E-ISSN:2456-3110

Research Article

Chronic Kidney Disease

Check for updates

Journal of Ayurveda and Integrated Medical Sciences

2025 Volume 10 Number 4 APRIL

Publisher

Maharshi Charaka Ayurveda

www.maharshicharaka.in

# Cross Sectional Observational Study of Rasa Dhatu Dushti in Known Diabetic Patients of Chronic Kidney Disease (C.K.D.)

Gulakari KS[1*], Patil R[2]

DOI:10.21760/jaims.10.4.5

[1*] Komal Sandesh Gulakari, PhD Scholar, Department of Roga Nidana, PDEA's College of Ayurveda and Research Centre, Akurdi, Pune, Maharashtra, India and Associate Professor, Roga Nidana Department, BR Harne Ayurvedic College, Karav-vangani, Thane, Maharashtra, India.

[2] Ragini Patil, Principal, Professor and HOD, Department of Roga Nidana, PDEA's College of Ayurveda and Research Centre, Akurdi, Pune, Maharashtra, India.

The rising incidence of CKD in Indian population is likely to pose major problems for healthcare and the economy in future years. In known diabetic patients of CKD, study of Rasa Dhatu Dushti is important for understanding the role of Rasa Dhatu in Samprapti of CKD. Aim is to assess Rasa Dhatu Dushti in known diabetic patients of chronic kidney disease on dialysis. Objectives are to assess Rasa Dhatu Kshaya, Vruddhi Lakshanas as per Vagbhata and Rasa Dhatu Dushti Lakshanas as per Charaka Samhita and analyse their severity as per the stages in known Diabetic patients of CKD on dialysis. Known diabetic patients of CKD on dialysis of age group 30-70 year and both genders were selected from dialysis centre. A Case Record Form was design for incorporating Lakshanas of different types of Rasa Dhatu Dushti. The stage of CKD is calculated on the basis of Sr. creatinine and Blood Urea reports collected from the patients. On the basis of grading of Lakshanas, the subjects are divided into Mild, Moderate and Severe Rasa Dhatu Vruddhi, Kshaya and Dushti Lakshanas. It is observed that Rasa Dhatu Kshaya, Vruddhi and Dushti remain highly prevalent across all CKD stages. More than 50 % of Rasa Kshaya Lakshanas were observed in 71 patients, Rasa Vruddhi Lakshanas in 40 patients and Rasa Dushti lakshanas in 7 patients. On the basis of outcome of observation and discussion, it is concluded that all types of Rasa Dhatu Dushti (predominantly Rasa Kshayatmaka Dushti) in all stages is present in known diabetic patients CKD on dialysis. Treatment of Rasa Dhatu is important to retard the disease progression.

**Keywords:** Dhatu Dushti, Rasa Dhatu Kshaya, Rasa Dhatu Vruddhi, Rasa Dhatu Dushti, Stages of CKD

**Corresponding Author**

Komal Sandesh Gulakari, PhD Scholar, Department of Roga Nidana, PDEA's College of Ayurveda and Research Centre, Akurdi, Pune, Maharashtra, India and Associate Professor, Roga Nidana Department, BR Harne Ayurvedic College, Karav-vangani, Thane, Maharashtra, India.

Email: komalgulkari@gmail.com

**How to Cite this Article**

Gulakari KS, Patil R, Cross Sectional Observational Study of Rasa Dhatu Dushti in Known Diabetic Patients of Chronic Kidney Disease (C.K.D.). J Ayu Int Med Sci. 2025;10(4):22-27.

Available From

https://jaims.in/jaims/article/view/4507/

**To Browse**

| Manuscript Received | Review Round 1 | Review Round 2 | Review Round 3 | Accepted |
|---|---|---|---|---|
| 2025-03-11 | 2025-03-27 | 2025-04-07 | 2025-04-17 | 2025-04-27 |

| Conflict of Interest | Funding | Ethical Approval | Plagiarism X-checker | Note |
|---|---|---|---|---|
| None | Nil | Yes | 11.64 | |

## Introduction

CKD is major public health concern worldwide with regard to number of individuals affected and therapeutic costs involved. In India, given its population being more than 1 billion, the rising incidence of CKD is likely to pose major problems for healthcare and the economy in future years. The prevalence of CKD in SEEK-India cohort was found to be 17.2%.[1] Chronic Kidney Disease encompasses a spectrum of different pathophysiologic processes associated with abnormal kidney function and a progressive decline in glomerular filtration rate (GFR).[2] Initially it manifests only as a biochemical abnormality. Eventually, loss of the excretory, metabolic and endocrine function of the kidney leads to the development of the clinical symptoms and signs of renal failure which are referred to as uraemia. Diabetes mellitus is the most common cause of chronic kidney disease.

