International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 9 Issue 2, Mar-Apr 2025 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

Case Control Study to Assess Role of *Samyoga Viruddha Ahara in Kitibha Kushta*

Dr. Shruti[1], Dr. Nandesh Mohan P[2], Dr. Tapas Bratha Tripathy[3], Dr. Saranya K[4]

[1]Post Graduate Scholar, Department of Roga Nidana Avum Vikriti Vigyana,
[2]Associate Professor, Department of Roga Nidana Avum Vikriti Vigyana,
[3]Professor, Department of PG Studies in Kayachikitsa,
[4]Assistant Professor, Department of Roga Nidana Avum Vikriti Vigyana,
[1,2,3,4]Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka, India

ABSTRACT

Background: Skin diseases affect nearly 900 million people worldwide, with *Kitibha Kushta,* classified under *Kshudra Kushta*, resembling psoriasis in modern medicine. Psoriasis, an immune-mediated disorder, affects 3.59 million people in India and 125 million globally, with increasing prevalence. It significantly impacts physical, emotional, and socio-economic well-being. *Ahara* (diet) is a key factor in Ayurveda, and *Viruddha Ahara* (incompatible diet) is considered a major cause of diseases, including *Kushta*. Among its types, Samyoga Viruddha Ahara, a combination of incompatible foods, rapidly provokes *Doshas* and requires attention due to its potential health risks. **Objectives:** To Develop and validate a questionnaire on Samyoga Viruddha Ahara in *Kitibha Kushta* and To Assess its role in the manifestation of *Kitibha Kushta*. **Methodology:** A case-control study was conducted at SDM College of Ayurveda, Hassan, with 60 *Kitibha Kushta* patients (cases) and 60 healthy individuals (controls). Data was collected using a validated questionnaire, assessing dietary history and the role of *Samyoga Viruddha Ahara*. **Result:** *Samyoga Viruddha Ahara* were found statistically significant and were considered to have risk of association with *Kitibha Kushta.* **Conclusion:** The study concludes that *Samyoga Viruddha has* a significant association with *Kitibha Kushta*.

KEYWORDS: *Ahara, Food, Kushta, Kitibha, Psoriasis, Samyoga Viruddha, Viruddha*

How to cite this paper: Dr. Shruti | Dr. Nandesh Mohan P | Dr. Tapas Bratha Tripathy | Dr. Saranya K "Case Control Study to Assess Role of *Samyoga Viruddha Ahara in Kitibha Kushta*" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-9 | Issue-2, April 2025, pp.398-404, URL: www.ijtsrd.com/papers/ijtsrd76334.pdf

IJTSRD76334

INTRODUCTION

Kitibha Kushta is one among the *Kshudra Kushta*, presenting with the *Shyavavarna*, *Kinakara Sparsha, Parushyata*[1], *Ruksha Pidaka* and *Ati-Ugra Kandu*[2]. The disease which has spreading nature and which leads to disfiguration (*Kushnati*) of skin is known as *Kushta*. There is involvement of *Tridosha* in all *Kushta* but the predominance of *dosha* makes the types & manifestation of *Kushta* different.

Acharya Charaka has described the involvement of *Vata* and *Kapha dosha* in *Kitibha Kushta*[1] and Acharya Sushruta mentioned *Pitta dosha*[2] involvement in it. It is one among the *Ashtamahagada*[3] As progresses it expresses the *Lakshanas* of *Tridosha*[4] leads to *Upadrava* stage and it is of *Kitibha Kushta.* Psoriasis is one of the most common skin disorders. It is considered as *Kashtatara Roga*[5]. It is comparable to Psoriasis due to its similarities in the signs and symptoms a papulosquamous disorder of the skin characterized by sharply defined erythemato-squamous lesions. It is chronic and is well known for its course of remission and exacerbation[6].

Psoriasis is a chronic inflammatory, noncommunicable, painful disfiguring, disabling, hyperproliferative skin disease with a strong genetic predisposition[7] and autoimmune pathogenic traits[8]. Psoriasis typically affects the skin, its complication can lead to psoriatic arthritis, and other systemic

diseases. Thus, it has been postulated that psoriasis is a systemic entity rather than a solely dermatological disease[9]. The prevalence of psoriasis range between 0.09%[10] and 11.4%[11] in different populations around the world, making it a serious global problem. According to global psoriasis atlas (GPA)an estimated 3.59 million people in India and 100million are affected Worldwide, the incidence of new cases increased from 92 per 100,000 in 1990 to 99 in 2017(29), twice more common in males compared to females and most of the patients are in their third or fourth decade at the time of presentation[12]. Psoriasis has been shown to affect quality of life to an extent similar to the effects of other chronic diseases[13]. With the increasing prevalence and its association with various co-morbidities, there is a need for study various aspects and impact on quality of life.

