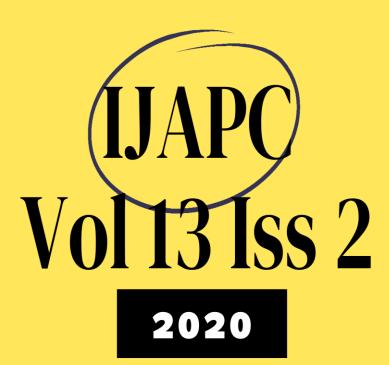


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CASE STUDY

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Effect of *Tuvaraka Rasayana & Virechana Karma* in *Kitibha Kusta* w.s.r to Lichen planus - A Case Report

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ABSTRACT

Background: The innumerable manifestations of skin diseases can be brought under the term *Kusta*. *Kitibha Kusta* is one among the *Kshudra Kusta* with symptoms like *Krishna shyava pidaka* (blackish brown skin lesions) with *Kinaghara sparsha* (rough to touch) associated with *Kandu* (itching) and *Parushata* (hard to touch) which *mimics* the disease Lichen planus which is an inflammatory condition of the skin and mucous membrane. It is triggered by the immune response of the body and it is presented itself with maculopapular primary skin lesions and secondary scaly lesions.

Case Presentation: A female patient aged 16 years presented with the complaints of skin rashes in the body which are blackish red in colour, rough to touch associated with itching, burning sensation, minimal scaling and reduced appetite since 4 months.

Management & Outcome: For the chronic lingering diseases like *Kusta*, the *Vyadhihara* rasayana (disease specific rejuvenation) are advised. Tuvaraka rasayana (Hydnocarpus laurifolia) was advised to the patient after Virechana Karma (therapeutic purgation) starting with the dose of 5ml. After 3 months of the treatment there was significant reduction in the signs and symptoms of the disease with a 60% improvement in the condition.

Discussion: *Kusta* which involves the *Bahudosha avastha* (excessive accumulation of morbid *dosha*) can be best treated with *Shodhana* (therapeutic elimination of the morbid *dosha*) therapy. *Virechana karma* is superior in managing *Raktapradoshaja vikara* (diseases due to morbid *rakta*) like *Kusta*. *Rasayana chikitsa* is paramount in controlling the disease process of chronic diseases like *Kitibha Kusta* as proved by the results.

KEYWORDS

Kitibha Kusta; Lichen planus; Virechana; Tuvaraka rasayana



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INTRODUCTION

A healthy and intact skin gives protection from various physical and chemical trauma and infective pathogens. The extensive structural and functional disorders of skin can destroy the self-esteem and peace of mind of any individual.

The innumerable manifestations of skin diseases can be brought under the term Kusta. Though Kusta is considered as tridoshaja vyadhi, the diseases exhibit different symptoms based on the involvement of predominant dosha and dushya. The diagnosis of the Kusta can be done by identifying the underlining dosha predominance and the dushya involved with their progressive involvement. The presence of the specific *Purvarupa* lakshana, involvement of the deeper dhatu and severity in the illness differentiates Mahakusta from Kshudra kusta¹. Kitibha kusta is one among the Kshudra kusta having symptoms like Shyava krishna varna pidaka, Kinaghara sparsha, Parushata of the tvak, kandu and occasionally *srava*².

Skin diseases predominantly have a chronic course and a tendency for exacerbations and recurrence. *Kitibha Kusta* is such an illness characterized by skin eruptions with itching and minimal scaling which simulates with the clinical presentation of

Lichen Planus. It is a papulosquamaous disease characterized with the pruritic, flat topped, polygonal papules which are violaceous in colour³. Occasionally the involvement of oral mucosa seen as network of grey lines. Topical drugs, antibiotics, antihistamines, antifungal and steroids etc. form the crux of treating any skin disease.

The treatment of any *Kusta* mainly focus on Abhyantara shodhana. *Abhyantara* shamana, Vyadhihara rasayana, Bahya shamana and Daivavyapashraya chikitsa. A lot of research studies have already done Enough clinical studies have been done in the effective management of various skin disorders with shodhana and bahya shamana. Less emphasis is laid on rasayana treatment. Chronic lingering diseases like Kusta are best managed by rasayana. The present case report shows the successful management of Kitibha kusta w.s.r Lichen planus through Virechana karma, Shamana yoga and Vyadhihara rasayana like Tuvaraka and Yastimadhu with no adverse effects.

