



**STUDIES ON RUKSHA GUNA OF VATA DOSHA AND VALIDATION OF ITS ASSESSMENT CRITERIA**

**Sadhu Sovan<sup>1\*</sup>, Chattopadhyay Abichal<sup>2</sup>, Sengupta Apala<sup>3</sup>, Khatun Hazera<sup>1</sup>**

<sup>1</sup>Assistant professor, Dept. of Basic principle and Siddhanta, Raghunath Ayurved Mahavidyalaya and Hospital, Purva Medinipur, West Bengal.

<sup>2</sup>Reader and HOD of Sharir Samhita, Institute of Post Graduate Ayurvedic Education and Research at S.V.S.P.Hospital, Kolkata.

<sup>3</sup>Lecturer, Dept. of Roga Nidan and Vikriti Vigyan. Institute of Post Graduate Ayurvedic Education and Research at S.V.S.P.Hospital, Kolkata, India.

**ABSTRACT**

*Guna* (attribute) is one of the causes for the efficacy of any substance and is inseparable concomitance with substance. *Ruksha guna* is one of the *Vata gunas* perform the action of *Dosha soshana karma* (absorption). In broad perspective *Soshana karma* may be taken as the exchange of various materials in between the cell and respective environment. No study in context to the assessment of *Ruksha guna* has yet been carried out in modern perspective in the field of *Ayurveda*. The present study, was planned to evaluate the etymological and syntactical derivation of the *Guna* of *Vata dosha*, the biophysical and molecular basis of the *Ruksha guna*. and to validate the assessment criteria of *Ruksha guna*. For the assessment of *Ruksha guna*, observed the relative changes in the skin pH and skin moisture with the level of vascular osmolality. These parameters are indicators of skin hydration in both healthy (with *Dhatu samya lakshana*) and *Twaka rukshata* condition (as patient with *Rakta kshaya lakshana*). Comparing the relation of skin pH and skin hydration along with vascular osmolality in both group to reveal the relation between osmolality and *Rukstwa* (roughness) the study was conducted. The study concluded that *Ruksha guna* of *Vata dosha* is critical requirement to make cell alive or to sustain the cellular homeostasis by its absorption and transport mechanism. *Rakta kshaya* may be correlated with decrease in the amount of circulatory hemoglobin in plasma. *Rukshatwa* therefore correlate with plasma osmolality and assessed by skin pH and hydration.

**KEYWORDS:** *Ayurveda*, *Ruksha guna*, Skin pH, Skin moisture.

**INTRODUCTION**

*Ayurvedic* description of biological study includes a delicate pattern of distinction in between the structural and functional component in every living object<sup>(1)</sup>. Though there is a Simultaneous compilation of the both in order to perform any physiological action<sup>(2)</sup>. Concept of *Guna* is therefore signify some of the molecular constituents of the cell having the potency to induce the vital cell function and regulate the act of homeostasis i.e. *Dhatu samya*<sup>(3)</sup>.

*Guna* is one of the *Kaaran*<sup>(4)</sup> which is the cause for the efficacy of any *Dravya* and is inseparable concomitance with *Dravya*<sup>(5)</sup>. Four types of *Guna*, i.e., *Sartha guna*, *Gurvadi guna*, *Atma guna*, *Parade Guna*<sup>(6)</sup> whereas other classification of these *Gunas* in to three categories i.e. *Vaisesika guna*, *Samanya guna*, *Atma guna*<sup>(7)</sup>. *Gurvadi guna* have more utility and significance in day to day practice.<sup>(8)</sup> *Gurvadi gunas* are called *Sharir dhatu guna* or *Samanya guna*<sup>(9)</sup>, such as *Guru*, *Laghu*, *Sita*, *Ushna*, *Snigdha*, *Ruksha*, *Manda*, *Tikshna*, *Sthir*, *Sara*, *Mridu*, *Kathin*, *Visad*, *Picchil*, *Slakshna*, *Kshara*, *Sthula*, *Sukshma*, *Sandra*, *Drava*<sup>(10)</sup>. *Vata dosha* is the prime *Dosha* which control or regulate *Pitta* and *Kapha dosha* of the body<sup>(11)</sup> and it possesses seven *gunas*<sup>(12)</sup> these *Gunas* possess different *Pancha bhoutik* composition. *Ruksha*, *Shita*, *Laghu*, *Sukshma*, *Vishad*, *Kshara* are predominated by *Agni vayu mahabhuta*, *Apa* & *Vayu mahabhuta*, *Agni*, *Vayu* and *Akash mahabhuta*, *Agni*,

*Vayu* & *Akash mahabhuta*, *Prithivi*, *Agni* & *Vayu mahabhuta*, *Vayu mahabhuta* respectively<sup>(13)</sup>.