There is no direct link of chronic kidney disease to any of the *Vyadhi* explain in Ayurvedic text. The diseases can be studied as provoked *Dosha*, specific causes, and their sites.[3] Good knowledge of *Vikara Prakarti* (state of vitiated *Dosha*, *Dhatu*, and *Mala* which causing the disease), *Adhishthanantarani* (site of vitiated *Dosha*) and *Samutthana Vishesha* (cause of vitiation of *Dosha*) is important for *Nidana* and *Chikitsa*.[4]

*Prameha* acts as a *Nidanarthakar Roga* for CKD. The symptoms and signs of chronic kidney disease (CKD) mainly reflect an imbalance in the *Vata* and *Kapha Doshas*, along with disturbances across multiple Doshas.[5] Initially, there is a disruption in *Rasa*, *Rakta*, *Mutra*, and *Udaka* followed by involvement of all *Dhatus* and *Upadhatus*. Here the derangement in the *Dosha* is exhibited in the form of an abnormality in the definite *Dhatu* pattern.[6] Each *Dhatu* has its typical embedded structural and functional qualities. Transformation during pathogenesis brings some structural and functional disturbances in a normal constitution of a *Dhatu* and reflects specific characters.[7] This typical abnormal condition of a *Dhatu* is referred as *Dhatu Dushti*.[8] Ayurveda considers *Dhatu Dushti* as a critical aspect which is estimated to be leading the disease pathogenesis as well as prognosis. While explaining *Dosha Dushti*, *Hemadri* in *Ayurveda Rasayana Tika* on *Ashtang Hrudaya* explain Types of *Dushti*.

These are *Rupahani*, *RupaVruddhi*, *Rupantaram*.[9] So type of *Dhatu Dushti* can be *Dhatu Kshayatmaka*, *Vruddhyatmaka* and *Dushyatmaka*. With the help of *Rasa Dhatu Kshaya, Vruddhi Lakshanas* as per *Vagbhata Samhita* and *Rasa Dhatu Dushti Lakshanas* as per *Charaka Samhita, Rasa Dhatu Dushti* can be assessed in diabetic patients of chronic kidney disease and its stages.

To achieve our aim that is *Rasa Dhatu Samyakriya* in diabetic patients of chronic kidney disease, knowledge of *Rasa Dhatu Dushti* is essential. This were definitely help for deciding proper line of treatment according to different stages of CKD and also helpful to retard the progress of chronic kidney disease.

## Aims and Objectives

**Aims:** To assess *Rasa Dhatu Dushti* in known diabetic patients of chronic kidney disease.

**Objectives:**

1. To assess *Rasa Dhatu Kshaya, Vruddhi Lakshanas* as per *Vagbhata Samhita* and *Rasa Dhatu Dushti Lakshanas* as per *Charaka Samhita* in known diabetic patients of chronic kidney disease on dialysis.
2. To analyse data of signs and symptoms of chronic kidney disease patients with its stages and compare those with the *Rasa Dhatu Kshaya, Vruddhi* and *Rasa Dushti Lakshanas*.

## Materials and Methods

**Methodology**

**Study Design -** Cross sectional observational study

**Study Population -** Known diabetic patients of chronic kidney disease.

**Study Location -** Dialysis Centres

**Sample Size -** According to Prevalence, minimum sample size at 5% precision should be 220.

**Sampling Technique -** Simple Random Sampling.

A Case Record Form was designed for incorporating signs and symptoms of different types of *Rasa Dhatu Dushti* that is *Rasa Dhatu Kshaya, Rasa Vruddhi Lakshanas* as per *Vagbhata Samhita* and *Rasa Dhatu Dushti Lakshanas* as per *Charaka Samhita*.

For each sign or symptom, grading was done and scores allotted.**[10]** On the basis of total score obtained, the subjects were divided into Mild, Moderate and severe *Rasa Dhatu Vruddhi, Kshaya* and *Dushti Lakshanas*.

**Methods of selection of study subjects**

Diabetic patients of chronic kidney disease on dialysis irrespective of religion from study centre are selected on the basis of patients' blood report. Sr Creatinine, Blood Urea, eGFR, Stage of CKD.

