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Research Article

ETIOPATHOLOGICAL STUDY OF 50 PATIENTS OF CUTANEOUS LICHEN PLANUS IN AYURVEDA

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ABSTRACT

Lichen planus is a distinctive dermatosis characterized by pruritic violaceous flat topped papule or plaque with a network of white lines called the Wickham's striae. First introduced by Erasmus Wilson in 1869, it an idiopathic inflammatory, autoimmune disorder affecting the skin, the mucous membrane, hairs and nails. Sites involved in skin are the flexor surface of wrists and forearms, dorsal surface of hands, anterior aspect of lower legs, neck and pre sacral area. In Ayurveda, though there is no direct reference of cutaneous lichen planus like diseases, there are certain skin lesions mentioned under *Kusthas* like *Charmakustha, Kitibha Kustha, Vicarchika* and *Alasa* having signs and symptoms similar to cutaneous lichen planus. An attempt has been made to study the aetiopathogenesis of cutaneous lichen planus in Ayurveda and to evaluate the common *Nidanas* mentioned under *Kustha*, which are commonly responsible for causation of the disease. For this purpose, a study was done on 50 patients suffering from cutaneous lichen planus. The patients were selected randomly from OPD & IPD; Govt. Ayurvedic College and Hospital, Guwahati, Assam. Proper history was taken in a specially designed proforma to evaluate the most common *Nidanas.* From this study it was found that there is a definite role of *Aharaja, Viharaja* and *Manasik Nidanas* in cutaneous Lichen planus. The *Nidanas* were mostly *Pitta-Kapha Vardhak Ahar-Viharas* like *Gramya Anupa Udaka Mamsa, Ati Lavana Sevana, Diwaswapna, Vegdharana*, etc. This study can be beneficial in preventing the occurrence and recurrence of lichen planus on adopting *Nidana Parivarjanam*.

INTRODUCTION

Lichen planus is a common inflammatory dermatosis that affects the skin, hair, nails and the mucous membranes. It is characterized by pruritic violaceous flat topped papule or plaque with a network of white lines or puncta called the Wickham's striae. Koebner's phenomenon is a common occurrence. Lichen planus is worldwide in distribution with greater incidences in adult population than the children. Familial lichen planus can occur and affected persons often develop diseases at an earlier age than patients with idiopathic non-familial lichen planus.

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Recurrences are seen in numerous patients. Various clinical variants are seen like the hypertrophic lichen planus, actinic lichen planus, linear lichen planus, lichen planus pigmentosus, guttate lichen planus, etc.[1,2]

Exact etiology of lichen planus is not known but histopathology suggests an immunological response to an antigen present in the basal cell layer of epidermis, so it is considered to be an autoimmune disorder. Factors implicated for causation of lichen planus are drugs- thiazides, antimalarials, quinidine, etc.; infections- hepatitis C virus infection or immunological disorders like primary biliary cirrhosis. Histology shows hyperkeratosis, focal hypergranulosis, irregular acanthosis, damage to basal cell layer and a band like dermal infiltrate hugging the epidermis. [3] There is incontinence of pigment, which is taken up by the melanophages in the upper dermis. In old lesions cellular infiltrate density decreases but number of

macrophages increases. Colloid, hyaline, cytoid or civatte bodies and Max Joseph spaces are also seen.

Lichen planus should be differentiated from lichen simplex chronicus, lichen amyloidosis, Lichen Nitidus, Psoriasis or Squamous cell CA. Treatment is usually symptomatic as lichen planus is benign and self-limiting. Potentially provocative medicines should be discontinued. Corticosteroids, both topical and systemic remain the first line of treatment. Pruritus can be controlled by use of oral antihistamines. PUVA can be used for extensive lesions. [2]

The etiopathology of lichen planus is studied and known in modern science but direct reference in Ayurveda is not available. Different Ancient Acharyas mentioned a cluster of aetiological factors[4,5,6,7] which are common for all *Kusthas*[8]. So, study about all the etiological factors in relation to lichen planus chronicus is the need of the hour. The aetiological factors may vary on dietary or environmental factors, infections, *Dosha-Dushya* imbalance and some behavioural factors. In Ayurveda for manifestation of diseases whatever the cause maybe, there should be imbalance of the *Doshas*[9] (*Vata, Pitta* and *Kapha*) in our body. The aetiological factors causing imbalance has been mentioned in all the classical books[10]. So, study of the causative factor may also help to evaluate the causes of cutaneous lichen planus chronicus according to Ayurveda.

OBSERVATION AND RESULT

Purpose of the Study

To study the aetiopathogenesis of cutaneous lichen planus in light of Ayurveda and to find out the most commonly involved *Nidanas* in its pathologic manifestation.

MATERIALS AND METHODS

A study was conducted in a total of 50 patients presenting with signs and symptoms of cutaneous lichen planus. All the patients were randomly selected from OPD & IPD; Govt. Ayurvedic College and Hospital, Guwahati, Assam. Proper history was taken in a specially designed proforma to evaluate the most common *Nidanas* (as mentioned by the classical texts) prevailing in Assam. The data collected was analyzed statistically.

Inclusion Criteria

All the patients who visited OPD/IPD of Govt. Ayurvedic College & Hospital, presenting with the signs and symptoms of cutaneous Lichen planus were selected for study.

Exclusion Criteria

Patients with secondary bacterial infection or mixed infections, pregnant ladies, severely immune compromised patients like HIV, TB were excluded from the study.

Table 1: Incidence of Age in 50 patients of cutaneous Lichen Planus

Age group	No. of patients (n)	Percentage (%)
10-25 years	1	1%
26-40 years	22	44%
41-55 years	14	28%
56-70 years	11	22%
71-85 years	2	4%
Total	**50**	**100%**

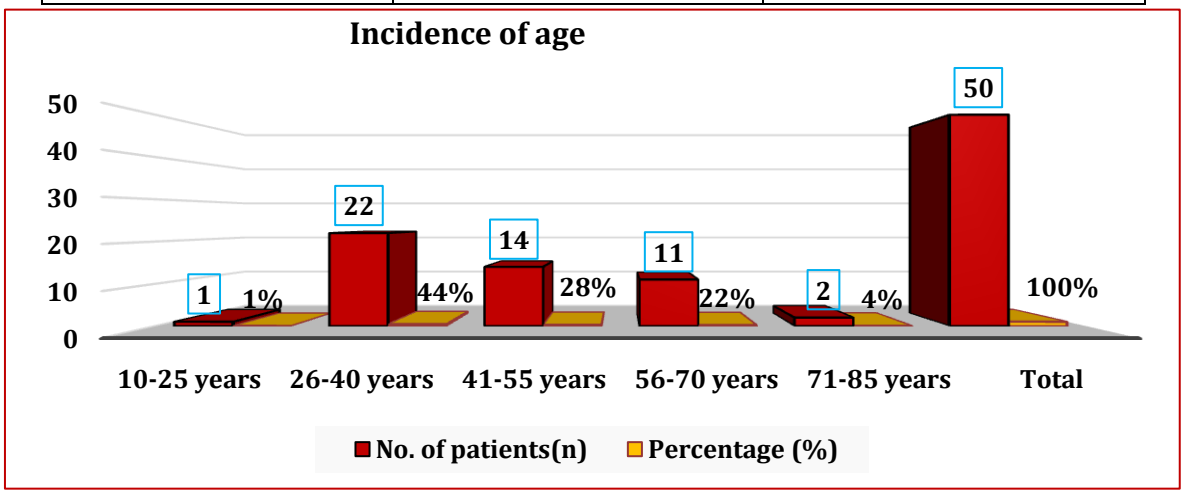


Figure 1: Incidence of age in 50 patients of cutaneous Lichen Planus

This chart reveals that the highest number of incidences of cutaneous lichen planus was in the age group 26-40 years (44%), then in age group 41-55 years (28%), then age group 56-70 years (22%) and in age groups 71-85 years (4%) and 10-25 years (1%).