Minutes to the biggest pores, both visible and invisible channels, and all kind of spaces both open and closed are *Akashiya*, *Agni* is essential for all kinds of changes or transformation of physiological activities our body. *Jala mahabhuta*, the basic element is responsible for cohesion, attraction, and fluidity. *Vayu mahabhuta* may be responsible for all kind of initiation, regulation of movement. *Prithivi mahabhuta* forms the mass of the body<sup>(14)</sup>.

The basic qualities of *Vata* are assessed through the physiological activities, pathological manifestations and therapeutic measures. According to *Ayurvedic* context *Vata* provide the physiological action of *Utsaha*, *Ucchas*, *Niswas*, *Chesta*, *Dhatugati* & *Mokshagoti*<sup>(15)</sup>. *Vata* possesses the *Ruksha* property which is assessed through its action of *Dosha samsoshana*<sup>(16)</sup>. The term *Dosha samsoshana* involves with a broad perspective of cellular transport. Transport through the cell membrane is a duly depends upon the structural constituent of the cell. Different enzyme and components of the membrane are responsible for the selective transport nature of the cell membrane. It is obvious that structural morphology of the cell membrane is the essential constituent to perform the trans membranous transport system.<sup>(17)</sup>

*Rakta kshaya* is a pathological condition in which *Twak* becomes *Sphutita*, *Parush*, *Malina* and *Ruksha*<sup>(18)</sup>. *Rakta kshaya* may be correlated with decrease in the amount of circulatory hemoglobin in plasma. The decreased level of hemoglobin results for decrease in plasma volume and capillary hydrostatic pressure. The skin which is supplied by coetaneous blood vessels excretes large volume of fluid irrespective to humidity, temperature and other factors<sup>(19)</sup>. Theses mechanism is also regulated by the concentration of Na<sup>+</sup>, Cl<sup>-</sup>, so, any alteration in osmolality of plasma i.e. the alteration in the concentration of Na<sup>+</sup>, Cl<sup>-</sup> may result for dry skin <sup>(20)</sup>.

## MATERIAL AND METHODS

The study has its due importance to verify the hypothesis that is the level of skin pH and skin moisture will alter with the altered level of blood osmolality. The *Ruksha guna* of *Vata dosha* signify the fundamental cellular activity of *Soshana karma* i.e. the act of cellular absorption or the mechanism of various transcellular transport system. Osmolality of the circulatory fluid largely regulates the inwards or outwards movements of tissue fluids. Again the level of tissue fluid reflects the degree of hydration of the cells. Therefore the extent of skin moisture may results for the hydrated condition of the adjacent cell structures. Considering this above principle the study had been carried out with a group of healthy volunteers having the criteria of *Dhatu samya lakshana* and observed the relative changes in the skin pH and skin moister with the level of vascular osmolality. We had created another group with some patients having the *Rakta kshaya lakshans* and observed the relative changes in between the same parameters mention above.

Group -A consists of normal healthy volunteer with normal healthy skin and adequate skin moisture. Again normal moist skin is the obvious result of presence of adequate fluid in tissue space. Therefore riding of the selected objective parameters i.e. skin pH and skin moister might specificity a significant relationship with the level of blood osmolality.

Group-B the same objective parameter are recorded for those patients where dryness of skin was present as subjective criteria. The alternation in the level of the vascular osmolality was present as a pathological process of dry skin. Simultaneously the value of skin pH and skin moister was also altered in condition of dry skin. This altered level of skin pH and skin moisture may specify some significant relationship with the altered level of vascular osmolality. The level of vascular osmolality had been measured by a relative calculation of,

$$\text{Hb\%} \times \text{Na}^+ \times \text{K}^+ / \text{urea} \times \text{glucose}.$$

The skin pH and skin moisture were recorded with the help of digital instrument.

