

"A Nidanatmaka (Epidemiological) Study Of Raktadustikara Nidana In Patients Suffering From Vyanga With Special Reference To Melasma"

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ABSTRACT-

Context: According to Ayurveda, Vyanga is one of the diseases mentioned under Kshudraroga and is, also considered as a svatantra vyadhi. Maharshi Charaka and Susruta both have considered Vyanga as raktajaroga. Thus Vyanga is a painless condition for body but it is painful for mind.

Aim: Present study was intended to assess the association between raktadustikara nidana and Vyanga. Methods: A nidanatmaka study was conducted at NIA Jaipur in which 200 subjects of Vyanga were included after informed consent and data were collected to assess the association between raktadustikara nidana and Vyanga.

Results: It was found that 34.16% patients were taking raktadustikara nidana in the current nidanatmaka survey.

Conclusion: In this study it was concluded that there is some association between the raktadustikara nidana and Vyanga. So Vyanga can be corrected by treating as a raktapradoshaja vikara.

Key Words: Vyanga, Raktadustikara Nidana, Kshudraroga, Raktapradoshaja vikara.

INTRODUCTION-

According to Ayurveda, Vyanga is one of the diseases mentioned under Kshudraroga and is, also considered as a svatantra vyadhi. Maharshi Charaka and Susruta both have considered Vyanga as raktajaroga. Vyanga is a disease of skin characterised by niruja, tanu, shyava varna yukta mandala on mukhapradesha and hence decreases complexion and lustre of the skin¹. Vyanga is classified into four types named as vataja, pittaja, kaphaja and raktaja². The disease can be correlated with melasma in modern science.

Melasma is a common, acquired and symmetrical hypermelanosis characterized by more or less dark brownish maculae, with irregular contour, but clear limits, on photo exposed areas especially the face, forehead, temples, and more rarely on the nose, eyelids, chin, and upper lips³. It most commonly results from exposure to sunlight however, in our day to day life, different skin problems including melasma are seen due to air pollution, habits of using different cosmetics, stressful life, and dietary changes inclination towards junk or fast foods, improper sleeping habits etc.

Thus *Vyanga* is a painless condition for body but it is painful for mind. It requires a proper treatment and therapy.

Many studies have attempted to calculate the prevalence and incidence of melasma from data available in dermatology clinics. However, this approach may underestimate the number of affected individuals given that some patients with milder disease may forgo clinical evaluation, as well as the potential for misdiagnoses. A

prospective telephone-based study in a community of Latino women in the South-western United States found a prevalence of 8.8% amongst 500 interviewed individuals⁴.

Another prospective study on melasma prevalence in a New York City dermatology private practice found a prevalence of 8.2% amongst 1000 Latino patients. Globally, the prevalence of melasma has also varied. A study of 3298 people in Saudi Arabia revealed a 2.9% prevalence, compared to a prevalence of 13.4–15.5% seen in an Arab-American population in Michigan. Additionally, a retrospective study in a health centre in Ethiopia demonstrated a 1.5% prevalence. Studies have shown that melasma has a female predominance. Although the general acc epted female to male ratio is 9:1, a more recent large, multicentre study of 953 melasma patients in Brazil found a 39:1 ratio⁵.

An Indian study of 312 patients with melasma found a 4:1 female to male ratio. During pregnancy, the prevalence likely increases, which was seen in a cross-sectional study in Tehran with a 15.8% prevalence amongst pregnant women. Similarly, in a randomly selected sample of 2000 pregnant women in India, there was a 50.8% prevalence. Fewer studies have been carried out on men with melasma, but they clinically tend to exhibit similar clinical features and exacerbating factors. Two major risk factors found in Indian and Latino men include sun-exposure and outdoor work⁶.

NEED OF STUDY:-

Vyanga is a *Kshudraroga* having simple aetiology and symptoms, but in exceptional cases this can produce a marked cosmetic disability and give rise to mental stress. Considering the cosmetic value of the disease, as *Vyanga* is a distressing disorder, there is definite need to know the etiopathogenesis of disease (*Vyanga*).

AIMS AND OBJECTIVES -

- 1. The aims and objectives of the survey study was-
- 2. To conduct a survey study on raktadustikara nidana in Vyanga.