Table 2: Incidence of Gender in 50 patients of cutaneous Lichen Planus

Gender	No. of patient (n)	Percentage (%)
Male	29	58%
Female	21	42%
Total	**50**	**100%**

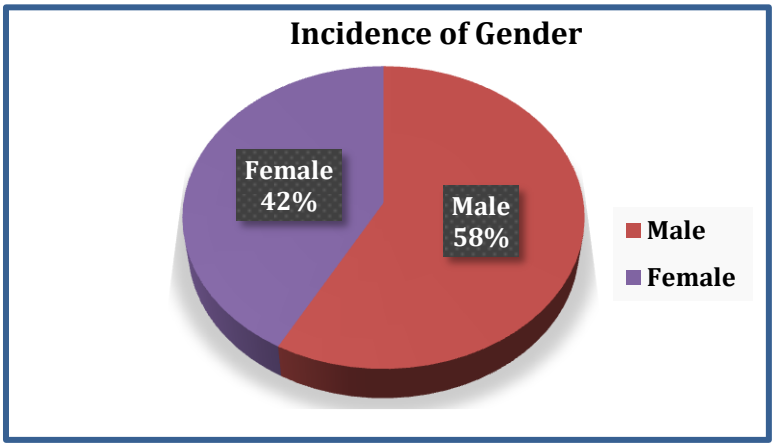


Figure 2: Incidence of Gender in 50 patients of cutaneous Lichen Planus

This chart shows incidence of cutaneous lichen planus among the males (58%) and the females (42%).

Table 3: Incidence of religion in Lichen planus chronicus

Religion	No. of patient (n)	Percentage (%)
Hindu	38	76%
Muslim	12	24%
Others	0	0%
Total	**50**	**100%**

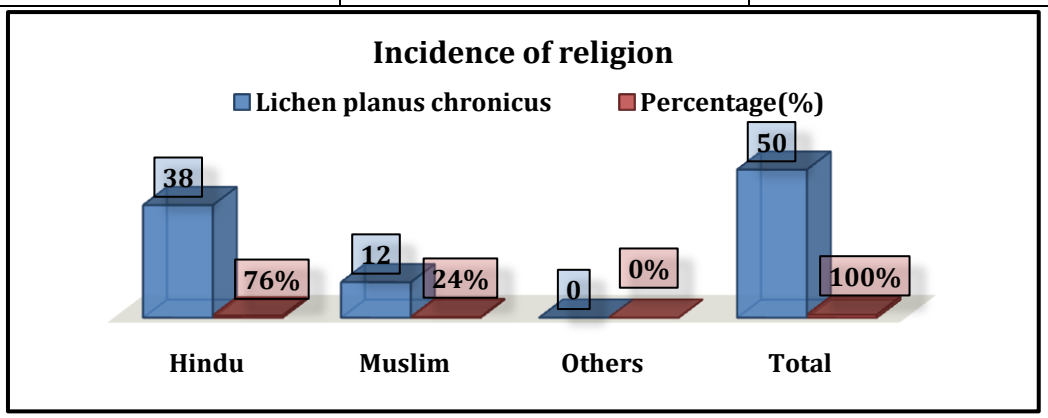


Figure 3: Incidence of religion in cutaneous Lichen Planus

This chart shows greater occurrence of cutaneous lichen planus among the believers of Hinduism (76%) followed by Muslim (24%).

Table 4: Incidence of Occupation in 50 patients of cutaneous Lichen Planus

Occupation	No. of patient (n)	Percentage (%)
Service	15	30%
Student	1	1%
Business	11	22%

Homemaker	8	16%
Daily wage worker	13	26%
Retired	2	4%
Total	**50**	**100%**

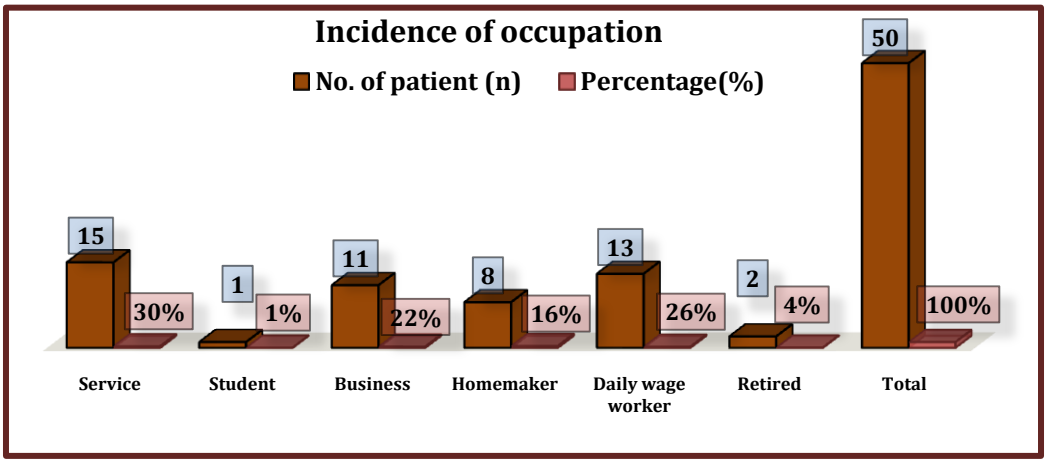


Figure 4: Incidence of Occupation for 50 patients of cutaneous Lichen Planus

This chart shows greater incidence of cutaneous lichen planus in servicemen (30%), then daily wage worker (26%), followed by businessmen (22%), homemakers (16%), retired (4%) and the students (1%).