**Inclusion Criteria**

1. Patients of Age group 30-70 year
2. Both Gender
3. Diabetic patients of chronic kidney disease on dialysis.

**Exclusion Criteria**

1. Patients not on Dialysis.
2. Patients of Chronic Kidney Disease suffering from any cause other than Diabetes.

**Observation Parameters**

**1. Subjective Parameters:**

It includes Assessment of *Rasa Dhatu Kshaya*, *Dhatu Vruddhi* and *Dhatu Dushti* by Number of *Lakshanas*.

**2. Objective Parameters:**

It includes Blood investigations. Objective parameters, Serum Creatinine and Blood Urea were collected from patients' blood report and eGFR were calculated from age and Serum Creatinine and gender. From the eGFR, Stage of CKD were calculated.

## Observations and Results

**Table 1: Observation Gradation**

| Dhatu | Total no. of Lakshanas | Gradation of Dhatu | | |
|---|---|---|---|---|
| | | Mild | Moderate | Sever |
| Rasa Kshaya Lakshanas | 5 | 1-2 | 3-4 | 5 |
| Rasa Vruddhi Lakshanas | 10 | 1-3 | 4-7 | 8-10 |
| Rasa Dushti Lakshanas | 18 | 1-6 | 7-13 | 14-18 |

**Distribution of Patients as per Gender**

Out of 220 patients enrolled in study, there were 145 males & 75 females. 94% of both females & males have *Rasa Dhatu Dushti* as per prevalence.

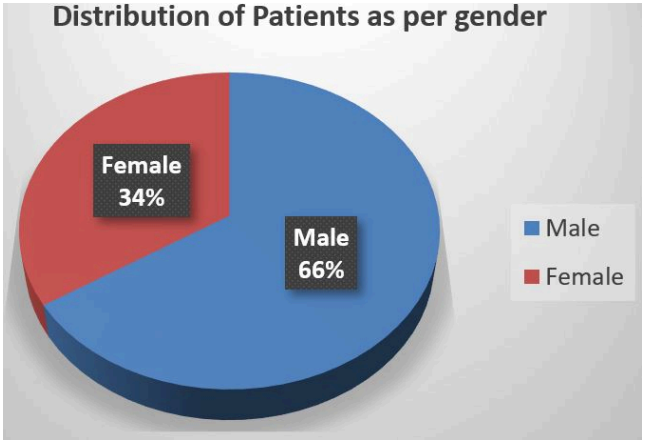


**Figure 1: Distribution of Patients as per Gender**

**Distribution of patients as per Age**

A total of 123 patients belonged to the age group of 61 to 70 yrs.

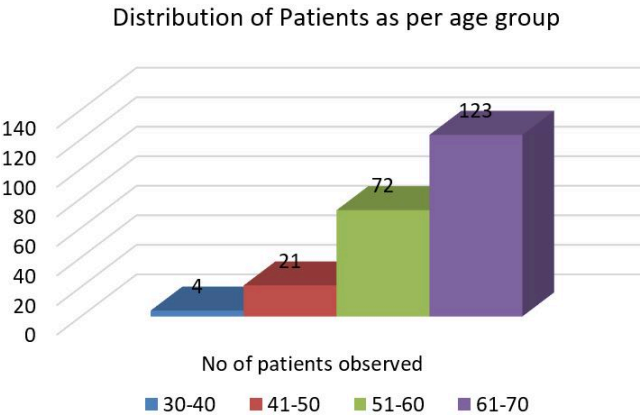


**Figure 2: Distribution of Patients as per age**

**CKD Stages Wise Distribution of Patients**

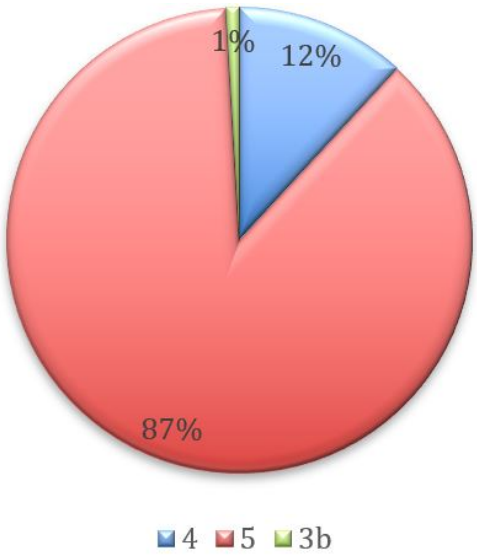


**Figure 3: CKD Stages Wise Distribution of Patients**

There are 26 (12%) patients in Stage 4, 192 (87%) patients in Stage 5, and 2 (1%) patients in Stage 3b. In total, there are 220 patients. This means most patients are in Stage 5, a few are in Stage 4, and very few are in Stage 3b.