Viruddha Ahara is defined by *Charaka* in *Atreya Bhadrakapiya Adhyaya* clearly says that certain diet and its combinations which interrupts the process and formation of *Dhatus* are called as *Viruddha Ahara*[14]. Eighteen types of *Viruddha Aharas* are described and *Samyoga Viruddha Ahara* is one among them. *Samyoga Viruddha* is a term used to denote unwholesome effects of two or more combined foods. The word Samyoga means a physical, metaphysical relation between two or more things[15]. According to *Acharya Sushruta, Samyoga Viruddha Ahara* affects in shorter duration compared to other *Viruddha Aharas*[16]. In consideration to above point, the present study was planned to assess the role of *Samyoga Viruddha* Ahara in *Kitibha Kushta* contributing to a deeper understanding of the dietary factors that influence skin health.

OBJECTIVES OF THE STUDY:

1. To develop and validate questionnaire on *Samyoga Viruddha Ahara* in *Kitibha Kushta.*
2. To assess the role of *Samyoga Viruddha Ahara* in the manifestation of *Kitibha Kushta.*

MATERIALS & METHODS:

VALIDATION OF QUESTIONNAIRE: Validation of questionnaire for reliability and consistency carried out with following steps:

1. **Pilot study for Collecting Extratextual References:** Classical examples of *Samyoga Viruddha* were collected in that commonly practicing *Samyoga Viruddha Ahara* were enlisted and currently practicing extra textual examples were collected through the pilot study in 30 *Kitibha Kushta* subjects of SDMCAH.
2. **Preparation of questionnaire**: After the collection of extratextual examples on *Samyoga Viruddha Ahara* along with already framed classical examlples the questionnaire was framed containing 27 items. Consiting of 5 domains i.e., Milk included 12 items, the domain Honey consisting 1 item, the domain curd consisting 1 item, the domain butter consisting 1 item, Extratextual domain consisting of 12 items. The scaling for the questionnaire attributed for frequency 5 point and for duration 3 points Likert scale.
3. **Method of validation-Expert validation**: Panel of experts were identified and were given the informed validation form defining the questionnaire. Majority of the inputs were about defining the scale, to reframe the sentence in the question and changes were done in accordance with the requirement. After incorporating the expert opinion less than 1 year duration was added.
4. **Pilot study**: The expert validated questionnaire was assessed in 30 *Kitibha Kushta* subjects from Sri Dharmasthala Manjunatheshwara College of Ayurveda and hospital, Hassan, for the pilot study. The data obtained was tested for reliability by Cronbach's alpha, by using appropriate statistical software.
5. **Reliability test**: Cronbach's alpha is a reliability test assesses the internal consistency of items. Value of alpha greater than 0.7 is considered acceptable. In this study the questionnaire tested for the reliability test showed above 0.829 for all the 27 items, this value indicates a good internal consistency. Hence no questions were deleted.
6. **Final reframing the questionnaire**: Preliminary questionnaire contained 27 items under 5 domains i.e., Milk included 12 items, the domain Honey consisting 1 item, the domain curd consisting 1 item, the domain butter consisting 1 item, Extratextual domain consisting of 12 items. After expert validation the less than 1 year duration was included and finalized for the study. After the pilot study all the questions were accepted based on Cronbach's alpha test analysis and the test showed good internal consistency so all the questions were included.

SOURCE OF DATA:

Literary source: Literary data will be collected from classical text of *Ayurveda,* textbook of modern medical science, journals, studies conducted on related works and internet source

Sample source: Minimum subjects of 50 case and 50 control fulfilling diagnostic and inclusion criteria will be included from OPD and IPD of Sri Dharmasthala Manjunatheswara College of *Ayurveda* and hospital, Hassan.

