subtle imbalances before gross pathological changes manifest.⁸

The *Dhatu Poshana Nyaya*, including *Ksheera Dadhi Nyaya* and *Kedari Kulya Nyaya*, emphasizes that improper metabolism or disturbance in *Agni*, particularly *Dhatvagni*, may hinder the nourishment of *Asthi Dhatu*.⁹ This metabolic disturbance is another causative factor of *Asthi Kshaya*, which indirectly contributes to *Vata Vriddhi* due to lack of unctuousness and structural integrity in the tissues.¹⁰

Therefore, the interrelationship between *Asthi Dhatu* and *Vata Dosha* is not only foundational to understanding degenerative diseases in *Ayurveda*, but it also opens the possibility of correlating these ancient insights with modern diagnostic and therapeutic principles. A deeper exploration of this link provides a holistic model for diagnosis, prevention, and treatment that is both time-tested and integrative.¹¹

AIM & OBJECTIVES

Aim

To critically evaluate the clinical correlation between *Asthi Kshaya* and *Vata Vriddhi* based on classical *Ayurvedic* literature and modern clinical understanding.

Objectives

1. To explore the classical *Ayurvedic* references on *Asthi Dhatu* and *Vata Dosha*.
2. To analyze the cause-effect relationship between *Asthi Kshaya* and *Vata Vriddhi*.
3. To correlate the symptoms of *Asthi Kshaya* with modern degenerative disorders.
4. To highlight diagnostic and prognostic significance of this relationship in clinical practice.

MATERIALS AND METHODS

This review is conducted through an in depth literary analysis of classical *Ayurvedic* texts such as *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, and *Bhavaprakasha*, along with their respective commentaries including *Ayurveda Deepika*, *Nibandha Sangraha*, and

Sarvanga Sundara. Relevant *shlokas* explaining the concepts of *Asthi Dhatu*, *Asthi Kshaya*, and *Vata Vriddhi* were identified and examined contextually. Contemporary clinical literature, standard modern medical textbooks, and peer reviewed journals were also reviewed to establish a correlation between *Ayurvedic* principles and modern clinical conditions such as osteoporosis, osteoarthritis, and degenerative bone diseases. The collected information was synthesized to provide an integrative understanding of the pathological interlink between *Asthi Kshaya* and *Vata Vriddhi*, emphasizing their diagnostic and therapeutic implications.

CONCEPTUAL STUDY

The term *Vata* is derived from the root "*Va gati gandhanayoh*" meaning movement and sensation. According to *Ayurvedic* literature, *Vata Dosha* is responsible for all movements in the body, both voluntary and involuntary. It governs the nervous system, circulation, respiration, and all micro and macro activities at the physical and mental level.¹²

PANCHABHAUTIKA COMPOSITION

Vata Dosha is predominantly composed of *Vayu Mahabhuta* and *Akasha Mahabhuta*. This composition explains its subtle, mobile, and expansive nature, which allows it to pervade every cell and system of the body.¹³

GENERAL CHARACTERISTICS (GUNA) OF VATA¹⁴

As per *Charaka Samhita*, *Vata* possesses the following *Guna* (qualities):

Guna	Description
<i>Ruksha</i>	Dryness
<i>Laghu</i>	Lightness
<i>Sheeta</i>	Coldness
<i>Sukshma</i>	Subtlety
<i>Chala</i>	Mobility
<i>Vishada</i>	Clarity
<i>Khara</i>	Roughness

LOCATION (STHANA) OF VATA¹⁵

As described in *Ayurvedic* texts, the major *Sthana* (sites) of *Vata Dosha* are:

- *Pakvashaya* (large intestine)
- *Kati* (pelvic region)
- *Shroni* (hip region)
- *Asthi* (bones)
- *Udara* (abdomen)
- *Basti* (urinary bladder)

FIVE SUBTYPES (*PANCHA VATA*)¹⁶

Name	Location	Function
<i>Prana Vata</i>	Head, chest	Respiration, swallowing, cognition
<i>Udana Vata</i>	Chest, throat	Speech, enthusiasm, memory, upward movement
<i>Samana Vata</i>	GI tract	Digestion, separation of nutrients
<i>Vyana Vata</i>	Entire body	Circulation, locomotion
<i>Apana Vata</i>	Pelvic region	Defecation, urination, menstruation, childbirth

FUNCTIONS (*KARMA*) OF *VATA DOSHA*¹⁷

- Controls all sensory and motor functions
- Maintains circulation and respiration
- Governs speech, locomotion, excretion, and nerve impulses
- Facilitates psychological processes like enthusiasm, fear, and creativity
- Aids in separation and assimilation of nutrients