Table 5: Incidence of family history for 50 patients of cutaneous Lichen Planus

Incidence	No. of patient (n)	Percentage (%)
Positive	13	26%
Negative	37	74%
Total	**50**	**100%**

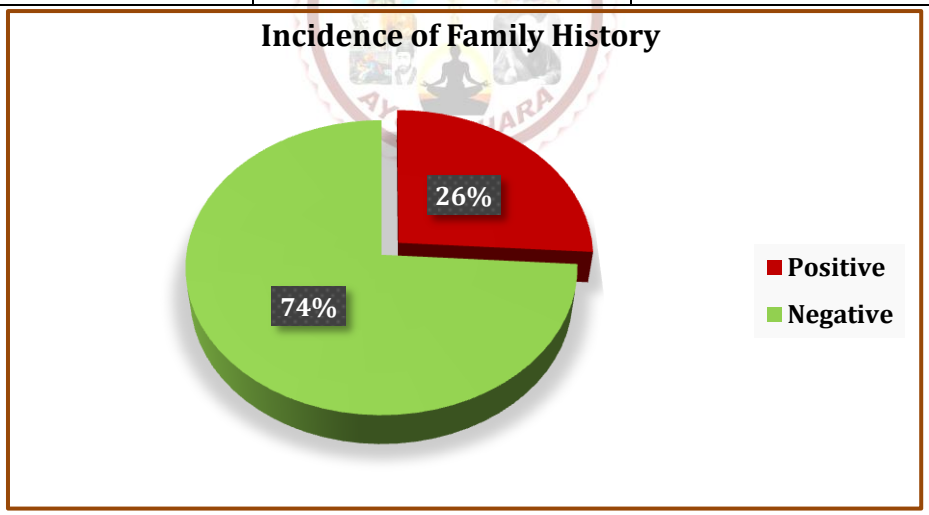


Figure 5: Incidence of family history for 50 patients of cutaneous Lichen Planus

This chart shows incidence of positive family history as 26% than negative family history which is 74%.

Table 6: Incidence of recurrence in 50 patients of cutaneous Lichen Planus

Recurrence	No. of patient (n)	Percentage (%)
Recurrent Lesions	32	64%
Persistent lesion	13	26%
New Lesions	5	10%
Total	**50**	**100%**

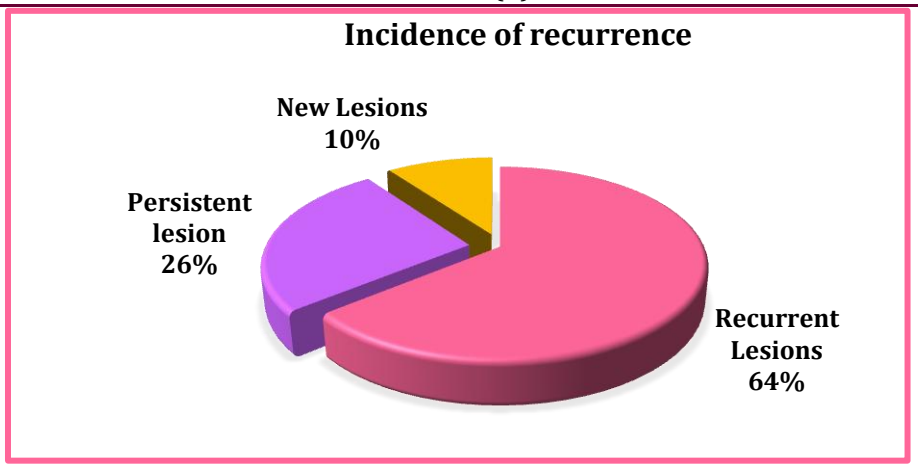


Figure 6: Incidence of recurrence in 50 patients of cutaneous Lichen Planus

From this chart incidence of recurrence is observed as 64%, persistent lesions as 26% and new lesions as 10%.

Table 7: Incidence of associated diseases in 50 patients of cutaneous Lichen Planus

Incidence	No. of patient (n)	Percentage (%)
Diabetes mellitus	12	24%
Hypertension	18	36%
Anaemia	10	20%
Hypothyroidism	8	16%
Bronchial asthma	7	14%
No associated diseases	5	10%
Total	**50**	**100%**

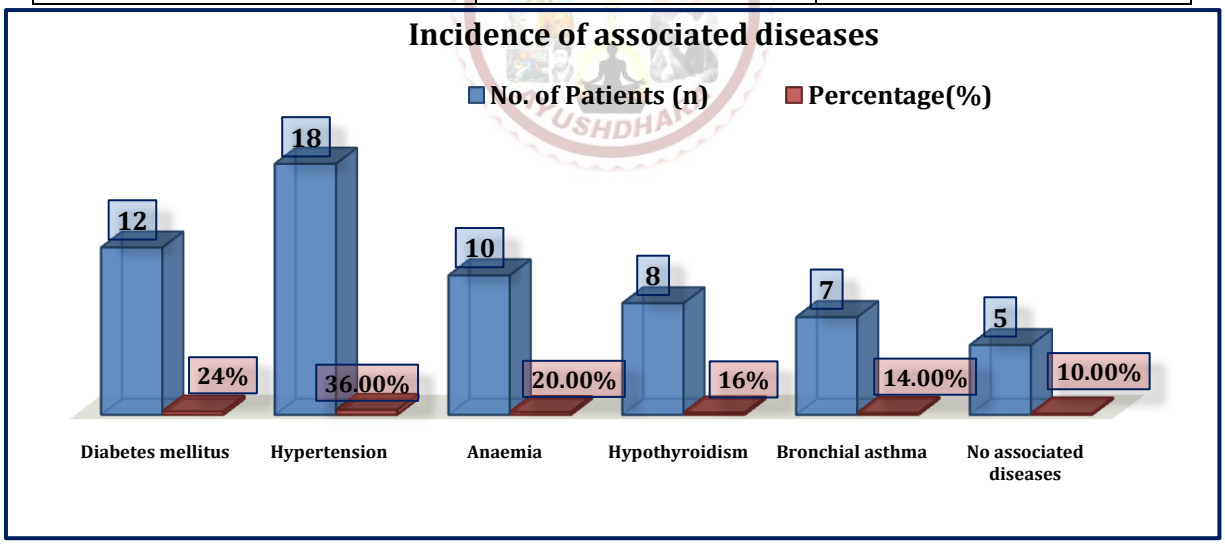


Figure 7: Incidence of associated diseases in 50 patients of cutaneous Lichen Planus

The incidence of diabetes mellitus among patients with cutaneous lichen planus was 24%, hypertension was 36%, hypothyroidism was 16%, bronchial asthma was 14%, anaemia was 20% and no associated disease was 10%.