### Criteria for selection of the patients

The study was conducted over 25 healthy volunteers at the age group of 16 -70 years and 25 patients having the *Rakta kshaya lakshana* of same age group had been selected from OPD and IPD of IPGAE&R at SVSP hospital irrespective of theirs sex, occupation and religion etc. Group A -Apparently healthy volunteer, and Group B-patients having *Rakta kshaya lakshans*. The healthy

volunteers (Group-A) were taken under the control group for the assessment and standardization of the normal relation in between the vascular osmolality along with the level of skin pH and skin moisture. The skin pH and skin moisture were taken in winter season and minimum fifteen reading of upper (mainly on the chick and neck), middle (mainly flexor surface of the hand) and lower part (mainly calf muscles and region of foot) of skin were taken in every alternated day. Patient were advised not take soap or any external application in between the duration of studies.

The clinical group (Group-B), consists of diagnosed patients of dryness of skin (*Twak rukshata*) were taken for assessment of increased *Ruksha guna* of *Vata dosha*. Aggravation of *Ruksha guna* of *Vata dosha* in respect to *Twak rukshata* is found in different diseases but for the clinical porpoise to assess the aggravated *Ruksha guna* diseases phenomenon has not be considered whereas *Rakta kshaya lakshana* is not a significant disease phenomenon but merely the sign and symptom of *Rakta kshaya* has been accounted. Therefore under this studies the selected patient presented with *Rakta kshaya lakshana* were not having low hemoglobin level and other significant pathological altered state of blood. *Twak Rukshata* is also found in *Rakta kshaya*. As the main criteria are to assess the *Ruksha guna* therefore the patient with *Rakta kshaya lakshana* in terms of *Twak rukshata* was included in this study. A relative assessment of blood osmolality had been calculated in every patient of both the control and experimental groups.

### EXCLUSION CRITERIA FOR GROUP - A

1. Apparently healthy volunteers below the age of 16 years and above 70 years of age.
2. Healthy volunteers those who are not willing to include themselves in the study.
3. Apparently healthy volunteers suffering from any other systemic diseases like hepatic failure, renal failure, cardiac disorder, diabetes mellitus, and malignancy and thyroid disorders.
4. Apparently healthy volunteers not satisfying the *Dhatu samya lakshanas*.
5. Apparently healthy volunteers receiving any other supplementary therapy.

### EXCLUSION CRITERIA FOR GROUP - B

1. Patients below the age of 16 years and above 70 years of age.
2. Patients those who are not willing to included themselves in the study. Patients suffering from any other systemic diseases like hepatic failure, renal failure, cardiac disorder, diabetes mellitus, malignancy and thyroid disorders.
3. Patients not satisfying the maximum subjective criteria of *Rakta kshaya*.
4. Patients receiving any other supplementary therapy.

### INCLUSION CRITERIA FOR GROUP - A

1. Apparently healthy volunteers having the sign and symptoms of *Dhatu samya*.
2. Apparently healthy volunteers above 16 years of age and below 70 years of age.

3. Apparently healthy volunteers willing to include themselves in the study.
4. Apparently healthy volunteers satisfying the maximum subjective criteria for *Dhatusamya*

**INCLUSION CRITERIA OF GROUP - B**

1. Patients having the sign and symptoms of *Rakta kshaya*.
2. Patient above 16 years of age and below 70 years of age.
3. Patients willing to include themselves in the study.
4. Primarily detected *Rakta kshaya* patients not taking any medicines.
5. Patients satisfying the maximum subjective criteria for *Rakta kshaya*.

**Instruments:** For the study two instruments (skin moisture meter and skin pH meter) were used to assess these parameters. These parameters are indicators of skin health in both healthy (with *Dhatu samya lakshana*) and *Twaka rukhata* condition (as patient with *Rakta kshaya lakshana*).

**Calculation of blood osmolality-** The osmolality is a physical nature of the body fluid which preset the diffusion activities of a solution. By definition it is the osmolal concentration of a solution. In other word it may express as the amount of pressure applied on the semi-permeable membrane to oppose the act of diffusion. The entire permanent and nonpermanent molecule dissolved into water generates this physical property of body fluid. The level of vascular osmolality calculates by a relative calculation of different vascular components. Such as  $Hb\% \times Na^+ \times K^+ / \text{urea} \times \text{glucose}$ .

**OBSERVATIONS AND RESULTS**

- Total no. of individuals- 50
- Total no. of healthy volunteers - 25
- Total no. of patient (with *Rakta kshaya*) - 25
- Total no. of registrations- 50
- LAMA- 00
- Completed – all the individuals of group A & group B had completed the study.