ROLE IN PATHOGENESIS

When *Vata* becomes vitiated (*Vata Prakopa*), it leads to conditions characterized by pain, dryness, tremors, constipation, anxiety, insomnia, and neurological or degenerative diseases. *Vata* is the first *Dosha* to get vitiated and the last to be pacified, making its management critical in chronic illnesses.¹⁸

ASTHI DHATU- The word *Asthi* is derived from the root "*Asi sthau*" meaning that which provides stability or support. *Asthi Dhatu* is the fifth of the *Saptadhatu*, and it represents the structural component of the body that maintains posture, provides support, and protects internal organs. It is primarily responsible for the formation of bones, teeth, nails, and hair.¹⁹

PANCHABHAUTIKA COMPOSITION

According to *Ayurvedic* philosophy, *Asthi Dhatu* is predominantly made up of *Prithvi Mahabhuta* (earth element) and *Vayu Mahabhuta* (air element). *Prithvi* provides hardness and strength, while *Vayu* is responsible for its hollow spaces, flexibility, and porosity.²⁰

FORMATION AND METABOLISM (*DHATU POSHANA KRAMA*)

Asthi Dhatu is formed as a result of the transformation of *Meda Dhatu* (fat tissue) through the action of *Asthivaha Dhatvagni*. The metabolic process follows the *Ksheera Dadhi Nyaya* and *Kedari Kulya Nyaya*, illustrating the sequential nourishment of one *Dhatu* from the previous. Any disturbance in this transformation can lead to *Asthi Kshaya* or pathological bone conditions.²¹

FUNCTIONS OF *ASTHI DHATU* (*ASTHI KARMA*)

- *Sharira Dharana* – Provides structural support and maintains posture
- *Majja Nirmana* – Acts as the source for *Majja Dhatu* (marrow)
- *Chalana Karma* – Enables movement by serving as points of attachment for *Snayu* and *Peshi*
- *Sharira Avayava Rachana* – Formation of hard organs like bones, teeth, nails, and hair²²

SEAT (*STHANA*) OF *ASTHI DHATU*

The main *Sthana* of *Asthi Dhatu* is the entire skeletal framework. According to *Ayurveda*, structures such as *Danta* (teeth), *Nakha* (nails), *Kesha* (hair), and *Asthi* (bones) are direct derivatives or indicators of *Asthi Dhatu* health.²³

SIGNS AND SYMPTOMS OF *ASTHI KSHAYA*

- *Dantabheda* – Loosening or falling of teeth
- *Kesha Patana* – Hair fall
- *Nakha Nasha* – Brittle or broken nails
- *Sandhi Shula* – Pain in joints
- *Asthi Shaithilya* – Weakness or softening of bones
- *Stambha* and *Toda* in the limbs – Stiffness and pricking sensation

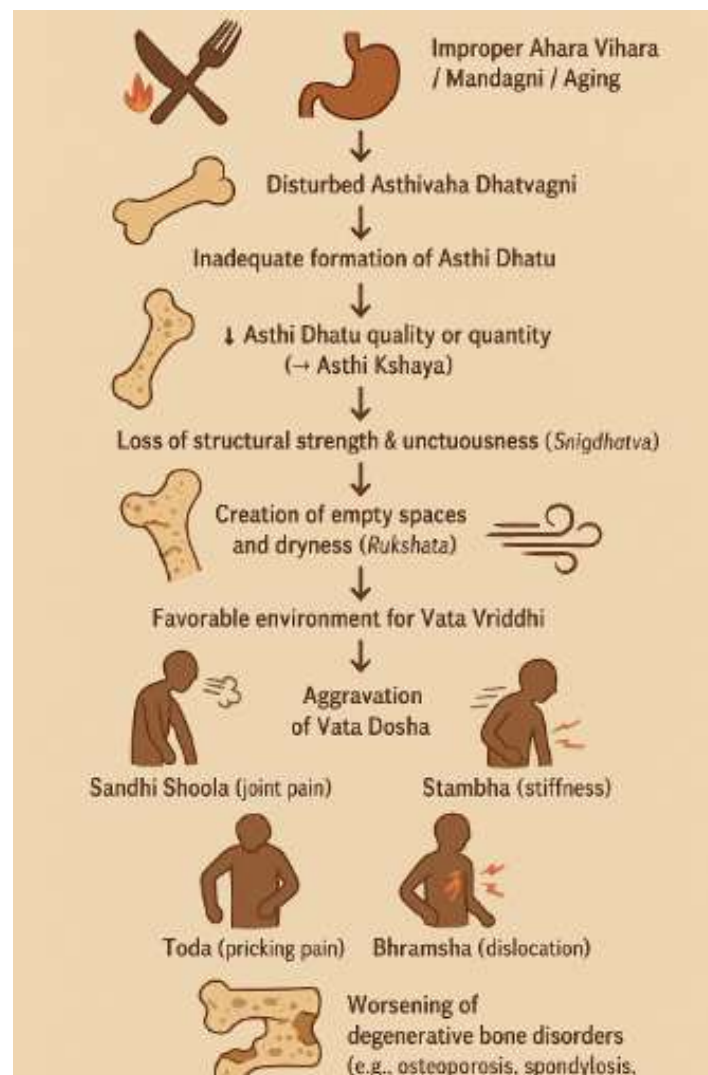
These symptoms correlate with modern conditions like osteoporosis, osteomalacia, and degenerative bone diseases.²⁴