Table 8: Incidence of dietary habit in 50 patients of cutaneous Lichen Planus

Dietary habit	Number of patients (n)	Percentage(%)
Vegetarian	5	10%
Non Vegetarian	45	90%
Total	**50**	**100%**

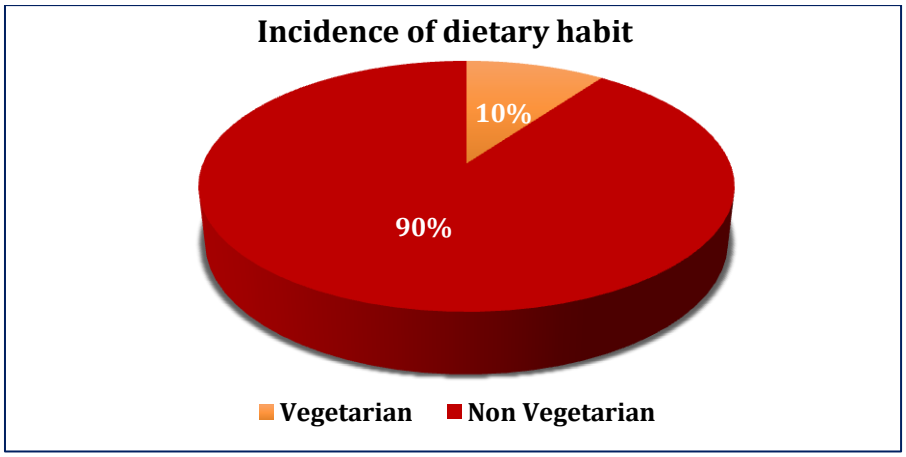


Figure 8: Incidence of dietary habit in 50 patients of cutaneous Lichen Planus

Incidence of diet among patients with cutaneous lichen planus is non-vegetarian- 90% and vegetarian patients- 10%.

Table 9: Incidence of Addiction in 50 patients of cutaneous Lichen Planus

Type of addiction	No. of Patients (n)	Percentage (%)
Alcohol	15	30%
Tobacco	14	28%
Smoking	11	22%
Betel nut and leaves	5	10%
Gutkha	5	10%
No addiction	5	10%
Total	**50**	**100%**

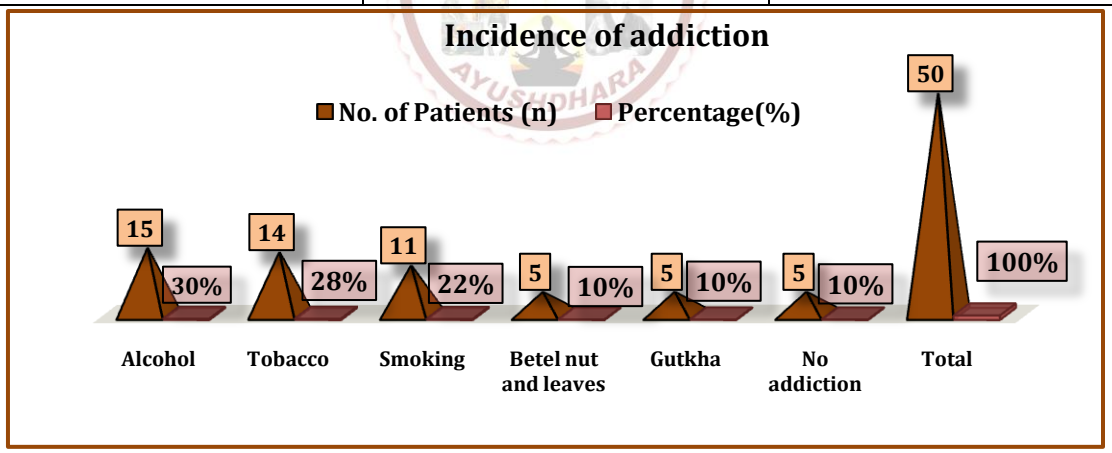


Figure 9: Incidence of Addiction in 50 patients of cutaneous Lichen Planus

The incidence of alcohol addiction is 30%, tobacco is 28%, smoking is 22%, betel nut and leaves is 10%, gutkha is 10% and those with no addiction was 10% in cutaneous lichen planus.

Table 10: Incidence of *Deha prakriti* in 50 patients of cutaneous Lichen Planus

***Prakriti* type**	**Number of patients (n)**	**Percentage (%)**
Vata-pittaja	8	16%
Vata-Kaphaja	30	60%
Kapha-pittaja	12	24%
Total	**50**	**100%**

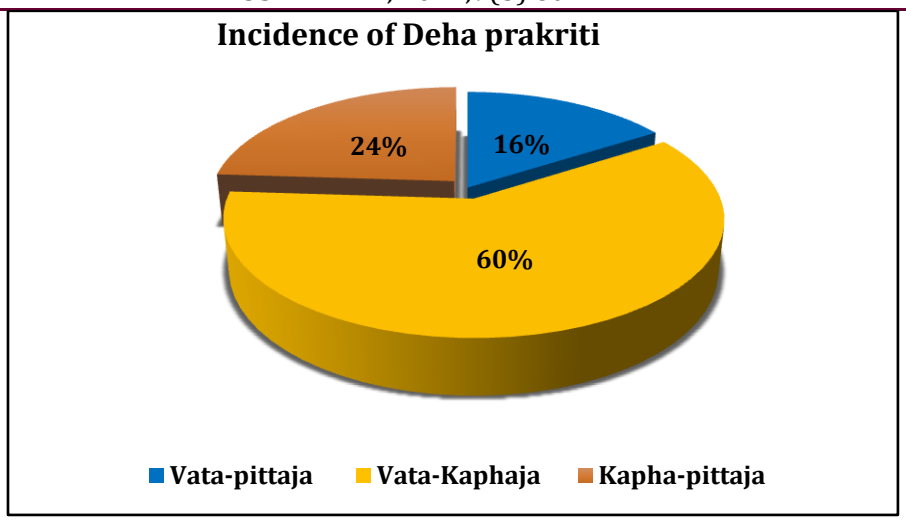


Figure 10: Incidence of *Deha Prakriti* in 50 patients of cutaneous Lichen Planus

The incidence of *Deha Prakriti* in shows *Vata-Kaphaja* as 60% *Vata-Pittaja* as 16% and *Kapha-Pittaja* as 24% cutaneous lichen planus.

Table 11: Incidence of *Agni* in 50 patients of cutaneous Lichen Planus

Agni	Number of patients (n)	Percentage(%)
Samagni	13	26%
Mandagni	27	54%
Tikshnagni	4	8%
Vishamagni	6	12%
Total	**50**	**100%**

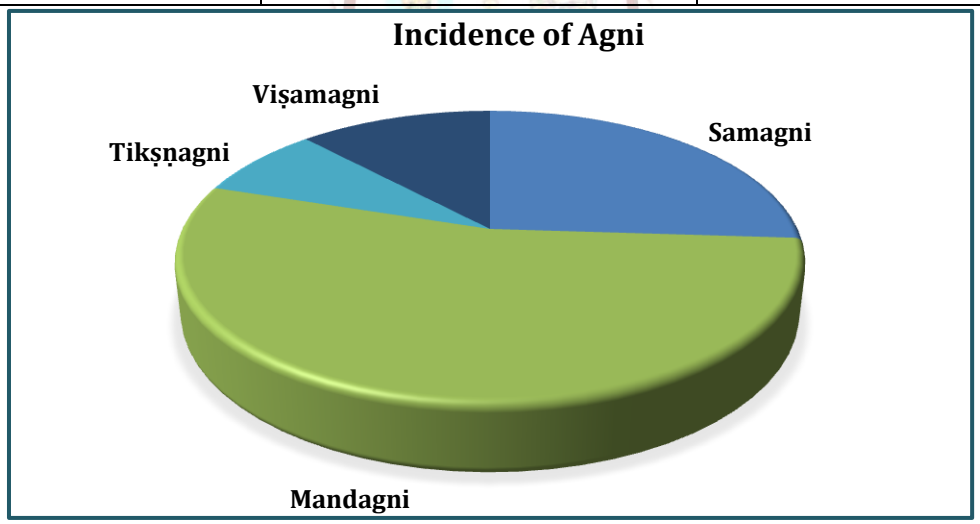


Figure 11: Incidence of *Agni* in 50 patients of cutaneous Lichen Planus

This chart shows *Agni* status of patients of cutaneous lichen planus with *Samagni* as 26%, *Mandagni* as 54%, *Tikshagni* as 8% and *Visamagni* as 12%.