**Method of calculation-Healthy volunteers (group-A) and Observation of group-B with *Raktakshaya lakshana***

**Age wise prevalence-**In Group-A maximum number of healthy individuals were found of 26-30 years age group i.e. 72%. Whereas 24% of individual belongs to 21-25 year and 4% were found to 46-50 year age group. In group-B maximum no. of patient were found of 26-30 years of age group i.e. 32%. Whereas 21-25 year age group consists 12%, 31-35 years group consists 16%, 36-40 year consists 12%, 41-45 year group consists 20%, 46-50 year consists 2% of patients.

**Sex wise prevalence-**In Group-A the maximum number of individuals were found in Male subject i.e. 64% where as 36% were found in female group. In group-B maximum number of patient were found in male subject i.e. 84%. Whereas 16% of them were found in female subject.

**Religion wise prevalence-**In Group-A 64% of the entire sample group were belong from muslim community where

as 36 % of the individuals are found to Hindu group. In group-B the maximum no. of patients i.e. 68% were found in Muslim community.

**Marital status wise prevalence-**In Group-A 72% of the individuals were found to married whereas 28% were found to unmarried. In group-B maximum no. of (i.e. 84%) patient were found married whereas only 16% remains single

**Social status wise prevalence-**The maximum portions of the population i.e. 92% were found to medium socio economic status. In group-B maximum i.e. 68% of patients were found in low income group. Whereas only 28% were belong to medium income group.

**Dietary habit wise prevalence-** In Group-A the maximum no. of individuals i.e. 76% were found non-vegetarian whereas only 24% Of the sample belongs to vegetarian. In group-B maximum number of patient i.e. 88% were belong to non-vegetarian, whereas only 12% of them were fond vegetarian.

**Table 1: Fluid intake wise prevalence / 24 hours (Group-A)**

Amount of fluid intake / 24 hrs.	No. Of Persons	Prevalence (in percentage)
More than 2 liters	15	60%
Within 2-3 liters	8	32%
More than 4 liters	2	8%
Total	25	100%

**Table 2: Fluid intake wise prevalence/24 hours - (Group-B)**

Amount of fluid intake/24 hrs.	No. Of Persons	Prevalence (in percentage)
More than 2 liters	16	64%
Within 2-3 liters	7	28%
More than 4 liters	2	8%
Total	25	100%

**The level of blood osmolality -** In group-A it arranged in increasing order. Then range was planned according to the conceived data and maximum range of percentage of prevalence. On this basis result was calculated bellow.

**Table 3: The level of blood osmolality with percentage**

Blood osmolality gm\lit	Number of person	Prevalence (in percentage)
263.1-266.0	9	36%
266.1-269.0	11	44%
269.1-272.0	5	20%

In group-A total range of blood osmolality found in between 263.1-272.0 and maximum percentage of person (i.e. 44%) were found in between the range of 266.1-269.

**Table 4: Range wise prevalence of skin pH (Group A)**

Skin pH	Number of person	Prevalence (in percentage)
5.26-5.75	6	24%
5.76-6.25	14	56%
6.26-6.75	5	20%

In group-A total range of skin pH found in between 5.26-7.75 and maximum percentage of person (i.e. 56%) were found in between the range of 5.76-6.25.

**Table 5: Range wise prevalence of skin moisture (%) (Group A)**

Skin moisture (%)	Number of person	Prevalence (in percentage)
20%-25%	10	40%
26%-30%	13	52%
31%-35%	2	8%

In group-A maximum 52% of person (i.e. 16 person) were found between the range skin moisture of 26%-30%. But for the maximum range (10+13) was taken as final value. It indicates that in group-A maximum percentage of prevalence of skin moisture (%) were found in between 20-30%. Therefore the above range of both the parameters indicate the normal range of skin pH lies in between 5.76-6.25 and skin moisture 20-30% in a healthy individual.

**Table 6: Range wise prevalence of skin pH (Group B)**

Skin pH	Number of person	Prevalence (in percentage)
5.90-6.25	2	8%
6.29-6.69	3	12%
6.83-7.24	11	44%

**Table 8: Comparative data and analysis of group-A and group-B of blood osmolality, skin ph and skin moisture**

Objective Parameter	Mean $\pm$ SEM		T Value	P Value
	Group A	Group B		
Blood osmolality (in gm/lit)	267.052 $\pm$ 0.404	290.568 $\pm$ 0.623	31.67	<0.001
Skin pH	5.98 $\pm$ 0.31	6.971 $\pm$ 0.176	5.3	<0.001
Skin Moisture	25.695 $\pm$ 0.571	18.876 $\pm$ 0.992	5.596	<0.001

It was observed from the above table that blood osmolality (in gm/lit) was more in group-B in comparison with Group A and likewise the skin pH were more in Group B in comparison with Group A as skin moisture was more in Group A in comparison with Group B.