CASE PRESENATION

A female patient aged 16 years was consulted in the Out Patient Department of Sri Dharmasthala Manjunatheshwara Ayurveda hospital, Udupi with the



complaints of skin rashes in the body which are blackish red in colour, rough to touch, associated with itching, burning sensation, minimal scaling and reduced appetite since 4 months. The lesions initially started over the right thigh region as a red spot associated with itching which the patient ignored, but within a span of few months the lesions started spreading all over the body from thigh to whole right lower limb, back and groin area then to the right upper limb, chest, abdomen, left upper limb and left lower limb. Minimal lesions started around the bilateral ear and the over the neck regions (Figure 1-4).



Figure 1-4 Lesions before treatment

There was persistent itching in the body and minimal scaling on scratching leaving behind blood spots. The symptoms were not associated with discharge, fever, swelling and joint pain. The symptoms didn't alleviate or aggravate in accordance with the food intake and season. There was no significant past history of any systemic

illness or drug allergy. The patient was not under any medication and there was no relevant family history of skin ailments. The patient was admitted in the Inpatient department of the hospital after through systemic examination.

Clinical findings

The general examination findings were within normal limits with BP-110/70mmHg, Pulse rate-72/min, Temp-98.6 ⁰ F. Systemic examination of the cardiovascular, respiratory, nervous system and gastrointestinal system were within normal limits. The detailed examination of the skin assessing the primary and secondary lesions were done. The details of which are mentioned below (Table 1).

Table 1 Skin examination

Moisture	Normal texture	
Temperature	Generalized warmth	
Texture	Rough	
Photosensitivity	Absent	
Primary skin lesion	Small discrete Polygonal	
	papules & Plaques	
Secondary skin	Scales and crust	
lesion		
Colour	Blackish & Erythematous	
Number	Multiple	
Size	Varied(1mm to 0.5cm)	
Shape	Varied (Round, patchy)	
Site &Distribution	Flexor & Extensor	
	surface of the both	
	Upper limb and Lower	
	limb, Chest, Back,	
	Abdomen, Flanks, Neck,	
	Dorsum of hand & toe,	
	Groin area, Buccal	
	mucosa	
Behaviour of lesion	Initially started as small	
	red spot later enlarged in	
	size with spreading	
Discharge	Absent	
Surrounding areas	Blackish discoloration	



Scaling	Powdery scales	
Auspitz sign	Bloody spots on	
	scratching	
Candle grease sign	Negative	
Mucous membrane	Present	
involvement		
Wickham's striae	Present	
Associated	Itching, Mild burning	
symptoms	sensation	
Koebners	Absent	
phenomenon		

Diagnostic Focus & Assessment

Absence of typical purvarupa lakshana and involvement of tvak, rakta and mamsa dhatu in the patient point towards the diagnosis of kshudra kusta. The lakshana like kinaghara sparsha, shyava krishna varna pidaka and parushata are caused by the vitiation of the vata dosha. While the ugra kandu, with alpa srava are caused by the vitiation of the kapha dosha. Though mild pitta prakopa lakshana are seen, the diagnosis can be made as Kitibha kusta with predominant vatakapha prakopa. While assessing the signs and symptoms like violaceous, plantar, flat topped papules, plaques with the involvement of mucous membrane and presence of Wickham striae point towards the diagnosis of Lichen planus.

MANAGEMENT & OUTCOME

The patient was treated by adopting the treatment principle of *kusta roga*. Intially the *abhyantara shodhana* is planned, started with *deepana pachana karma* with *Chitrakadi vati* 250mg, four tablets were given for 3 times for 1 day. On the 2nd day

onwards, Anabhishyandi ghrita was taken orally starting with 50 ml at 6:00 am in the morning for the next 4 days in increasing doses with *sukoshna jala* as *anupana*. After 4 days of *snehapana*, when the *samyak* sneha siddhi lakshana were attained the patient was advised to undergo Sarvanga Swa Abyanga with Yastimadhu taila followed by Nimba patra parisheka for the next 4 days. On the 4th day of Sarvanga abyanga and parisheka, Virechana was given with 40gm *Trivrut lehya* at 9:00am in the morning. 13 Virechana vega were attained in the next 12 hours without any complications. Patient was advised to go for Samsarjana karma for 5days (Table 2).