Table 12: Incidence of the status of *Nidra* (Sleep) in 50 patients of cutaneous Lichen Planus

Sleep	Number of patients (n)	Percentage (%)
Normal	18	36%
Disturbed	32	64%
Total	**50**	**100%**

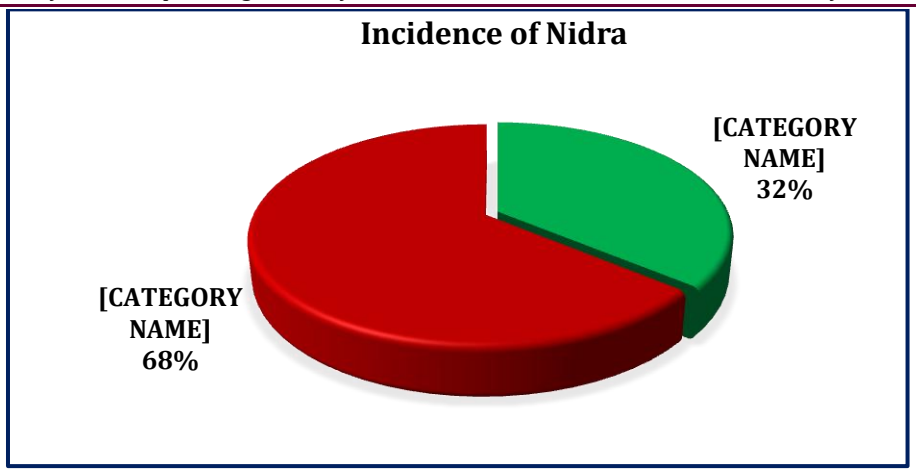


Figure 12: Incidence of the status of *Nidra* (Sleep) in 50 patients of cutaneous Lichen Planus

Normal sleep is 32% and disturbed sleep is 68% in patients of cutaneous lichen planus.

Table 13: Incidence of *Aharaja Nidan* in 50 patients of cutaneous Lichen Planus

Aharaja nidana	**No. of patient**	**Percentage (%)**
Ati Amla	10	20%
Ati Lavaṇa	21	42%
Virudha Ahara	15	30%
Guru Annapana	21	42%
Snigdha Annapana	21	42%
Ati Dravapana	5	10%
Sneha Ati Sevana	13	26%
Asatmya Ahara	19	30%
Ajirṇa Ahara	11	22%
Cilcima Ca Payasa	9	18%
Gramya Anupa Udaka Mamsa with milk	6	12%
Shita Ushna Ahar Krama Mukta Sevana	17	34%
Madhu Phaṇita Matsya Lakuca	21	42%
Dadhi With Matsya	7	14%
Masha	9	18%
Mulaka	3	6%
Pista Anna	16	32%
Tila	16	32%
Guḍa	11	22%
Ati Madyapana	20	40%
Harita Shaka Vidahi Anna	13	26%
Lahsuna	7	14%
Gramya Anupa Udaka Mamsa	26	52%
No Significant *Ahar*	5	10%
Total	**50**	**100%**

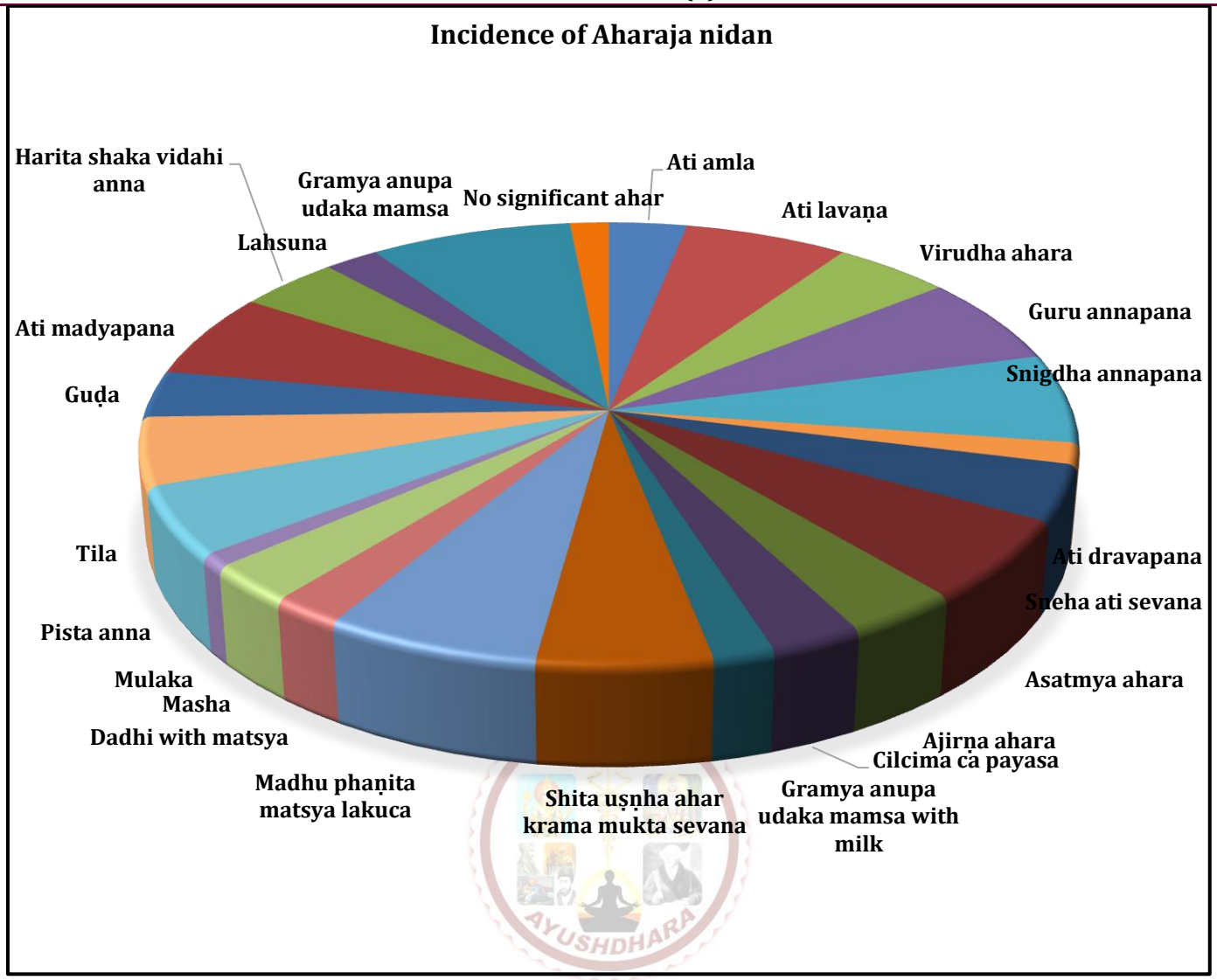


Figure 13: Incidence of *Aharaja Nidan* in 50 patients of cutaneous Lichen Planus