## DISCUSSION

**Age wise** -Maximum numbers of the healthy volunteers were from the age group of 26-30 years and 21-25 years respectively, due to selection of the healthy volunteers were made from the PG scholars and staffs of this institute. Maximum number of the *Rakta kshaya lakshana* patient were from the 26-30 years, who were presented with *Rakta kshaya lakshana* but from 21-50 years of the patients *Rakta kshaya lakshana* were presented who included themselves under the study as maximum number of the patients attending the OPD were from the low income group. Therefore their nutritional deficiency one of the major factor and at the age group of 26-30 years all are engaged with excessive physical work with malnutrition. Therefore *Rakta kshaya lakshana* is very much significant in those age groups.

**Sex wise** - Maximum numbers of the healthy volunteers were male as number of male PG scholars and staffs are more than that of female PG scholars and staffs. Maximum numbers of the patients presented with *Rakta kshaya*

7.28-7.69	5	20%
7.78-7.81	4	16%

In group-B total range of skin pH found in between 5.90-7.81 and maximum percentage of person (i.e. 56%) were found in between the range of 6.83-7.24. But to get the maximum range skin pH (11+5= 16 patient) it is found that 64% of patient lies in between 6.83-7.69 range. These indicate that in *Rakta kshaya* condition skin pH become alkaline in nature.

**Table 7: Range wise prevalence of skin moisture (%) (Group B)**

Skin moisture (%)	Number of person	Prevalence (in percentage)
11.2-14.9	3	12%
15.4-19.7	17	68%
21.1-22.6	2	8%
29.7-29.9	2	8%
29.8-31.0	1	4%

In group-B maximum 68% of patients (i.e. 17patients) were found between the range skin moisture of 15.4%-19.7%. So the maximum percentage of prevalence found 68%. It indicates that in group-B i.e. in *Rakta kshaya* condition maximum percentage of patient obtain less moisture content in their skin.

*lakshana* were male. It reveals that, *Rakta vaha srota dusti* is caused by *Atap sevan* (sun light exposure) resulting in *Rakta kshaya lakshana* and as these patients were used to expose them in sun light because of their occupation. Therefore numbers of male patients were more.

**Religion wise** -Maximum numbers of healthy volunteers were Hindu, it reveals nothing significant, but it may be due to inclusion of the healthy persons from PG scholars and the staffs are Hindu by birth. Maximum numbers of the patients having the *Rakta Kshaya lakshana* were Muslims reveals that the maximum numbers of the patients attending our OPD are from Muslim community.

**Marital status wise** -Maximum numbers of healthy volunteers included under study were married as the staffs and PG scholars were aged in terms of marital state. Maximum numbers patients having *Rakta kshaya lakshana* included under study were married signifies the relation in terms of marital age.

**Income wise** - Maximum numbers of healthy volunteers were from the mid income status signifies the scholars and the staffs included under study were having a significant income. Maximum numbers of patients of *Rakta kshaya lakshana* were from the low income group reveals that the OPD patients attending in the Govt. *Ayurvedic Hospital* are

not having a significant income in respect to service or any other occupation.

**Dietary habit wise** -Maximum numbers of healthy volunteers were non-vegetarian as the maximum numbers of PG scholars included under study were Bengali and were having a traditional non-vegetarian food habit. Maximum numbers of healthy volunteers were having the fluid intake up to 2 liters per day, as the scholars used to practice the sedentary lives therefore up to 2 liters fluid intake is more than sufficient in relation to fluid output.

**Fluid intake wise** -Maximum numbers of the patients having the *Rakta kshaya lakshana* were used to take up to 2 liters of water which is less than that of their requirement because of their excessive physical work and electrolyte imbalance. This ultimately leads to non formation of *Rakta* from *rasa Dhatu* as for the formation of *rasa Apa mahabhuta* plays an important role.

In group B the significant increase level of blood osmolality in comparison to healthy volunteer reveals that aggravation of *Ruksha guna* causes increased *Dosha Samsoshana karma* reflecting *Twak rukshata*. In true sense when blood osmolality is increase then there is an increase of *Snigdha guna* in the inner aspect subsequently the outré portion of cell decrease *Ruksha guna*. The Phenomenon is implied in these said significant criteria. In group B the significant increase level of blood osmolality in comparison to healthy volunteers reveals that due to the increase of *Ruksha guna* there is a significance elevation of skin pH and skin moisture along with the blood osmolality, which create the relation between osmolality along with pH and moisture level and also stand for a significant tool to asses *Twaka rukswata*.