### Prevalence across *Rasa Dhatu*

**Table 2: Prevalence across *Rasa Dhatu***

| Dhatu | Kshaya (% > 0) | Vruddhi (% > 0) | Dushti (% > 0) |
|---|---|---|---|
| Rasa | 96% (211/220) | 96% (211/220) | 94% (206/220) |

*Rasa Dhatu* show the highest prevalence of abnormalities in all metrics (*Rasa Kshaya, Vruddhi* and *Dushti* > 90%) in diabetic patients of CKD on dialysis.

### Distribution of Patients having more than 50% *Lakshanas* across the Stages:

**Table 3: Distribution of Patients having more than 50% *Lakshanas* across the Stages**

| More than 50% Lakshanas | Rasa Kshaya | Rasa Vruddhi | Rasa Dushti |
|---|---|---|---|
| 3b Stage | 1 | 0 | 0 |
| 4 Stage | 11 | 8 | 4 |
| 5 Stage | 59 | 32 | 3 |
| Total | 71 | 40 | 7 |

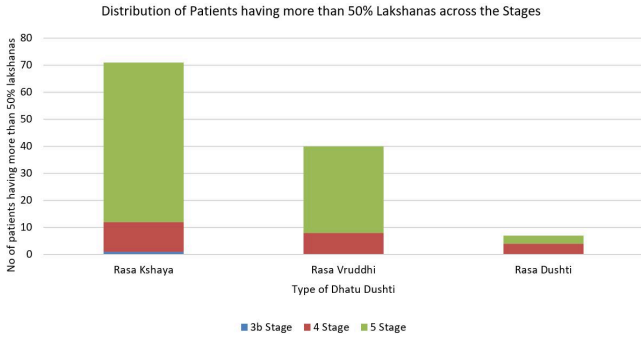


**Figure 4: Distribution of Patients having more than 50% *Lakshanas* across the Stages**

More than 50 % of *Rasa Kshaya Lakshanas* were observed in 71 patients out of 220, *Rasa Vruddhi Lakshanas* were observed in 40 patients out of 220 and *Rasa Dushti Lakshanas* were observed in 7 patients out of 220. *Rasa Kshayatmaka Dushti* predominantly present in diabetic CKD patients on dialysis.

More than 50 % of *Rasa Kshaya Lakshanas* were observed in 59 patients out of 71 in Stage 5, 11 in Stage 4 and 1 in stage 3b. Stage wise also, *Rasa Kshayatmaka Dushti* is predominantly present in diabetic CKD patients on dialysis.

### Descriptive Statistics of *Rasa Dhatu*

**Table 4: Descriptive Statistics of *Rasa Dhatu***

| Dhatu Lakshana | Min | 1st Qu. | Median | Mean | 3rd Qu. | Max |
|---|---|---|---|---|---|---|
| Rasa Kshaya | 0 | 2 | 3 | 2.8 | 4 | 5 |
| Rasa Vruddhi | 0 | 2 | 4 | 3.7 | 5 | 8 |
| Rasa Dushti | 0 | 2 | 3 | 4.0 | 6 | 12 |

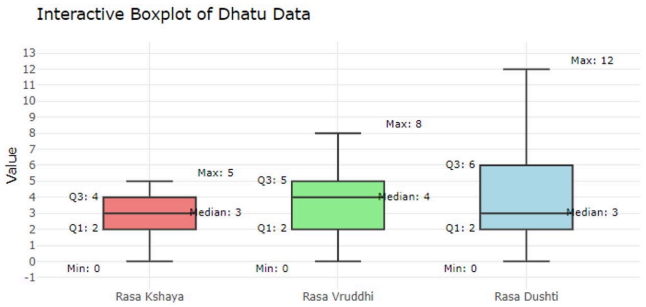


**Figure 5: Descriptive Statistics of *Rasa Dhatu***

The analysis of *Dhatu Lakshanas* across the study population provides valuable insight into the distribution and severity of pathological changes associated with *Rasa Dhatu*. The severity of each *Lakshana* was measured on a numerical scale and summarized using standard descriptive statistics including minimum, first quartile, median, mean, third quartile, and maximum values.