Table 2 Dosage and days of the course of *Virechana karma*

Days of	Drug Given	Dose
treatment		
7/11/19	Chitrakadi vati	2-2-2
	250mg	Before
		food
8/11/2019	Anabhishyandi	50ml at
	ghrita	6:00am
9/11/2019	Anabhishyandi	100ml at
	ghrita	6:00am
10/11/2019	Anabhishyandi	150ml at
	ghrita	6:00am
11/11/2019	Anabhishyandi	200ml at
	ghrita	6:00am
12/11/2019-	Swa Abyanga	
15/11/2019	with Yastimadhu	
	taila & Nimba	
	patra Parisheka	
15/11/2019	Trivrut lehya	40gm at
		9:00 am

After the *Samsarjana kala Tuvaraka* rasayana was administered for 5 days, with the starting dose of 5ml of *Tuvaraka taila* with milk or water at 6:00am in empty stomach. Later enquired the patient about



any episode of vomiting or diarrhoea following administration. The the maximum dosage administered was 15 ml. During the course of rasayana, mudga yusha or rice with green gram without salt were advised with the anupana of normal water (Table 3). After the rasayana prayoga a course of samsarjana was done for the next 7 days (Table 4). There were no adverse effects observed during the course. The patient was discharged with bahya and abhyanatara shamana yoga like Kaishora guggulu 500mg (2-2-2 A/F), Capsule Yastimadhu 500mg (2-2-2 B/F) and Brihat Marichadi taila for external application. The patient continued the medications for 3 months with strict pathya. After the course of Virechana karma the patient got mild relief from the symptoms such as kandu,

parushata of the tvak and there was improvement in the appetite.

Table 3 Tuvaraka Rasayana Administration

Day	Dose	Episodes of vomiting/diarrhoea	
21/11/2019	5ml	=	
22/11/2019	10 ml	1 episode of	
		vomiting	
23/11/2019	10 ml	1 episode of	
		diarrhoea	
24/11/2019	15ml	2 episodes of	
		diarrhoea	
25/11/2019	15ml	3 episodes of	
		diarrhoea	

The patient was under regular follow up monthly till 3 months. There was significant reduction in the itching and complete reduction in the burning sensation during the follow up. After 3 months of the treatment with the *shamana yoga*, gradually there was reduction in the papules and plaques and the surrounding area was getting clear (Figure 5-8). The treatment need to be continued for the complete relief of the symptoms.

Table 4 Diet Plan After Tuvaraka Rasayana

Da	ay	Morning	Afternoon	Night
1	26/11/2019	Ganji gruel+ Lime juice(no	Ganji gruel+ Lime juice(no	Ganji gruel+ Lime juice(no
		salt)	salt)	salt)
2	27/11/2019	Ganji gruel+ Lime juice(no	Ganji gruel+ Lime juice(no	Ganji gruel+ Lime juice(no
		salt)	salt)	salt)
3	28/11/2019	Ganji+ Lime pickle+salt+	Ganji+ Lime pickle+salt+	Ganji+ Lime pickle+salt+
		Lime juice	Lime juice	Lime juice
4	29/11/2019	Ganji+ Lime pickle+salt+	Ganji+ Lime pickle+salt+	Rice+ Moong dal+Bitter
		Lime juice	Lime juice	gourd side dish+ Jaggery (no
				garnish)
5	30/11/2019	Rice+ Moong dal+Bitter	Rice+ Moong dal+Bitter	Rice+ Moong dal+Bitter
		gourd side dish+Jaggery(no	gourd side dish+ Jaggery	gourd side dish+ Jaggery(no
		garnish)	(no garnish)	garnish)
6	01/12/2019	Rice+ Moong dal+Bitter	Rice+ Moong dal+Bitter	Rice+ Moong dal+Bitter
		gourd side dish with	gourd side dish with	gourd side dish with garnish
		garnish OR	garnish OR	OR Rice+Meatsoup+Pepper
		Rice+Meatsoup+Pepper	Rice+Meatsoup+Pepper	
7	02/12/2019	Rice+ Moong dal+Bitter	Rice+ Moong dal+Bitter	Normal diet
		gourd side dish with	gourd side dish with	
		garnish OR	garnish OR	
		Rice+Meatsoup+Pepper	Rice+Meatsoup+Pepper	