## CONCLUSION

*Ruksha guna* of *Vata dosha* is critical requirement to make cell alive or to sustain the cellular homeostasis by its absorption and transport mechanism. Vascular osmolality reflects the hydration state of any tissue including skin and regulated by the relative value of plasma proteins, Na<sup>+</sup>, Cl<sup>-</sup>, Bicarbonate and percentage of circulatory hemoglobin. In *Rakta kshaya*, the circulatory hemoglobin reduced and reflect to the relative reduction of plasma osmolality and finally manifest as *Twaka ruksta*. Therefore *Rukshatwa* correlate with level of plasma osmolality and asses by the reading of skin pH and skin moister.

## REFERENCES

1. Susruta Samhita of Susruta with Nibandhasangraha Commentary of SRI. Dalhanacharya Edited by - Vaidya Jadavji Trikamji Acharya, published by - Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 15, sloka 06. Page 67.
2. Astanga Hriday with Sarvanga Sunadara of Arundutta and Ayurved Rasayan of Hemadri. Edited by - Hari Sastri Paradkar Vidya, published by- Chowkhamba Orientalal, Varanasi, 7<sup>th</sup> edition, 1982. Sutrasthan, Chapter 1, sloka 18, page 12.
3. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 1, sloka 51. Page 13.
4. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 1, sloka 53. page 14.
5. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 1, sloka 51. page 13.
6. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 1, sloka-49. page 12.
7. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 1, sloka-49. page 12.
8. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 26, sloka-138. page 10.
9. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 1, sloka-49. page 12.
10. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sarirasthan, chapter 6, sloka-10. page 331.
11. Sharangadhar Samhita of Maharshi Sharangadhar, Edited by - Shailaja Srivastava, published by - Chaukhamba Orientalal, Varanasi, 2005 ed., Purvakhanda, chapter 5, sloka 25. page 40.
12. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 26, sloka-59. page 16.
13. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 26, sloka-11. page 138.
14. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 26, sloka-11. page 138.
15. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by - Yadavji Trikamji Acharya, published by- Chowkhamba Orientalal, Varanasi, 2009 ed. Sutrasthan, chapter 1, sloka 51. Page 13.

- Oriental, Varanasi, 2009 ed. Sutrasthan, chapter 18, sloka-49. page 109.
16. Astanga Hriday with Sarvanga Sunadara of Arundutta and Ayurved Rasayan of Hemadri. Edited by – Hari Sastri Paradkar Vidya, published by- Chowkhamba Oriental, Varanasi, 7<sup>th</sup> edition, 1982. Sutrasthan, Chapter 1, sloka 18, page 12.
17. Guyton Text Book of Medical Physiology- by C. Guyton-eighth edition – PRISM BOOK PVT LTD Bangalore India- chapter-2 page no.-11.
18. Charak Samhita of Agnivesha with Ayurved Deepika Commentary of Chakrapani Dutta. Edited by- Yadavji Trikamji Acharya, published by- Chowkhamba Oriental, Varanashi, 2009 ed. Sutrasthan, Chapter 17, sloka 64. page 1038.
19. General pathology of J.B. Walter & I.C. Talobot, Churchill Livingstone; Seventh edition; Chapter 38, page 662.
20. General pathology of J.B. Walter & I.C. Talobot, Churchill Livingstone; Seventh edition; Chapter 38, page 662.

**Cite this article as:**

Sadhu Sovan, Chattopadhyay Abichal, Sengupta Apala, Khatun Hazera. Studies on Ruksha Guna of Vata Dosha and Validation of its Assessment Criteria. International Journal of Ayurveda and Pharma Research. 2016;4 (10) :63-68.

**Source of support: Nil, Conflict of interest: None Declared**

**\*Address for correspondence**

**Dr Sadhu Sovan**

Assistant professor,  
Dept. of Basic principle and Siddhanta,  
Raghunath Ayurved Mahavidyalaya and  
Hospital, Purva Medinipur,  
West Bengal.

Mob-09231686083

Email: [doctor.ssadhu11@gmail.com](mailto:doctor.ssadhu11@gmail.com)