METRIAL AND METHODS –

A survey study was conducted at NIA O.P.D, I.P.D. and various camps in Jaipur, Rajasthan and the data have been gathered to know the role of *raktadustikara nidana* in the pathogenesis of *Vyanga* disease in patients of surroundings, a duly prepared proforma was made for the study. To fulfil the above aims, a proforma was designed. Many questions were made on *raktadustikara nidana*. These questions of survey were based on *Charaka Samhita sutrasthana*⁷& other *Samhita*. The first few questions were on demographic information of the patients and *prakrati* assessment was done on the basis of specially prepared *prakrati* proforma. In survey proforma, various factors were noted like-assessment of *agni*, *vyayamashakti* of patient, and assessment of *kostha* etc.

- 1. Selection criteria
- 2. Observations and Result
- 3. Discussion

1. SELECTION CRITERIA -

A. Inclusion Criteria:-

- 1. Patients with the classical signs and symptoms of *Vyanga*.
- 2. Patients of both sexes from 16 to 50 years of age.
- B. Exclusion Criteria:-
- 1. Known case of any active skin malignancy.
- 2. Subjects having known chronic, contagious infectious disease, such as active tuberculosis, hepatitis B or C,
- 3. Known hypersensitivity to any of the ingredients used in study drug.
- 4. Cases of burns.
- 5. Any skin allergy.
- 6. Women those taking oral contraceptive pills therapy.

- 7. Any hypopigmentation disease.
- 8. Any lesion of other skin disease.

2. OBSERVATIONS AND RESULT:-

Table no.1 Age wise percentage prevalence of *Vyanga* patients:

Age in(yrs.)	Total no. of patients	%
16-25	80	40%
26-35	65	32.5%
36-45	55	27.5%

Table no.2 Gender wise percentage prevalence of *Vyanga* patients:

Gender	Total no. of patients	%
Male	92	46%
Female	108	54%

Table no.3 Religion wise percentage prevalence of *Vyanga* patients:

Religion	Total no. of patients	%
Hindu	159	79.5%
Muslim	40	20%
Sikh	1	0.5%

Table no.4 Marital-status wise percentage prevalence of *Vyanga* patients:

Marital status	Total no. of patients	%
Married	124	62%
Unmarried	76	38%

Table no.5 Desha wise percentage prevalence of Vyanga Patients:

Desha	Total no. of patients	%
Sadharana Desha	44	22%
Jangala Desha	152	76%
Anupa Desha	4	2%

Table no.6 Occupation wise percentage prevalence of *Vyanga* Patients:

Occupation	Total no. of patients	%
House wife	71	35.5%
Student	63	31.5%
Private job	55	27.5%
Govt. job	11	5.5%

Table no.7 Education wise percentage prevalence of *Vyanga* patients:

Educational status	Total no. of patients	%
Graduation	74	37%
Senior	41	20.5%
Primary	34	17%
Post-graduation	25	12.5%
Secondary	24	12%
Illiterate	2	1%

Table no.8 Socio-economic status wise percentage prevalence of *Vyanga* patients:

Socio-economic status	Total no. of patients	%
Upper middle	86	43%
Lower middle	75	37.5%
Poor	39	19.5%

Table no.9 Sleep wise percentage prevalence of Patients:

Sleep	Total no. of patients	%
Sound	171	85.5%
Disturbed	29	14.5%

Table no.10 *Divasvapna* wise percentage prevalence of *Vyanga* patients:

Divasvapna	Total no. of patients	%
No	121	60.5%

Yes	79	39.5%

Table no. 11 Agni wise percentage prevalence of Vyanga patients:

Agni	Total no. of patients	%
Sama	116	58%
Vishama	8	4%
Tīkshna	33	16.5%
Manda	43	21.5%

Table no.12 *Kostha* wise percentage prevalence of *Vyanga* patients:

Kostha	Total no. of patients	%
Madhyama	106	53%
Mridu	70	35%
Krura	24	12%

Table no.13 Sharirika Prakrti wise percentage prevalence of Vyanga patients:

Sharirika Prakrti	Total no. of patients	%
VP	85	42.5%
PK	69	34.5%
VK	46	23%

Table no. 14 Diet wise percentage prevalence of *Vyanga* patients:

		%
Diet	Total no. of patients	
Veg.	157	78.5%
Mixed	43	21.5%

Table no.15 Intake of Vidahi Ahara wise percentage prevalence of Vyanga patients:

Vidahi Ahara	Total no. of patients	%
Fast Food	139	69.5%
Fast food with cold drink	43	21.5%

Preserved food	75	37.5%
Refrigerated food	101	50.5%
Food items stored for long time (lunch box)	51	25.5%

Table no.16 Intake of *Snigdha Ahara* wise percentage prevalence of *Vyanga* patients:

Snigdha Ahara	Total no. of patients	%
Ghee	153	76.5%
Oil	192	96%
Other dairy products	147	73.5%

Table no.17 Intake of *Ushna & Tīkshna Ahara* wise percentage prevalence of *Vyanga* patients:

Ushna & Tīkshna Ahara	Total no. of patients	%
Spicy food	143	71.5%

Table no.18 Intake of *Drava Ahara* wise percentage prevalence of *Vyanga* patients:

Drava Ahara	Total no. of patients	%
Milk	170	85%
Butter Milk	136	68%
Water in excess	37	18.5%
Sugarcane juice	136	68%
Lemon juice	128	64%
Favourite fruit juice	69	34.5%
Aerated drinks	47	23.5%
Liquids in empty Stomach	95	47.5%
Intake of liquid immediately after food	107	53.5%

Table no.19 Intake of *Pradusta Bahu Ushna Tīkshna Madya* wise percentage prevalence of *Vyanga* patients:

Pradusta Bahu Ushna Tīkshna Madya	Total no. of patients	%
Madhya	18	9%

Table no. 20 Intake of *Rasa* wise percentage prevalence of *Vyanga* patients:

Rasa	Total no. of patients	%
Atilavana (excess salt intake)	86	43%
Atikshra (excess alkali)	64	32%
Atiamla (excess intake of sour)	95	47.5%
Atikatu (excess intake of pungent)	85	42.5%

Table no.21 Intake of Viruddha Ahara wise percentage prevalence of Vyanga patients:

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Viruddha Ahara	Total no. of patients	%	
Milk+Fish	00	0.0%	
Curd+Fish	11	5.5%	
Milk+Egg	17	8.5%	
Fruits+Egg	00	0.0%	
Chiken+Milk	00	0.0%	
Chiken+Curd	35	17.5%	
Milkshakes	117	58.5%	
Banana+Milk	28	14%	
Honey+Hot water	13	6.5%	
Curd+Rice+Milk	17	8.5%	
Udad + Milk/Curd (Dahivada)	53	26.5%	
Milk+Sweets	21	10.5%	
Raddish+Milk	11	5.5%	

Garlik+Milk	17	8.5%
Khichdi+Milk	41	20.5%
DahiKadi	134	67%
Raita + fruits	48	24%
Milly C. I. C. I. C.	47	22.5%
Milk/ Curd + Green leafy	47	23.5%
Vegetables		
Honey + Ghee	00	0.0%
Namkeen + Milk	12	6%

Table no.22 Intake of Mithya Ahara wise percentage prevalence of Vyanga patients:

Mithya Ahara	Total no. of patients	%
Upaklinna & Putibhakshana	85	42.5%
Atyashna	50	25%
Ajirnashana	63	31.5%
Adhyashana	74	37%

Table no.23 Intake of other *Ahara Nidana* wise percentage prevalence of *Vyanga* patients:

		%	
Type of others Ahara Nidana	Total no. of patients		
Shamidhanya Varga	96	48%	
Taila Varga	29	14.5%	
Mamsa Varga	43	21.5%	
Harita Varga	147	73.5%	
Dadhi Varga	160	80%	
Madya Varga	18	9%	
Kritanna Varga	125	62.5%	
Ahara Varga (Pindalu)	165	82.5%	

Table no.24 Viharaja Nidana wise percentage prevalence of Vyanga patients:

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		%
Viharaja Nidana	Total no. of patients	

Bhajatam Chatapa Anala	85	42.5%
Chardi Vega Pratighata	43	21.5%
Bhukta Diva Prasvapata	79	39.5%
Shram Abhighat	23	11.5%
Santap	8	4%
Kale Anavasechan	2	1%

Table no. 25 Manasika Nidana wise percentage prevalence of Vyanga patients:

Manasik Nidana	Total no. of patients	%
Krodha	102	51%

Table no.26 Svabhavaja nidana wise percentage prevalence of Vyanga patients:

Svabhavaja nidana	Total no. of patients	%
Sharat kala	37	18.5%

3. DISCUSSION:-

- Age- In the epidemiological study, maximum incidence of patients i.e. 40% were found in the age group of 16-25 years followed by next higher percentage of patients i.e. 32.5% belonged to the age group of 26-35 years. This incident indicates that the majority of the patients were suffering from *raktapradoshaja vikara* belonged to the young age group. Reasoning behind this finding might be because in this stage, people intake maximum amount of *nidana* which are mentioned for the disease like *drava*, *snigdha*, junk food, *dahi* etc. Due to their busy schedule, the timing of *ahara* intake also gets disturbs i.e. *Ajirnashana*, *adhyashana* etc. And maximum exposure of sun light also occurs. This age is associated with higher level stress. One's health get compromised for completing the other challenges of its life whether it be its personal life, official targets, social status etc. So, the lifestyle of people mostly includes *divasvapna*, *ratrijagarana*. In this age group, the people are crazy about their looks, so they blindly use different cosmetics, join gym and other body building techniques, involve in taking of heavy diet after doing heavy exercise. The common diet of gym going people is banana with raw milk or egg with raw milk irrespective of their digestion which comes under *samyoga viruddha* and *agni viruddha*. In younger generation, chances of *vyanga* are more as there are hormonal changes due to puberty. All these causative factors are responsible for vitiating the *raktadhatu* and ultimately reflects as a disease. (Table no.1)
- Gender-In present survey study the distribution of sex in 200 patients, revealed that maximum patients (54%) were female. This is suggestive that females are more conscious about their beauty and looks. Another cause for female dominancy might be the etiological factors like busy work schedule, habitual of taking *viruddha ahara*, *paryushita bhojana*, *mithya ahara*, *divasvapna* and stress that are more associated with the females and are among the causative factors of *raktapradoshaja vikara*.(Table no.2)
- **Religion-** In present survey study maximum number of patients were (79.5%) belonged to Hindu religion. This may be due fact that the site of the study was a Hindu dominant area.(Table no.3)
- Marital status- In present survey study maximum number of patients were married due to the age groups that have been selected in this study. Marital status was found to be insignificant in relationship to *raktapradoshaja vikara*.(Table no.4)

- **Desha** In present survey study maximum patients were belonged to *jangala desha*. It was simply because the site of the study was *jangala desha*. In *jangala desha*, *vata* and *pitta* are more dominant. Due to excessive *atapa* and *ahara* pattern, the skin related diseases are more.(Table no.5)
- Occupation- In the present survey study maximum number of patients were house wives i.e. 46.74%. This is suggestive that females are more conscious about their beauty and looks. Another cause for female dominancy might be the etiological factors like busy work schedule, habitual of taking *viruddha ahara*, *paryushita bhojana*, *mithya ahara*, *divasvapna* and stress that are more associated with the females and are among the causative factors of *raktapradoshaja vikara*.(Table no.6)
- **Education-** In present survey study maximum (99%) patients were educated while only 1% were uneducated. Thus the disease *Vyanga* does not have any relationship with educational status. More ever educated and uneducated patients are equally conscious about their beauty problems.(Table no.7)
- **Socio-economic status-** In present survey study majority of patients (80.5%) were belonging to middle class but disease *Vyanga* does not have any relationship with socio economic status. This data is only representative of socioeconomic status of the patients attending the hospital where study was carried out.(Table no.8)
- **Sleep-** In present survey study maximum, 85.5% patients were having sound sleep. Assessment of sleep is insignificant in survey study.(Table no.9)
- **Divasvapna** In present survey study approximately 40% patients were with *divasvapna* which aggravates the *raktapradoshaja vikara*.(Table no.10)
- Agni- In present survey study maximum i.e. 58.0% patients showed the state of samagni at time of clinical study. Although samagni is a state where the all dosha are in equilibrium, it is the balanced state of agni. It indicates that jatharagni has no direct role in the pathogenesis of raktapradoshaja vikara. Samagni gets impaired by irregularity in food intake. If food is not taken in accordance with the bala of agni then it may become incompatible. 8(Table no.11)
- *Kostha* In present survey study maximum i.e. 53.0% patients were having *madhyama kostha*. Assessment of *kostha* is insignificant in survey study and it is more significant in selecting the line of treatment.(Table no.12)
- Sharirika Prakrti- In present survey study maximum patients were of vatapittaja prakrti (42.5%) and kaphapittaja prakrti (34.5%) indicating role of pitta in the disease Vyanga. As vata is dominant dosha in the pathogenesis of disease Vyanga, so it may be difficult to cure the disease in vatapradhana prakrti patients. Pittapradhana prakrti patients are more susceptible for the disease Vyanga. (Table no.13)