*Rasa Kshaya* (depletion) had a median score of 3, indicating mild to moderate depletion in a majority of participants. *Rasa Vruddhi* (excess) had a higher mean score (3.7) and a maximum value of 8, suggesting that excessive accumulation of *Rasa* was not uncommon and could be severe in some cases. Similarly, *Rasa Dushti* (impurity or dysfunction) showed a mean score of 4.0 and a maximum of 12, reflecting both its frequent occurrence and potential severity.

### Prevalence of *Lakshanas* Across CKD Stages

**Table 5: Prevalence of *Lakshanas* Across CKD Stages**

| Stages of CKD | Lakshana | Prevalence | Prevalence Percent |
|---|---|---|---|
| 3b | Rasa Kshaya | 1 | 100 |
| 3b | Rasa Vruddhi | 1 | 100 |
| 3b | Rasa Dushti | 1 | 100 |
| 4 | Rasa Kshaya | 0.962 | 96.2 |
| 4 | Rasa Vruddhi | 1 | 100 |
| 4 | Rasa Dushti | 1 | 100 |
| 5 | Rasa Kshaya | 0.958 | 95.8 |
| 5 | Rasa Vruddhi | 0.953 | 95.3 |
| 5 | Rasa Dushti | 0.927 | 92.7 |

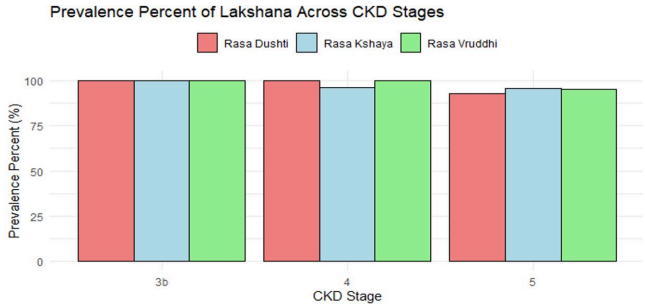


**Figure 6: Prevalence of *Lakshanas* Across CKD Stages**

In stage 3b, the earliest stage assessed in this study, *Rasa Dhatu* showed 100% prevalence for all three types of imbalances, *Kshaya*, *Vruddhi* and *Dushti* indicating that disturbances in *Rasa Dhatu* are among the earliest and most consistent features in CKD progression. In stage 4 CKD, the prevalence of imbalances intensified. *Rasa Dhatu* disturbances remained prominent, with *Vruddhi* and *Dushti* reaching 100% where as *Kshaya* affects 96.2% of the patients. At stage 5 CKD, the most advanced in the dataset, the pattern of widespread *Rasa Dhatu* imbalance continued. *Rasa Dushti* was present in 92.7% of patients, and *Rasa Kshaya* and *Vruddhi* both exceeded 95%, reinforcing the critical role of *Rasa Dhatu* pathology in advanced CKD. These findings indicate that *Rasa Dhatu Kshaya*, *Vruddhi* and *Dushti* remain highly prevalent across all CKD stages, with a slight decline in *Rasa Dushti* from Stage 4 to Stage 5.

## Discussion

From descriptive statistics of *Dhatu Lakshanas*, it is observed that *Rasa Kshaya* and *Rasa Vruddhi Lakshanas* are mild to moderately present while *Rasa Dushti Lakshanas* shows both severity and occurrence in diabetic CKD patients on dialysis.

*Lakshanas* of *Rasa Kshaya*, *Vruddhi* and *Dushti* are found in more or less proportion in a single patient of CKD. This is due to vitiation of *Dosha* as per *Hetu* and *Sthan*[11] which vitiate the *Rasa Dhatu*. For example, *Prakupit Vata* (by its *Ruksha Guna*) vitiate the *Rasa Dhatu* and causes *Raukshya Lakshan* which is a *Rasa Dhatu Kshaya Lakshana*. In the same patient *Vruddhi* of *(Kledak) Kapha* at *Amashaya* may cause *Agni Mandya* which is a sign of *Rasa Dhatu Vruddhi* similarly in same patient *Arasadyata*, sign of *Rasa* (*Dushyatmak*) *Dushti* is observed due to vitiation of (*Bodhak*) *Kapha* at *Jivha*.