Aharaja Nidan in cutaneous lichen planus showed occurrence of *Ati Amla-20%, Ati Lavana-42%, Virudha Ahara-30%, Guru Annapana-42%, Snigdha Annapana-42%, Ati Dravapana- 10%, Sneha Ati Sevana-26%, Asatmya Ahara-30%, Ajirna Ahara- 22%, Cilcima Ca Payasa-18%, Gramya Anupa Udaka Mamsa* with *Milk-12%, Shita Ushna Ahar Krama Mukta Sevana-34%, Madhu Phanita Matsya Lakuca-42%, Dadhi* with *Matsya-14%, Masha-18%, Mulaka-6%, Pista Anna, 32%, Tila, 32%, Guda, 22%, Atimadyapana-40%, Harita Shaka Vidahi Anna-26%, Lahsuna-14%, Gramya Anupa Udaka Mamsa-52%*, No significant *Ahar*-10%.

Table 13: Incidence of *Viharaja nidana* in 50 patients of cutaneous Lichen Planus

Viharaja Nidana	**No. of Patient**	**Percentage (%)**
Diwaswapna	33	66%
Pancakarma Apacara	0	0
Bhaya-Srama Santapa Shita Udaka	11	22%
Vega Dharana	27	54%
Shita Ushna Vyatyasa Sevana	15	30%
Papkarma	0	0%
No Significant *Vihar*	8	16%

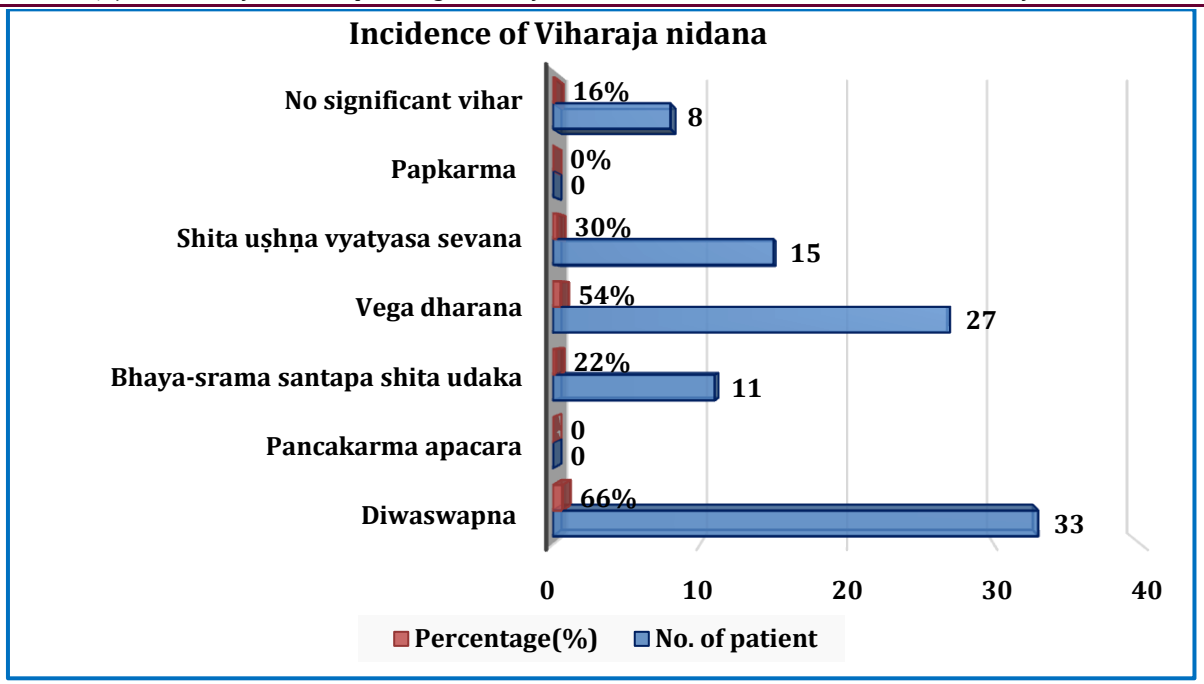


Figure 14: Incidence of *Viharaja nidana* in 50 patients of cutaneous Lichen Planus

Study of incidence of *Viharaja Nidan* showed *Diwaswapna-66%, Pancakarma Apacara-0%, Bhaya-Srama Santapa Shita Udaka-22%, Vega Dharana-54%, Shita Ushna Vyatyasa Sevana-30%, Papa Karma*-0%, No significant *Vihar*-16%

Table 15: *Manasik Nidan* in 50 patients of cutaneous Lichen Planus

Manasika Nidana	No. of Patient	Percentage (%)
Krodha	17	30%
Bhaya	6	12%
Shoka	15	30%
Cinta	39	78%
No Significant *Manasik Nidan*	4	8%

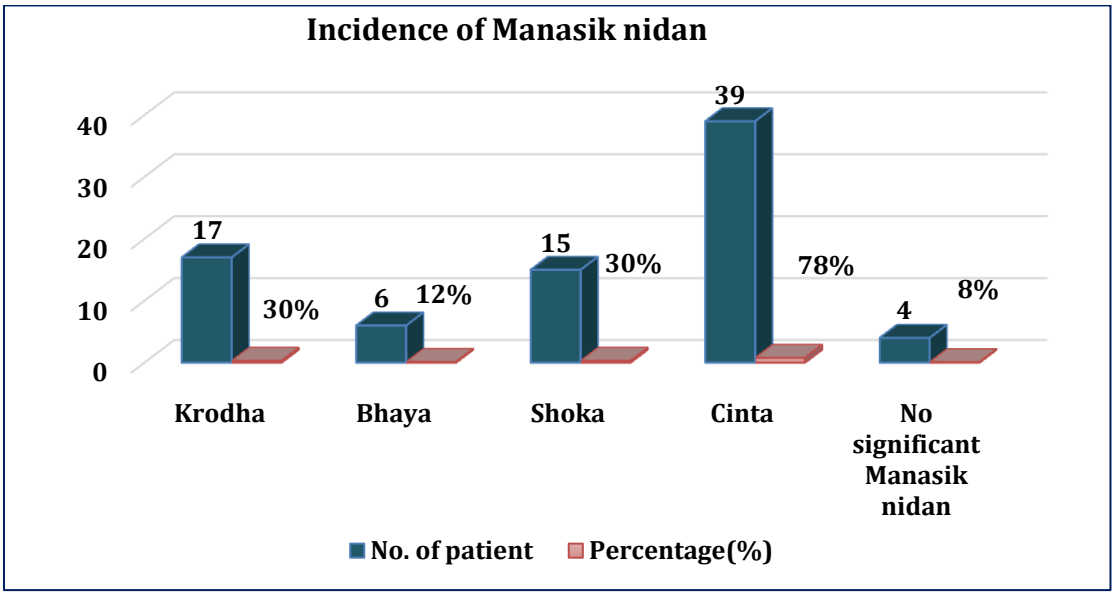


Figure 15: *Manasik Nidan* in 50 patients of cutaneous Lichen Planus

Manasik nidan in cutaneous lichen planus shows *Krodha-30%, Bhaya-12%, Shoka-30%, Cinta*-78%, no significant *Manasik Nidan*-8%