Aharaja nidana:-

- **Diet:** In present survey study maximum numbers i.e. 78.5% patients were taking vegetarian diet. It may be due to general religious principle of Hindu especially in this area.(Table no.14)
- *Vidahi Nidana* In present survey study maximum number of patients i.e. 69.5% were taking fast food followed by the patients taking refrigerated food (50.5 %), preserved food (37.5%) food items stored for long time (lunch box) 25.5% and 21.5% patients taking fast food with cold drink as *vidahi nidana*. Frequent intake of *vidahi nidana* for long period is an important factor for the pathogenesis of *raktapradoshaja vikara* because it directly vitiates the *pitta* &, *rakta*. *Vidahi nidana* is difficult to digest i.e. *Kṛcchratpaka* leading to *amautpatti* and *raktasrotodushti*.(Table no.15)
- *Snigdha ahara* In present survey study maximum number of patients were habitual of intake of oil, ghee and other dairy products as *snigdha ahara*. This indicate *snigdha ahara* may enhance the morbid *kapha dosha* which ultimately vitiates the *rakta*. Oil especially *pitta prakopaka*¹⁰ which vitiates the *rakta dhatu* and produces several skin diseases.(Table no.16)
- *Ushna & tikshna ahara* In present survey study maximum 71.5% patients consumed spicy food (*ushna & tikshna ahara*). Due to intake of *ushna & tikshna ahara*, *pitta dosha* gets aggravated and vitiates the *rakta dhatu* and produces several skin diseases.(Table no.17)
- *Drava ahara* In present survey study maximum 85% patients consumed milk, 68% patients consumed sugarcane juice and butter milk, 64% patients consumed lemon juice, 34.5% patients were involved in were associated with intake of favourite fruit juice, 23.5% patients were associated with intake of aerated drinks, 47.5% consumed liquids in empty stomach and 53.5% patients consumed liquid immediately after food, 18.5% patients were drinking water in excessive amount. These type of *ahara* pattern vitiates the *pittadosha*, *kaphadosha* and *raktadhatu*¹¹ which leads to produce many type of skin disease.(Table no.18)

- *Pradushta bahu ushna tikshna madya* In present survey study only 9% patients were habitual of *pradustha bahu ushna tikshna madya* which is *pitta prakopaka* and ultimately *rakta prakopana* occurs.(Table no.19)
- **Dominant** *Rasa* in daily food intake- In present survey study maximum patients i.e. 47.5% were taking *atiamla rasa* followed by 43% patients taking *atilavana rasa*, 42.5% patient's *atikatu* as dominant rasa in their daily food. *Atiamla* and *atikatu rasa* are responsible for aggravation of *pitta* and *vata*. *Atilavana rasa* vitiates the *pitta*, *kapha* and direct effect occurs on *raktadhatu*.(Table no.20)
- Viruddha ahara In present survey study maximum number of patients were taking sanskara viruddha and samyoga viruddha ahara. The most common food item of Rajasthan like dahikadhi is a type of samskara viruddha ahara. Milkshakes, raita with fruits, khichdi with milk, milk with sweets, milk with citrus fruits, green leafy vegetables with milk products, egg with milk, reddish and garlic with milk etc. are the item combinations which are samyoga viruddha. In Rajasthan, these food items are most predominantly taken by people which gradually results in tridosha prakopa in passage of time and acts as garavisha and directly vitiates the raktadhatu.(Table no.21)
- *Mithya ahara* In present survey study maximum 42.5% of patients were taking *upaklinna & puti bhakshana ahara*, 37% patients were habitual of *adhyashana* frequently, 25% patients were habitual of *atyaśana* and 31.5% patients were habitual of *ajirnashana*, frequently. Due to these types of *ahara*, *vata* and *kapha dosha* are aggravated and vitiate the *raktadhatu*.(Table no.22)
- Some other Ahara Nidana- In present survey study on the analysis of different varieties of daily diet of the patients, it was observed that 48.0% patients were involved in intake of shamidhanya varga. It is responsible for vitiation of kapha and pitta, aggravated pitta vitiates raktadhatu. 14.5% patients were habitual of intake of taila varga which is one of the responsible factor of vitiation of pitta. 21.5% patients were habitual of intake of mansa varga. This type of nidana does not directly vitiates the rakta dhatu but aggravates the kapha and pitta dosha. These dosha are responsible factor for vitiation of rakta. 73.5% patients habitual of intake of intake of harita varga which is tridosha vardhaka. 80% patients were habitual of intake of dadhi varga which is rakta dushanakari as well as abhishyandi and aggravates tridosha. 9% patients habitual of intake of madya varga which is pitta prakopaka. 62.5% patients habitual of intake of kritanna varga which is not mentioned in classical text but these are responsible factor of vitiation of dosha and dhatu. (Table no.23)