DIAGNOSTIC CRITERIA: Subjects presenting symptoms with

- Shyavavarna
- Kinakhara Sparsha
- Parushya
- Auspitz sign

Any of one or two following symptoms

- Sharply demarcated papule with clear-cut borders
- Non coherent silvery scales
- Glossy erythema or
- Homogeneous erythema

INCLUSION CRITERIA:

Case:

- Subjects between age group 20 -60yrs irrespective of gender
- Subjects diagnosed as *Kitibha Kushta* based on diagnostic criteria
- Subjects willing to participate in the study and ready to sign informed consent form

Control: Healthy individuals (according to WHO) matched with sex and age of case group

EXCLUSION CRITERIA:

- Drug induced skin disorders
- Patients with communicable infective disease
- Lactating mothers and pregnant women

ASSESSMENT CRITERIA:

Data was collected using validated *Samyoga Viruddha* questionnaire containing 5 domains The collected data using this questionnaire for case group and control group were subjected to statistical analysis to determine the role of *Samyoga Viruddha* in of *Kitibha Kushta*.

STATISTICAL METHODS:

120 studied samples were taken for statistical analysis. The validated *Samyoga Viruddha Ahara* questionnaire on *Kitibha Kushta* in both case (subjects of *Kitibha Kushta*) and control (healthy volunteers) were analysed using chi square test and observed for significance level. Chi square test if $P<0.01$ is considered as statistically highly significant, $P<0.05$-0.01 is considered as statistically significant and $P>0.05$ is considered as not significant, each domain of the questionnaire was graded on a scale of 1 to 5, with 1 being the lowest and 5 being the highest. Grades 1 to 3 were considered indicative of lower frequency of *Samyoga Viruddha Ahara* consumption and labelled as 'unexposed' for assessing the odds ratio, while grades 4 and 5 were considered indicative of higher frequency consumption and labelled as 'exposed' to calculate the risk factor. If the odds ratio is more than 1 with significant P value then it is considered as high risk for the condition.

OBSERVATION:

In the present study, 63 subjects presenting with the complaints of *Kitibha Kushta* were screened, among them 60 subjects fulfilling the diagnostic and inclusion criteria were registered. 3 were excluded as they are not within the age limit. Therefore, study was conducted on 60 subjects with specially designed case proforma comprising of history recording and clinical examination of the subjects along with experts validated questionnaire on *Kitibha Kushta*. Observations made on 60 subjects of *Kitibha Kushta.*

In present study maximum 17 subjects each in age group of 41-50 and 51-60 years. In distribution of Gender majority were Male (n=42), In distribution of socio-economic status maximum subjects (n=29) belonged to middle class. In distribution of Locality most of *subjects* (n=37) were belonged to urban area and in distribution of Desha most of *subjects* (n=59) were belonged to *Anupa Desha*

RESULTS:

Table No.1: Showing the comparison of *Samyoga Viruddha Ahara* consumption frequency association between the case group and the control group

Sl. No	Food Item	Chi-Square Value	P-Value	Level of Significance Based on Chi Square
1	Banana with milk	7.337	0.007	Sig
2	Mango with milk	1.337	0.248	NS
3	Orange with milk	7.643	0.006	Sig
4	Strawberry with milk	1.451	0.228	NS
5	Grapes with milk	2.386	0.122	NS
6	pomegranate with milk	0.471	0.493	NS
7	Milk with Curd	0.481	0.488	NS
8	Milk with Salt	0.807	0.369	NS
9	Milk with Rice (Cooked with Salt)	0.645	0.422	NS
10	Ashguard with milk	0.613	0.434	NS
11	Fish with Milk	2.095	0.148	NS

12	Kichadi with Milk	0.948	0.330	NS
13	Honey with Hot water	9.348	0.002	Sig
14	Curd with Chicken	9.850	0.002	Sig
15	Butter with Tuber Vegetables	2.787	0.095	NS
16	Hot Brownie with Icecream	0.618	0.432	NS
17	Fruit Salad	7.152	0.007	Sig
18	Fruit salad with icecream	7.605	0.006	Sig
19	Lassi	1.033	0.310	NS
20	Raita	8.470	0.004	Sig
21	Hot rice with Curd	0.713	0.398	NS
22	Chewing Areca nut + Betal leaf + Tobacco + lime	9.366	0.002	Sig
23	Dahi Vada	7.597	0.006	Sig
24	Milk items with cold drinks	1.261	0.261	NS
25	Berries and resins with milk	2.135	0.144	NS
26	Honey + hot water + lemon juice	10.994	0.400	NS
27	Tomato sauce + Cheese + Mayonnaise with chicken	0.644	0.422	NS

Table above shows that, there is significant association observed with frequency of Banana with milk, Orange with milk, Honey with Hot water, Curd with Chicken, Fruit Salad, Fruit salad with ice-cream, Raita, Chewing Areca nut + Betal leaf + Tobacco + lime, Dahi Vada.