Table 16: Incidence of Sign & Symptoms in cutaneous Lichen Planus

S. No.	Sign and Symptoms	No. of Patients (n)	Percentage
1.	*Kandu*	50	100%
2.	*Shyavata*	50	100%
3.	Pain	7	14%
4.	Increased Thickness	50	100%

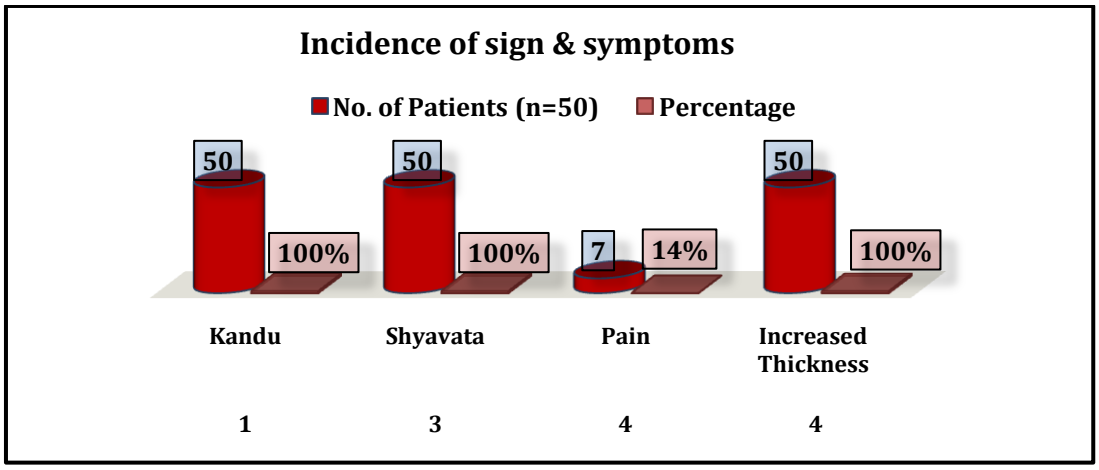
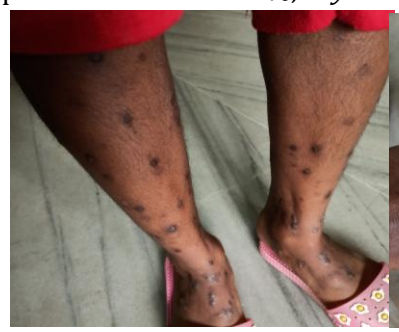


Figure 16: Incidence of Sign & Symptoms in cutaneous Lichen Planus

This graph shows *Kandu*-100%, *Shyavata*-100%, pain-14% and increased thickness-100%.



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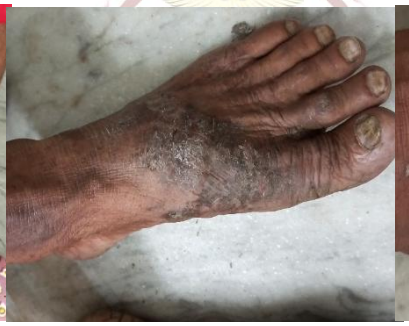

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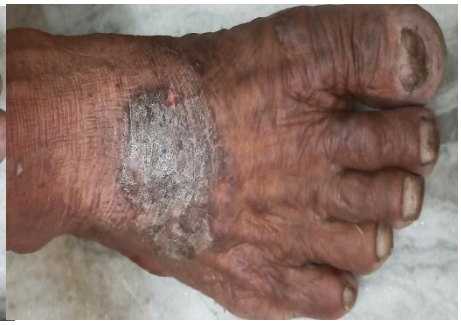

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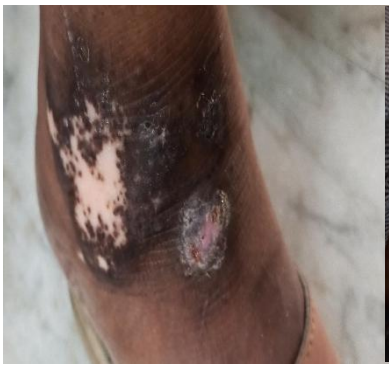

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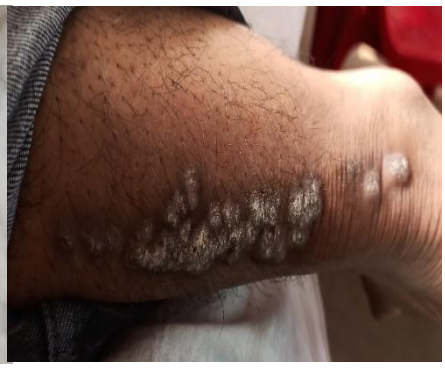

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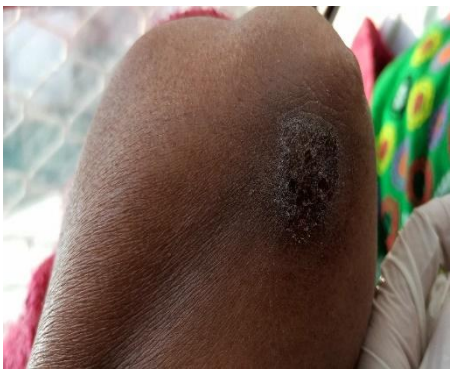

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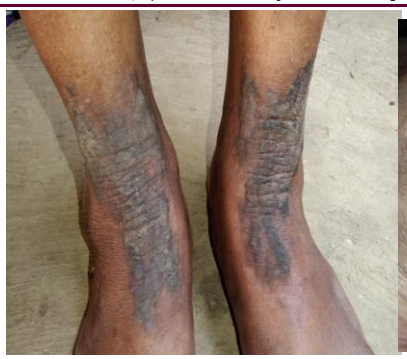

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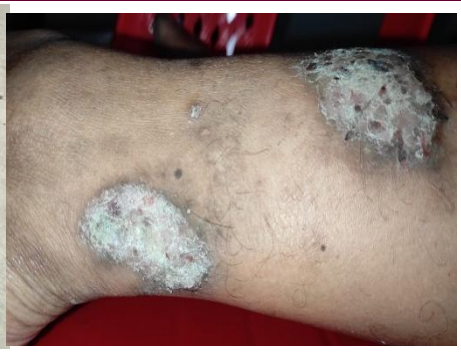