RELATION WITH VATA DOSHA

Classical texts emphasize that *Asthi* and *Vata* have a reciprocal relationship. It is stated that "*Asthi Kshaye Vata Vriddhi*". This means that depletion of *Asthi Dhātu* leads to the aggravation of *Vata Dosha*, which further intensifies degenerative changes, creating a vicious cycle.²⁴



CLINICAL CO-RELATION BETWEEN *ASTHI KSHAYA* AND *VATA VRIDDHI*



RESULTS AND FINDINGS

- *Asthi Kshaya* leads to *Vata Vriddhi* due to loss of *Snigdhatva* and structural integrity.²⁵
- Clinical features like *Dantabheda*, *Kesha Patana*, and *Sandhi Shula* align with modern degenerative disorders.²⁶
- *Vata Vriddhi* worsens *Asthi* degeneration, forming a progressive pathological cycle.²⁷
- Early detection of *Asthi Kshaya* is crucial for preventing chronic *Vataja* disorders.²⁸

DISCUSSION

The human body is sustained through the balanced functioning of *Tridosha* and *Saptadhatu*. Among them, *Asthi Dhatu* provides the primary structural framework, enabling support and movement. According to *Ayurveda*, *Asthi Dhatu* is formed from *Meda Dhatu* through the action of *Asthivaha Dhatvagni*.²⁹ When this *Dhatvagni* is weak or impaired, the quantity and quality of *Asthi* becomes deficient, resulting in *Asthi Kshaya*. This depletion of *Asthi Dhatu* affects the integrity of bones, teeth, nails, and hair, which are considered the by-products or *Upadhatu* of *Asthi*.³⁰

Physiologically, *Asthi Dhatu* not only supports the musculoskeletal structure but also serves as a container for *Majja Dhatu*, which is crucial for neurological and marrow functions.³¹ When *Asthi* is compromised, there is an intrinsic alteration in bone porosity and density. *Ayurveda* explains that the deficiency of *Asthi* creates *Khara* (roughness), *Ruksha* (dryness), and *Shunyata* (hollow spaces), which are ideal for *Vata Dosha* to occupy and aggravate. This establishes a foundational physiological connection: *Asthi Kshaya* directly results in *Vata Vriddhi*.³²

Vata Dosha, being the principle of movement and neurological regulation, is subtle, dry, and mobile in nature. When *Asthi Dhatu* is healthy, it restricts and stabilizes the functions of *Vata*.³³ However, with *Asthi Kshaya*, the loss of containment allows *Vata* to move erratically, manifesting symptoms like joint pain, tremors, and neuromuscular dysfunctions. This reflects a classical *Ayurvedic* principle: when structure is compromised, function is disturbed, especially those governed by *Vata*.³⁴

Moreover, physiological aging is a *Vata* dominant phase (*Vata Avastha*), during which natural degeneration of *Asthi Dhatu* occurs.³⁵ This explains why elderly individuals are more prone to *Vataja Vikara* such as osteoarthritis, cervical spondylosis, and spinal disc disorders. Thus,

the physiological interplay between *Asthi* and *Vata* is bidirectional — *Asthi Kshaya* promotes *Vata Vriddhi*, and *Vata Vriddhi* accelerates *Asthi Kshaya* — making it essential for preventive and promotive approaches in *Ayurveda* to preserve *Asthi Dhatu* health.³⁶