Figure 5-8 Lesions after treatment (1 month of follow-up)

DISCUSSION

The indulgence in faulty lifestyles and food habits including the excessive intake of mutually contradictory foods, lack of exercise. day sleep, excessive guru, snigdha ahara consumption, excessive intake of freshly harvested grains, flour preparations, curd, fish, salt and sour items can lead to the vitiation of the tridosha. This dosha dusti vitiates the tvak, rakta, mamsa and ambu constitute the pathology of Kusta vyadhi⁴. All the types of Kusta are caused by the simultaneous vitiation of the tridosha. However, some dosha become predominant resulting in the vyadhi.

Kitibha kusta is one among the kshudra kusta which is a vatakapha pradhana vyadhi⁵. The lakshana like shyava and krishna varna pidaka, kinakhara sparsha and rukshata are due to the vitiated vata dosha while symptoms like kandu, utseda, sthairyata are due to the vitiated kapha dosha.

Kusta in which there is the invariable involvement of all the *tridosha* and it have the *bahudosha avastha* from the day one. It lingers for a longer duration of time and hence *shodhana* is essential in this.

The Abyantara shodhana in the Kusta can achieved through six modalities; Sampurna shodhana, Bahushah shodhana, Ubhaya shodhana, Yadhakrama shodhana, Nitya shodhana and Sadya shodhana. In the present study the Yadhakrama shodhana was adopted by administrating the deepana followed pachana chikitsa by madhyama snehapana, sarvanga snigdha sveda, tikshna shodhana and samsarjana karma. Here for each procedure kustaghna dravya yukta snehapana, kustghna taila abyanga, kustaghna kashaya parisheka and kustaghna yavagu samsarjana was done. Intially *Chitrakadi vati* was given for the deepana and pachana action. This yoga which includes drugs like chitraka, pippali, pippali moola, trikatu, hingu, ajamoda, sarji kshara, yavakshara and 5 types of lavana having ushna veerya predominant of



katu, tikta rasa does the ama pachana and agni deepana.

After the agni deepana and pachana, the snehapana is advised. Snehapana helps to mobilise the dosha from the shakha to the koshta, nurtures the body and prevents the excess vata kopa. Medicated processed with tikta drugs are more apt in situation. Thus Anabhishyandi/ Guggulu tiktataka ghrita is the drug of choice here. It includes drugs like *nimba*, guduchi, vasa, patola, kantakari, shuddha guggulu, manjista, bhallataka, chitraka, kutaja, ativisha, kusta, chavya, devadaru, kshara dravya which have predominant tikta rasa and kustahara action. The dosage of the snehapana is determined based on the agni, kosta, desha, kala, vyadhi and roga bala. Considering this madhyama snehapana is advised here in which the sneha get digested in 12 hours. Moreover, in the diseases like kusta and vata shonita the madhyama matra of the snehapana is advised⁶.

After *snehapana*, *abyanga* is administered with *kustahara taila* for the generalised lesions with minimal or no secretions and with minimal or no pain. *Yastimadhu taila* was used for the *abyanga* which has *yastimadhu* processed with *go ksheera* and *amalaki* having *kandughna* action. As the patient has lesions all over the body, to prevent the transmission and infection, self

abyanga was advised. Following the abyanga, nimba patra parisheka was advised. Nimba having tikta, kashaya rasa helps in mitigating kandu, tvak dosha and kusta.

Kusta is a rakta pradoshaja vyadhi and the virechana karma is found to be superior in curing the Kusta. Multiple studies have already proved the efficacy of virechana karma in the Kusta diseases. Here the virechana was done with trivrut lehya. As per the literature, trivrut, danti and triphala are the choice of the drugs for the virechana karma in Kusta⁷. The samsarjana karma was advised for 5 days following the virechana.

For the chronic lingering diseases like Kusta, the vyadhihara rasayana advised. Tuvaraka, bakuchi, ballataka are the drugs used as the *rasayana* for *Kusta*⁸. In the present case, *Tuvaraka rasayana* was advised to the patient after shodhana starting from the dose of 5ml. Tuvaraka have kashaya, tikta, katu rasa and kustaghna, kandughna, krimighna, rechaka, and raktaprasadana properties. During the course of the *rasayana* specific dietary restrictions told in the literature was followed. The *mudga* yusha without lavana and *sneha* was advised in the initial days of the rasayana⁹. During the course of the Tuvaraka rasayana, the episodes



vomiting or diarrhoea occurred due to its *rechaka* action.