Table No. 2: Showing the comparison of *Samyoga Viruddha Ahara* consumption duration association between the case group and the control group

Sl. No	Food Item (Duration)	Chi-Square Value	P-Value	Level of Significance Based on Chi Square
1	Banana with milk	7.771	0.005	Sig
2	Mango with milk	0.508	0.476	NS
3	Orange with milk	7.277	0.007	Sig
4	Strawberry with milk	1.147	0.284	NS
5	Grapes with milk	1.478	0.224	NS
6	pomegranate with milk	0.630	0.427	NS
7	Milk with Curd	0.501	0.479	NS
8	Milk with Salt	0.739	0.390	NS
9	Milk with Rice (Cooked with Salt)	0.465	0.496	NS
10	Ashguard with milk	0.929	0.335	NS
11	Fish with Milk	1.778	0.182	NS
12	Kichadi with Milk	1.063	0.302	NS
13	Honey with Hot water	8.680	0.003	Sig
14	Curd with Chicken	7.278	0.007	Sig
15	Butter with Tuber Vegetables	3.824	0.051	NS
16	Hot Brownie with Icecream	0.995	0.318	NS
17	Fruit Salad	7.916	0.005	Sig
18	Fruit salad with icecream	6.990	0.008	Sig
19	Lassi	2.783	0.095	NS
20	Raita	7.517	0.006	Sig
21	Hot rice with Curd	0.955	0.328	NS
22	Chewing Areca nut + Betal leaf + Tobacco + lime	9.458	0.002	Sig
23	Dahi Vada	8.019	0.005	Sig
24	Milk items with cold drinks	1.539	0.215	NS
25	Berries and resins with milk	2.182	0.140	NS
26	Honey + hot water + lemon juice	6.796	0.125	NS
27	Tomato sauce + Cheese + Mayonnaise with chicken	0.730	0.393	NS

Table above shows that, there is significant association observed with duration of of Banana with milk, Orange with milk, Honey with Hot water, Curd with Chicken, Fruit Salad, Fruit salad with ice-cream, Raita, Chewing Areca nut + Betal leaf + Tobacco + lime, Dahi Vada.

Table No. 3: Showing the risk estimation of *Samyoga Viruddha Ahara* consumption between case and control group

No	Food Item	Observed Values				Odds Ratio	Level of Significance Based on Odds Ratio
		Case		Control			
		Yes	No	Yes	No		
1	Banana with milk	53	7	20	40	2.068	Sig
2	Mango with milk	18	42	23	37	0.619	NS
3	Orange with milk	38	22	15	45	2.022	Sig
4	Strawberry with milk	11	49	9	51	0.266	NS
5	Grapes with milk	2	58	9	51	0.491	NS
6	pomegranate with milk	21	39	8	52	0.266	NS
7	Milk with Curd	3	57	3	57	0.317	NS
8	Milk with Salt	16	44	1	59	0.376	NS
9	Milk with Rice (Cooked with Salt)	6	54	21	39	0.699	NS
10	Ash guard with milk	26	34	35	25	0.290	NS
11	Fish with Milk	2	58	0	60	0.474	NS
12	Kichadi with Milk	0	60	7	53	0.574	NS
13	Honey with Hot water	45	15	6	54	1.993	Sig
14	Curd with Chicken	48	12	38	22	1.248	Sig
15	Butter with Tuber Vegetables	25	35	15	45	0.579	NS
16	Hot Brownie with Icecream	32	28	18	42	0.608	NS
17	Fruit Salad	33	27	10	50	2.101	Sig
18	Fruit salad with icecream	44	16	7	53	1.814	Sig
19	Lassi	24	36	17	43	0.430	NS
20	Raita	53	7	14	46	1.524	Sig
21	Hot rice with Curd	2	58	10	50	0.314	NS
22	Chewing Areca nut + Betal leaf + Tobacco + lime	34	26	2	58	2.111	Sig
23	Dahi Vada	47	13	16	44	1.248	Sig
24	Milk items with cold drinks	9	51	27	33	0.478	NS
25	Berries and resins with milk	23	37	7	53	0.243	NS
26	Honey + hot water + lemon juice	26	34	4	56	0.608	NS
27	Tomato sauce + Cheese + Mayonnaise with chicken	28	32	7	53	0.490	NS