CLINICAL INSIGHTS

The clinical understanding of *Asthi Kshaya* reveals a spectrum of degenerative presentations, including *Dantabheda* (loose teeth), *Kesha Patana* (hair fall), *Nakha Nasha* (brittle nails), *Sandhi Shula* (joint pain), and generalized skeletal fragility. These symptoms correspond closely with clinical entities such as osteoporosis, osteoarthritis, and spondylosis in modern medicine. The *Ayurvedic* explanation that *Asthi Dhatu* depletion leads to *Vata Vriddhi* gives insight into the underlying pathophysiology where loss of structural integrity promotes dryness (*Rukshata*), instability (*Chalatva*), and neurological disturbances. This bidirectional pathology explains why chronic *Vataja* disorders often worsen with progressing *Asthi Kshaya*, especially in elderly individuals or those with poor metabolic function (*Dhatvagni Mandya*). Clinical insights also emphasize the importance of preserving *Asthi Dhatu* through early intervention with *Brimhana*, *Snehana*, and *Basti* therapies.

DIAGNOSTIC RELEVANCE

From a diagnostic perspective, recognizing the early features of *Asthi Kshaya* is vital for preventing long-term disability. The association with *Vata Vriddhi* serves as a clinical marker for evaluating both structural and functional deterioration. Assessment of *Rukshata*, *Stambha*, *Toda*, and *Sandhi Shula* in conjunction with signs of *Asthi* depletion enables a comprehensive *Ayurvedic* diagnosis that can be corroborated with modern tools such as bone mineral density (BMD) testing, radiography, and neuro-musculoskeletal assessments. Moreover, *Asthi Kshaya* can serve as a prognostic indicator in elderly patients or those at risk of *Vataja* disorders. Diagnostic relevance also lies in identifying *Agni Dushti* and faulty *Ahara Vihara* patterns that initiate the cascade of *Dhatu Kshaya* leading to *Vata Prakopa*. Hence, the classical principle “*Asthi Kshaye Vata Vriddhi*” is not just philosophical but highly applicable in clinical diagnostics and integrated practice.

CONCLUSION

The physiological relationship between *Asthi Dhatu* and *Vata Dosha* is intricately interdependent. *Asthi Dhatu* provides the structural stability required to regulate and contain the mobile nature of *Vata*. When *Asthi Kshaya* occurs due to impaired *Dhatvagni* or other

causative factors, it leads to the creation of *Ruksha* and *Khara* spaces, promoting *Vata Vriddhi*. This vitiated *Vata* further disrupts the nourishment and integrity of *Asthi Dhātu*, forming a vicious physiological cycle. Thus, maintaining the equilibrium of *Asthi* is essential to preserve the functional harmony of *Vata* in the body.

CONFLICT OF INTEREST –NIL

SOURCE OF SUPPROT –NONE

REFERENCES

1. Agnivesha. *Charaka Samhita* with *Ayurveda Deepika* commentary by Chakrapanidatta. Ed. by Yadavji Trikamji Acharya. Reprint ed. Varanasi: Chaukhambha Orientalia; 2017. p. 1–738.
2. Sushruta. *Sushruta Samhita* with *Nibandha Sangraha* commentary by Dalhanacharya. Ed. by Kaviraj Ambikadatta Shastri. Reprint ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2016. p. 1–824.
3. Vagbhata. *Ashtanga Hridaya* with *Sarvanga Sundara* commentary by Arunadatta and *Ayurveda Rasayana* by Hemadri. Ed. by Pandit Harishastri Paradkar. Varanasi: Chaukhambha Surbharati Prakashan; 2015. p. 1–956.
4. Sharma PV. *Dravyaguna Vijnana* (Vol. I). Reprint ed. Varanasi: Chaukhambha Bharati Academy; 2010. p. 1–544.
5. Sharma PV. *Charaka Samhita: Text with English translation*. Vol. I. Varanasi: Chaukhambha Orientalia; 2014. p. 1–556.
6. Sharma PV. *Sushruta Samhita: Text with English translation*. Vol. I. Varanasi: Chaukhambha Visvabharati; 2015. p. 1–652.
7. Sharma PV. *Ashtanga Hridaya: Text with English translation*. Vol. I. Varanasi: Chaukhambha Orientalia; 2012. p. 1–694.
8. Tripathi B. *Charaka Samhita* with *Charaka Chandrika* Hindi commentary. Vol. I. Varanasi: Chaukhambha Surbharati Prakashan; 2013. p. 1–880.
9. Tripathi B. *Sushruta Samhita* with *Nirmala Hindi Vyakhya*. Vol. I. Varanasi: Chaukhambha Surbharati Prakashan; 2011. p. 1–950.
10. Tripathi B. *Ashtanga Hridaya* with *Vidyotini Hindi Commentary*. Vol. I. Varanasi: Chaukhambha Surbharati Prakashan; 2014. p. 1–780.