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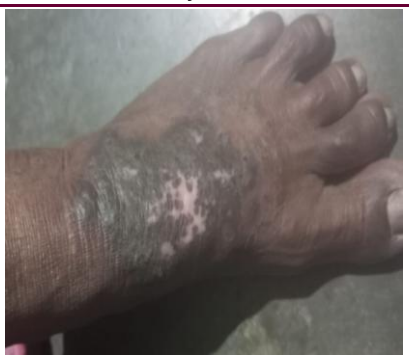

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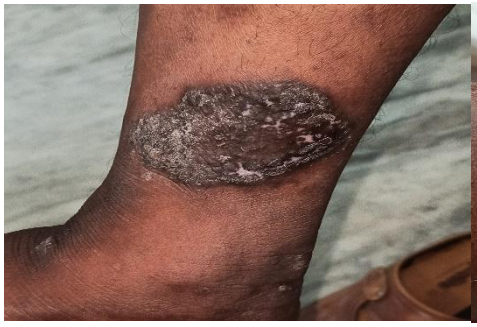
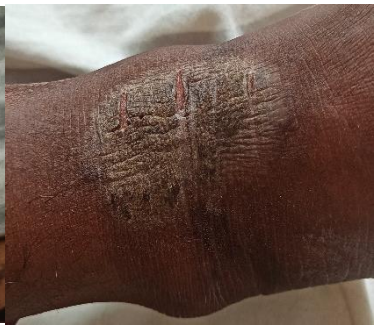
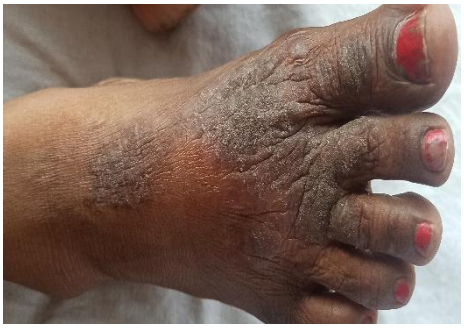


Picture 10



Picture 11



Picture 12

DISCUSSION

All the patients were examined for demographic and clinical profile.

The highest number of incidence of cutaneous lichen planus was in the age group 26-40 years with 44%, then in age group 41-55 years with 28%. The reason can be this age group is focused on career, economic status and family, and for the same this working group are constantly outdoors and are exposed to different etiologies like irritants, viruses, etc. which can trigger immune responses of the patient.

Higher incidence of cutaneous lichen planus is seen among the males (58%) than the females (42%). This could be because male population are mostly outdoor workers and they may be more prone to get exposed to irritants which can develop a lichenoid reaction.

The incidence of religion in cutaneous lichen planus showed followers of Hinduism as 76% & Islam as 24%. It can be due to the population distribution in Assam and the location of our institution affecting the hospital visits.

In cutaneous lichen planus the incidence is higher in servicemen (30%), followed by daily wage worker (26%) and businessmen (22%). This could be due to greater exposure to irritants.

The incidence of positive family history is 26% than negative family history which is 74% indicating the idiopathic cause of the disease.

The incidence of recurrence is observed as 64%, persistent lesions as 26% and new lesions as 8% in cutaneous lichen planus showing its idiopathic etiology and its persistence in presence of local irritants.

The incidence of diabetes mellitus among patients with cutaneous lichen planus was 24% & hypertension was 36%. This higher predisposition of diabetes & hypertension could be due to the increased prevalence of these diseases in modern days, due to faulty diet and lifestyle and as such no significant relation with the occurrence of cutaneous lichen planus.

Incidence of non-vegetarian among patients with cutaneous lichen planus is 90% and vegetarian patients is 10%. This could be due to the geographical location of the institute and the food habits of the people living in the surrounding region.

Greater incidence of tobacco, smoking and betel nut and leaves are associated with cutaneous lichen planus which could act as immunosuppressive agents. Nicotine is known to be immunosuppressive that can decrease neutrophilic phagocytic as well as affect chemotaxis and cell signaling in addition to inhibiting the release of reactive oxygen species. This could also be due to the easy availability of betel nut and tobacco in this region.

The incidence of *Deha Prakriti* shows *Vata-Kaphaja* as 60% *Vata-Pittaja* as 16% and *Kapha-Pittaja* as 24% in cutaneous lichen planus. This shows the greater predisposition of *Vata-Kaphaja* type of *Deha Prakriti* in these skin diseases.

Cutaneous lichen planus shows *Samagni* as 26%, *Mandagni* as 54%, *Tikshnagni* as 8% and

Visamagni as 12%. This shows the predominance of *Mandagni* in patients with cutaneous lichen planus which indicates that it is one among the causes and it also shows its relation with *Aharaja Nidanas*.

Disturbed sleep is 64% in patients of cutaneous lichen planus. Sleep disturbance is due to intense itching in the patients of cutaneous lichen planus and also due to stress factors.

Aharaja Nidan in cutaneous lichen planus showed higher incidence of *Gramya Anupa Udaka Mamsa*-52% *Guru Annapana*-42%, *Snigdha Annapana*-42%, *Ati-lavana*- 42% and *Matsya* intake (42%).

This may be due to the geographical location and food habits of the habitants residing in the studied area. But all these *Aharas* are the *Nidanas* of *Kustha* and they aggravate *Tridoshas* and cause *Mandagni.*

Study of incidence of *Viharaja Nidan* in cutaneous lichen planus showed higher incidence of *Diwaswapna*- 66% and *Vega Dharana*-47.3%. *Diwaswapna* causes *Kapha Vriddhi* and *Vega Dharan* aggravates *Vayu*, thus supporting the *Doshik* involvement in the present study.

Incidence of *Manasik Nidana* in cutaneous lichen planus shows *Krodha*-30%, *Shoka*-30% and *Cinta*-78%. These *Nidanas* increases stress which results in physiological, emotional and behavioural changes that can cause or exacerbate skin diseases. And sometimes antidepressants, relaxation therapies, and counselling can alleviate mood problems which can cause skin diseases.

Incidence of signs & symptoms in cutaneous lichen planus shows *Kandu*-100%, *Shyavata*-100%, pain- 14% and increased Thickness-100%

CONCLUSION

1. The definite role of *Aharaja* and *Viharaja nidanas* in the development and manifestation of cutaneous lichen planus has been observed in this study.
2. Abnormal dietary habits, mainly the diets which lead to *Kapha* and *Pitta Vriddhi* are mainly responsible for manifestation of cutaneous lichen planus
3. *Viharaja Nidanas* like *Diwaswapna* and *Vegadharan* which causes *Kapha- Vata Prakopa* can also lead to manifestation of cutaneous lichen planus.
4. Psychological factors like stress, etc. can also have a definite role in exaggeration of the symptoms in cutaneous lichen planus.

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