From observation, it is cleared that *Rasa Dhatu Kshaya*, *Vruddhi* and *Dushti* remain highly prevalent across all CKD stages in diabetic patients on dialysis, with a slight decline in *Rasa Dushti* from Stage 4 to Stage 5. This may be the effect of dialysis. The high prevalence of *Rasa Dhatu* abnormalities (*Kshaya, Vruddhi, Dushti*) may reflect fluid imbalance, poor nutrient assimilation, and toxin accumulation, which are consistent with CKD and dialysis effects on metabolism. From the observations of distribution of the patients having more than 50% *Lakshanas,* it can be said that more patients having *Rasa Kahaya Lakshanas*. So, *Rasa Kshayatmaka Dushti* in all stages present predominantly in diabetic CKD patients on dialysis.

From this it can be say that *Rasa Kshaya*, *Vruddhi* and *Dushti* is taken in consideration while treating the diabetic patients of CKD on dialysis. Special attention should be given to the *Rasa Kshayatmaka Dushti.* Treatment of *Rasa Dhatu* can retard the disease progression.

## Conclusion

On the basis of outcome of observation and discussion, it is concluded that all types of *Rasa Dhatu Dushti* in all stages is present in known diabetic patients CKD on dialysis. *Rasa Kshayatmaka Dushti* is present predominantly in known diabetic patients CKD on dialysis. This can be helpful while treating diabetic patients CKD on dialysis to retard the disease progression.

## References

1. Singh AK, Farag YMK, et al. Epidemiology and risk factors of chronic kidney disease in India – Results from the SEEK (Screening and Early Evaluation of Kidney Disease) study. BMC Nephrology [Internet]. 2013;14:114. *Available from: [Article][Crossref][PubMed][Google Scholar]*

2. Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL, Loscalzo J. Harrison's principles of internal medicine. Vol. II. *17th ed. New York: McGraw-Hill Medical; 2008. p. 1761 [Crossref] [PubMed][Google Scholar]*

3. Vagbhata. Sarth Vagbhata. Sutrasthana, Doshabhediya Adhyaya, 12/65. In: Garde G, editor. *Reprint. Varanasi: Chaukhambha Surbharati Prakashan; 2109. p. 59 [Crossref][PubMed][Google Scholar]*

4. Vagbhata. Sarth Vagbhata. Sutrasthana, Doshabhediya Adhyaya, 12/66. In: Garde G, editor. *Reprint. Varanasi: Chaukhambha Surbharati Prakashan; 2109. p. 59 [Crossref][PubMed][Google Scholar]*

5. Solanki AV, Katara R, Meena HML. Ayurvedic perspectives on chronic kidney disease: a review of classical wisdom and contemporary applications. Ayushdhara Int J Res Ayush Allied Syst. 2024 Nov-Dec;11(6). *[Crossref][PubMed][Google Scholar]*

6. Asutkar VG, Joshi YV, Asutkar SG, Paliwal A. Exploration of Dhatu Dushti in disease. Asian J Multidiscip Stud. 2015 Dec;3(12):147. *[Crossref][PubMed][Google Scholar]*

7. Trikamji Y, editor. Commentary Ayurveda Dipika of Chakrapani on Charaka Samhita of Charaka, Sutra Sthana; Vividhasitapitiyam: Chapter 28, Verse 5. 1st ed. Varanasi: Chaukhambha Surbharati Prakashan; 2009. *p. 177 [Crossref][PubMed][Google Scholar]*

8. Trikamji Y, editor. Commentary Ayurveda Dipika of Chakrapani on Charaka Samhita of Charaka, Viman Sthana; Srotovimanam: Chapter 5, Verse 9. 1st ed. Varanasi: Chaukhambha Surbharati Prakashan; 2009. *p. 251 [Crossref][PubMed][Google Scholar]*

9. Kunte AM, Narve KS, editors. Commentary Ayurvedarasayana of Hemadri on Ashtangahridaya of Vagbhata, Nidana Sthana; Jwara Nidanam: Chapter 1, Verse 8. Varanasi: Chaukhambha Sanskrit Sansthan; 2012. p. *443 [Crossref][PubMed][Google Scholar]*

10. Chaudhary S, Godatwar P, Sharma R. Standardization of Rakta Sara Pariksha: A survey-based study. J Biol Sci Opin [Internet]. 2015;3(1):33. *Available from: [Article][Crossref][PubMed][Google Scholar]*

11. Arunadatta, Commentator. Sarvangasundara Commentary, Vagbhata, Ashtangahridaya, Sutrasthana, Doshabhediya Adhyaya, 12/65-66. In: Kunte AM, Narve KS, editors. Varanasi: Chaukhambha Sanskrit Sansthan; 2012. *p. 206 [Crossref][PubMed][Google Scholar]*