11. Bhishagratna KK. *Sushruta Samhita* (English translation). Vol. I. Varanasi: Chaukhambha Sanskrit Series Office; 2010. p. 1–950.
12. Bhishagratna KK. *Ashtanga Hridaya* (English translation). Vol. I. Varanasi: Chaukhambha Sanskrit Series Office; 2011. p. 1–640.
13. Bhishagratna KK. *Charaka Samhita* (English translation). Vol. I. Varanasi: Chaukhambha Sanskrit Series Office; 2012. p. 1–820.
14. Sharma RK, Dash B. *Charaka Samhita* (Text with English translation). Vol. I. Varanasi: Chowkhamba Sanskrit Series Office; 2014. p. 1–746.
15. Sharma RK, Dash B. *Sushruta Samhita* (Text with English translation). Vol. I. Varanasi: Chowkhamba Sanskrit Series Office; 2015. p. 1–880.
16. Sharma RK, Dash B. *Ashtanga Hridaya* (Text with English translation). Vol. I. Varanasi: Chowkhamba Sanskrit Series Office; 2013. p. 1–920.
17. Sharma RK. *Dravyaguna Vijnana* (Vol. II). Varanasi: Chaukhambha Bharati Academy; 2010. p. 1–630.
18. Sharma RK. *Charaka Samhita*. Vol. II. Varanasi: Chaukhambha Orientalia; 2014. p. 1–598.
19. Sharma RK. *Sushruta Samhita*. Vol. II. Varanasi: Chaukhambha Visvabharati; 2015. p. 1–612.
20. Sharma RK. *Ashtanga Hridaya*. Vol. II. Varanasi: Chaukhambha Orientalia; 2012. p. 1–672.
21. Tripathi B. *Dravyaguna Vijnana*. Vol. II. Varanasi: Chaukhambha Surbharati Prakashan; 2010. p. 1–702.
22. Tripathi B. *Charaka Samhita*. Vol. II. Varanasi: Chaukhambha Surbharati Prakashan; 2013. p. 1–770.
23. Tripathi B. *Sushruta Samhita*. Vol. II. Varanasi: Chaukhambha Surbharati Prakashan; 2011. p. 1–810.
24. Tripathi B. *Ashtanga Hridaya*. Vol. II. Varanasi: Chaukhambha Surbharati Prakashan; 2014. p. 1–690.
25. Bhishagratna KK. *Dravyaguna Vijnana*. Vol. I. Varanasi: Chaukhambha Sanskrit Series Office; 2010. p. 1–670.
26. Bhishagratna KK. *Charaka Samhita*. Vol. II. Varanasi: Chaukhambha Sanskrit Series Office; 2012. p. 1–820.
27. Bhishagratna KK. *Sushruta Samhita*. Vol. II. Varanasi: Chaukhambha Sanskrit Series Office; 2010. p. 1–880.

28. Bhishagratna KK. *Ashtanga Hridaya*. Vol. II. Varanasi: Chaukhambha Sanskrit Series Office; 2011. p. 1–610.
29. Sharma PV. *Dravyaguna Vijnana*. Vol. III. Varanasi: Chaukhambha Bharati Academy; 2010. p. 1–510.
30. Sharma PV. *Charaka Samhita*. Vol. III. Varanasi: Chaukhambha Orientalia; 2014. p. 1–542.
31. Sharma PV. *Sushruta Samhita*. Vol. III. Varanasi: Chaukhambha Visvabharati; 2015. p. 1–576.
32. Sharma PV. *Ashtanga Hridaya*. Vol. III. Varanasi: Chaukhambha Orientalia; 2012. p. 1–624.
33. Tripathi B. *Dravyaguna Vijnana*. Vol. III. Varanasi: Chaukhambha Surbharati Prakashan; 2010. p. 1–650.
34. Tripathi B. *Charaka Samhita*. Vol. III. Varanasi: Chaukhambha Surbharati Prakashan; 2013. p. 1–782.
35. Tripathi B. *Sushruta Samhita*. Vol. III. Varanasi: Chaukhambha Surbharati Prakashan; 2011. p. 1–800.
36. Tripathi B. *Ashtanga Hridaya*. Vol. III. Varanasi: Chaukhambha Surbharati Prakashan; 2014. p. 1–710.