Following the *rasayana*, *samsarjana karma* was advised to attain the normalcy of the *koshta* and *agni*. The medicinal preparations like *Kaishora guggulu*, *Yastimadhu* capsules and *Brihat marichadi*

taila were advised as shamana yoga which mainly has kustahara, kandughna properties helps in the further deterioration of the disease and prevents its recurrence. They were advised till the complete remission of the symptoms (Table 5).

Table 5 Ingredients, properties and action of the Drugs

Sl.No	Drug	Ingredients	Properties and Action
1	Chitrakadi vati ¹⁰	Chitraka, Pippali moola, Saindhava lavana, Sauvarchala lavana, Vida lavana, Samudra lavana, Audbhida lavana, Shunti, Maricha, Pippali, Hingu, Ajamoda, Chavya, Sarji kshara, Yavakshara, Bhavana with Matulunga swarasa	Drugs having properties of Agni deepana and Ama pachana
2	Anabhishyandi/Guggulu tiktaka ghrita ¹¹	Nimba, Guduchi, Patola, Vasa, Kantakari, Pata, Vidanga, Devadaru, Gajapippali, Sarji kshara, Yava kshara, Shunti, Haridra, Mishi, Chavya, Kusta, Tejovati, Maricha, Shuddha guggulu, Manjista, Bhallataka, Chitraka, Kutaja, Ativisha, Yavani, Katuka, Pippali, Rasna,	Predominantly of <i>Tikta</i> , <i>Katu</i> , <i>Kashaya rasa dravya</i> having properties of <i>Kustahara</i>
3	Yashtimadhu taila ¹²	Yastimadhu, Amalaki, Goksheera, Tila taila	Kandughna
4	Nimba ¹³	Panchanga of Nimba (Azadirachta indica)	Tikta, Kashaya rasa, Sheeta virya, Katu vipaka, Kaphapitta shamaka, Kandu, Twak dosha, Krimi, Kusta Hara
5	Trivrut Lehya ¹⁴	Trivrut, Ela, Tvak, Patra, Madhu, Sarkara	Katu, Tikta, Madhura, Kashaya rasa, Sukha virechaka, Bhedana, Rechaka
6	Tuvaraka Taila ^{9,15}	Oil extracted from the seeds of Tuvaraka (Hydnocarpus laurifolia)	Ushna veerya, Kaphavata shamaka, Kustaghna, Kandughna, Krimighna, Rechaka, Raktaprasadana Pama, Vicharchika, Kandu, Sidhma, Dadru hara, Sarva kustahara
7	Kaishora guggulu ¹⁶	Shuddha guggulu, Haritaki, Bibhitaki, Amalaki, Guduchi, Shunti, Maricha, Pippali, Vidanga, Trivrut, Danti	Agni deepana and Kustahara
8	Yastimadhu ¹⁷ capsule	Powder of Yastimadhu (Glycyrrhiza glabra)	Madhura rasa, Sheeta veerya, Vatapitta shamaka Raktavikara, Kandu, Charma



roga, Varnavikara, Vatanulomana, Kanthya, Varnya, Kandughna, Rasayana, Balya, Jeevaniya

Rasayana, Balya, Jeevaniya Brihat Marichadi taila¹⁸ Maricha, Trivrut, Danti, Kustahara, Visphota, Vicharchika hara Arkakshira, Gomaya rasa, Devadaru, Haridra, Daruharidra, Jatamamsi, Kusta, Chandana, Visala, Karavira, Shuddha Haratala, Shuddha Manashila, Chitraka, Langali, Vidanga, Cakramarda, Shirisa, Kutaja, Nimba, Saptaparna, Guduchi, Snuhi, Aragvadha, Karanja, Khadira, Pippali, Vacha, Jyotishmati, Shuddha vatsanabha, Katu taila, Gomutra

Complete cure is not possible by the single course of the *shodhana* as the amount of the *dosha* is more, so elimination of all the vitiated *dosha* in a single course is inappropriate with due consideration of the physical strength. Small elimination of the *dosha* at regular intervals is considered as the intelligent approach of the *Kusta chikitsa*.