Table above shows that, there is significant association observed with frequency of Banana with milk, Orange with milk, Honey with Hot water, Curd with Chicken, Fruit Salad, Fruit salad with ice-cream, Raita, Chewing Areca nut + Betal leaf + Tobacco + lime, Dahi Vada.

The analysis of practice of Samyoga Viruddha Ahara present and absent in both the groups were analysed by considering the scale 1 and 2 as absent (no) and 3 to 5 as present (yes). The following results were derived with estimated risk by odds ratio.

In the present study of 60 case and 60 control, among 60 cases banana with milk combination was consuming among 53 subjects and 7 were not consuming,18 subjects consuming mango with milk and 42 were not consuming,38 subjects consuming orange with milk and 22 not consuming,11 were consuming strawberry with milk and 49 were not consuming,2 were consuming grapes with milk and 58 were not consuming,21 were consuming pomegranate with milk and 39 not consuming, 3 were consuming mil with curd and 57 not consuming, 16 were consuming milk with salt and 44 not consuming, 6 were consuming milk with rice and 54 not consuming, 26 were consuming ashguard with milk and 34 not consuming, 2 were consuming fish with milk and 58 not consuming, 0 consuming kichadi with milk and 60 not consuming, 45 were consuming honey with hot water and 15 not consuming, 48 were consuming curd with chicken and 12 not consuming, 25 were consuming butter with tuber vegetables and

35 not consuming, 32 were consuming hot brownie with ice cream and 28 not consuming, 33 were consuming fruit salad and 27 not consuming, 44 were consuming fruit salad with ice cream and 28 not consuming, 24 were consuming lassi and 36 not consuming, 53 were consuming raita and 7 not consuming, 2 were consuming hot rice with curd and 58 not consuming, 34 were consuming chewing areca nut+betal leaf+tobacco+lime and 26 not consuming, 47 were consuming dahivada and 13 not consuming, 9 were consuming milk items with cold drinks and 51 not consuming, 23 were consuming berries and resins with milk and 37 not consuming, 26 were consuming honey+hot water+lemon juice and 34 not consuming, 28 were consuming Tomato sauce + Cheese + Mayonnaise with chicken and 32 not consuming.

Among 60 controls banana with milk combination was consuming among 20 subjects and 40 were not consuming,23 subjects consuming mango with milk and 37 were not consuming,15 subjects consuming orange with milk and 45 not consuming, 9 were consuming strawberry with milk and 51 were not consuming, 9 were consuming grapes with milk and 58 were not consuming, 8 were consuming pomegranate with milk and 52 not consuming, 3 were consuming milk with curd and 57 not consuming, 1 were consuming milk with salt and 59 not consuming, 21 were consuming milk with rice and 39 not consuming, 35 were consuming ashguard with milk and 25 not consuming, 0 consuming fish with milk and 60 not consuming, 7 consuming kichadi with milk and 53 not consuming, 6 were consuming honey with hot water and 54 not consuming, 38 were consuming curd with chicken and 22 not consuming, 15 were consuming butter with tuber vegetables and 45 not consuming, 18 were consuming hot brownie with ice cream and 42 not consuming, 10 were consuming fruit salad and 50 not consuming, 7 were consuming fruit salad with ice cream and 53 not consuming, 17 were consuming lassi and 43 not consuming, 14 were consuming raita and 46 not consuming, 2 were consuming hot rice with curd and 58 not consuming, 34 were consuming chewing areca nut+betal leaf+tobacco+lime and 26 not consuming, 47 were consuming dahivada and 13 not consuming, 9 were consuming milk items with cold drinks and 51 not consuming, 23 were consuming berries and resins with milk and 37 not consuming, 26 were consuming honey+hot water+lemon juice and 34 not consuming, 28 were consuming Tomato sauce + Cheese + Mayonnaise with chicken and 32 not consuming, Table above shows that, there is significant association observed with frequency of Banana with milk, Orange with milk, Honey with Hot water, Curd with Chicken, Fruit Salad, Fruit salad with ice-cream, Raita, Chewing Areca nut + Betal leaf + Tobacco + lime, Dahi Vada.