Viharaja nidana:- (Table no.24)

- **Bhajatam chatapa anala-** In present survey study total 42.5% patients were habitual of *bhajatam chatapa anala*. In the study place, sun light exposure is most common which is very *tikshana* and directly aggravates the *raktadhatu* and *pitta*.
- *Chardi vegadharana* In present survey study total 21.5% patients were habitual to *chardi vegadharana* which is responsible for *raktadusti*¹².
- **Bhukta divaprasvapata-** In present survey study 39.5% of patients were habitual to *divaswapna* after food intake. It is *kapha-pittakara*, *srotorodhaka*, *agnidushaka* resulting in *amautpatti* and *ajirna*.
- *Shrama abhighata* In present survey study 11.5% of patients were habitual to *shrama abhighata* which causes *tridosha prakopa* and *sweda vaha srotodusti* resulting in *raktapradoshaja vikara*.
- *Santapa* In present survey study only 4.0% of patients were habitual to *santapa* which causes *tridosha prakopa* in *raktapradoshaja vikara*.
- *Kale anavasechana* In present survey study only 1% of patients were habitual to *kale anavasechana* which causes *tridosha prakopa* in *raktapradoshaja vikara*.

Manasika nidana:-(Table no.25)

• *Krodha* - In present survey study maximum 51% of patients were habitual to *krodha* which is an important etiological factor for the diseases of *raktapradoshaja vikara*.

Svabhavaja nidana:-(Table no.26)

Sharat kala - In present survey study 18.5% of patients were found to aggravated symptoms in *sharat kala*, it is *svabhavika prakopa kala* of *rakta- dusti* which aggravates the *rakta pradoshaja vikara*.

CONCLUSION-

"Clean skin is imperative to maintaining physical and psychological balance and protecting the public's health. The increase in daily stress and work pressure everybody has exposed to the decrease at their face as well as the increase in demands of beauty. With the growth of job pressure and competence we are entering in anxious mind supplies. This increase pressure has contributed to massive decreases in routine activities which reflect on our face. Hence, maximum *nidana* are exposed here in this study these types of *nidana* are used repeatedly and contribute as *raktapradoshaja vikara* are found here frequently. Here in this study, it was an attempt for quantitative analysis of classical *nidana* in relationship with the pathogenesis of the disease. Analysed data of all these extreme exposure of *nidana* may provide a significant role for diagnosis, prognosis as well as prevention of the disease of *raktapradoshaja vikara*.

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⁸ Sushruta Samhita of Maharishi Sushruta, Sutra Sthan Vranaprshna Adhyaaya-21, Sutra-23, 25 edited with Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Reprint edition 2012 Chaukhambha Sanskrit Sansthan, Varanasi 221001.Pp-118,119.

⁹ Kaashiraaj Dhanvantari "Susruta Samhita" sutra Sthan Vranaprshna Adhyaaya-21, Sutra-21, revised by Dalahan Acharya with "Nibandha Sangrha" commentary, Vd. Yadavaji Trikamji Acharya, Reprint edition-2018, Chaukhambha Surabharati Publications, Varanasi- 221001,(India), reprint.Pp-103.

Agnivesha, "Charaka Samhita" Sutra Sthana Annapaanvidhi Adhyaaya-27, sutra-286, revised by Charaka and Dridhabala with"Ayurveda Deepika" commentary, by Chakrapanidata, edited by Vd. Yadavaji Trikamji Acharya, Reprint edition-2017, Chaukhambha Surabharati Publications, Varanasi- 221001,(India), Pp-169.

¹¹ Sushruta Samhita of Maharishi Sushruta, Sutra Sthan Vranaprshna Adhyaaya-21, Sutra-23,25 edited with Ayurveda Tattva Sandipika by Kaviraja Ambikadutta Shastri, Reprint edition 2012 Chaukhambha Sanskrit Sansthan, Varanasi 221001.Pp-118,119.

"A Nidanatmaka (Epidemiological) Study Of Raktadustikara Nidana In Patients Suffering From Vyanga With Special Reference To Melasma"

Section A-Research paper

Agnivesha, "Charaka Samhita" Sutra Sthana Vidhishonitiya Adhyaaya-24 sutra-9, revised by Charaka and Dridhabala with"Ayurveda Deepika" commentary, by Chakrapanidata, edited by Vd. Yadavaji Trikamji Acharya, Reprint edition-2017, Chaukhambha Surabharati Publications, Varanasi- 221001,(India), Pp-124.