CONCLUSION

The Case report demonstrates the management of *Kitibha kusta* w.s.r Lichen planus through *Virechana karma* and *Vyadhihara rasayana*. The treatment for 3 months there was 60% improvement in the symptoms and signs of the disease without any untoward effects. The complete cure of the disease is possible by repeating the course of *shodhana* and *rasayana*. The results need to be studied in more numbers of patients for the better assessment.

PATIENT CONSENT

Written permission for publication of this case study has been obtained from the patient.



REFERENCES

- 1. Agnivesha. Charaka Samhita with Ayurveda Dipika commentary of Chakrapanidatta. Acharya Jadavaji Trikamji editor. Varanasi: Chaukhambha orientalia; Reprint edition 2011. Pp.738. p. 450.
- 2. Agnivesha. Charaka Samhita with Ayurveda Dipika commentary of Chakrapanidatta. Acharya Jadavaji Trikamji editor. Varanasi: Chaukhambha orientalia; Reprint edition 2011. Pp.738. p.451.
- 3. Warner E C. Savill's system of clinical medicine. 14th ed. New Delhi: CBS Publishers & Distributors; 2005. Pp. 1496. p.951
- 4. Agnivesha. Charaka Samhita with Ayurveda Dipika commentary of Chakrapanidatta. Acharya Jadavaji Trikamji editor. Varanasi: Chaukhambha orientalia; Reprint edition 2011. Pp.738. p.450.
- 5. Agnivesha. Charaka Samhita with Ayurveda Dipika commentary of Chakrapanidatta. Acharya Jadavaji Trikamji editor. Varanasi: Chaukhambha orientalia; Reprint edition 2011. Pp.738. p.451.
- Agnivesha. Charaka Samhita with Ayurveda Dipika commentary of Chakrapanidatta. Acharya Jadavaji Trikamji editor. Varanasi: Chaukhambha

- orientalia; Reprint edition 2011. Pp.738. p.84.
- 7. Agnivesha. Charaka Samhita with Ayurveda Dipika commentary of Chakrapanidatta. Acharya Jadavaji Trikamji editor. Varanasi: Chaukhambha orientalia; Reprint edition 2011. Pp.738. p.452.
- 8. Vagbhata. Astangahrdayam with Sarvangasundara commentary of Arunadatta & Ayurvedarasayana commentary of Hemadri. Paradakara Harishastri editor. 10th ed. Varanasi: Chaukhambha Orientalia; 2014. Pp.956. p.715.
- Vagbhata. Astangahrdayam with Sarvangasundara commentary of Arunadatta & Ayurvedarasayana of Hemadri. commentary Paradakara Harishastri editor. 10th ed. Varanasi: Chaukhambha Orientalia; 2014. Pp.956. p.929.
- 10. Agnivesha. Charaka Samhita with Ayurveda Dipika commentary of Chakrapanidatta. Acharya Jadavaji Trikamji editor. Varanasi: Chaukhambha orientalia; Reprint edition 2011. Pp.738. p.520.
- 11. The Ayurvedic formulary of India (Part 1). 2nd ed. New Delhi: The controller of Publications Civil lines; 2003. Pp. 488. p.91.



- 12. The Ayurvedic formulary of India (Part 1). 2nd ed. New Delhi: The controller of Publications Civil lines; 2003. Pp. 488. p.151.
- 13. Lucas Shanth Kumar. Dravyaguna Vijnana (Vol 2). Varanasi: Chaukhambha Visvabharati;2013. Pp.910. p.78.
- 14. Lucas Shanth Kumar. Dravyaguna Vijnana (Vol 2). Varanasi: Chaukhambha Visvabharati;2013. Pp.910. p.291.
- 15. Lucas Shanth Kumar. Dravyaguna Vijnana (Vol 2). Varanasi: Chaukhambha Visvabharati;2013. Pp.910. p.35.
- 16. The Ayurvedic formulary of India (Part 1). 2nd ed. New Delhi: The controller of Publications Civil lines; 2003. Pp. 488. p.67.
- 17. Lucas Shanth Kumar. Dravyaguna Vijnana (Vol 2). Varanasi: Chaukhambha Visvabharati;2013. Pp.910. p.103.
- 18. The Ayurvedic formulary of India (Part 2). 1st ed. New Delhi: The controller of Publications Civil lines; 2000. Pp. 488. p.147.