CONCLUSION:

- Statistical analysis revealed significant association observed with frequency and duration.
- Therefore, the study concludes that *Samyoga Viruddha Ahara has* a significant association with *Kitibha Kushta*.

REFERENCES:

[1] Agnivesha, Charaka. Chikitsa Sthana, Kustha Chikitsa, (chapter 7) verse 13-14, In: Shukla V, Tripathi R editors. Charaka Samhita, 1st edition, Delhi: Chaukhamba Sanskrit Pratishthan, 2010; Vol.I. p.182-183.

[2] Sushruta. Nidana sthana, Kushta nidana (chapter 5) verse 14, In: Thakaral KK Translator. Sushruta samhita, Reprint edition, Varanasi: Chaukhambha orientalia, 2016; Part 1. p.752.

[3] Sharma PV. Sushruta Samhita with Nibandhasangraha commentary of Dalhanacharya. Chaukambha Orientalia, Varanasi, 2002 (Reprint), Sutra Sthana33/5, p144.

[4] Agnivesha, Charaka. Chikitsa Sthana, Kustha Chikitsa, (chapter 7) verse 37, In: Shukla V, Tripathi R, editors. Charaka Samhita, 1st edition, Delhi: Chaukhamba Sanskrit Pratishthan, 2010; Vol.I. p.186.

[5] Sushruta, Dalhana, Shrigayads. Nidana sthana, kushta nidana, (chapter 5) verse 31, In:Thakaral KK, Translator. Sushruta samhita, 2nd edition, Varanasi: Chaukhamba orientalia, 2016; part-1, p.760.

[6] Rendon A, Schäkel K. Psoriasis Pathogenesis and Treatment. Int J Mol Sci. 2019; 20(6): 1475. Published 2019 Mar 23. doi:10.3390/ijms20061475.

[7] Harden L, Kreuger G, Bowcock AM. Immunogenetics of psoriasis: a comprehensive review. J Autoimmun. 2015; 64:66-73. Christophers E. Psoriasis—Epidemiology and clinical spectrum. Clin. Exp. Dermatol. 2001; 26: 314–320. doi:10.1046/j.1365-2230.2001.00832.x.

[8] Institute for Health Metrics and Evaluation (IHME). Global burden of Disease Study 2010: Results by Cause 1990-2010. Seattle: IHME; 2012.

[9] Sommer D.M., Jenisch S., Suchan M., Christophers E., Weichenthal M. Increased

prevalence of the metabolic syndrome in patients with moderate to severe psoriasis. Arch. Dermatol. Res. 2006; 298:321–328. doi: 10.1007/s00403-006-0703-z.

[10] Gibbs S. Skin disease and socioeconomic conditions in rural Africa: Tanzania. Int J Dermatol. 1996; 35(9):633-9.

[11] Danielsen K, Oslen AO, Wilsgaard T, Furberg AS. Is the prevalence of psoriasis increasing? A 30-year follow-up of a population –based cohort. Br J Dermatol. 2013; 168:1303-10.

[12] Dogra S, Yadav S. Psoriasis in India: Prevalence and pattern. Indian J Dermatol Venereol Leprol 2010; 76:595-601.

[13] Bhosle MJ, Kulkarni A, Feldman SR, Balkrishnan R. Quality of life in patients with psoriasis. Health Qual Life Outcomes. 2006; 4:35. Published 2006 Jun 6. doi:10.1186/1477-7525-4-35.

[14] Agnivesha, charaka, Sutra sthana, Atreya bhadrakapeeya adhyaya (chapter 26) verse81, In: Acharya YT, Charaka samhita 5th edition. Varanasi: Chaukhamba samsthana; 2001: 1st part.

[15] Epitools - Home [Internet]. epitools.ausvet.com.au. [cited 2024 Oct 23]. Available from: http://epitools.ausvet.com.au.

[16] Sushruta. Sutra sthana, Hita ahitiya adhyaya (chapter 20) verse 13, In: Thakaral KK Translator. Sushruta samhita, Reprint edition, Varanasi: Chaukhambha orientalia, 2016; Part 1. p.234.