"CLINICAL AND DERMOSCOPIC ASSESSMENT OF VARIOUS LIP LESIONS - A CROSS-SECTIONAL STUDY"

BY

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In partial fulfilment of the requirements for the degree of MD

IN

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UNDER THE GUIDANCE OF

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I hereby declare that this dissertation entitled **"CLINICAL AND DERMOSCOPIC ASSESSMENT OF VARIOUS LIP LESIONS - A CROSS-SECTIONAL STUDY"** is a bonafide and genuine research work carried out by me under the guidance of Dr. KESHAVMURTHY ADYA, Professor & Head , Department of Dermatology Venereology and Leprosy, at BLDE (Deemed to be University) Shri B.M. Patil Medical College and Research Centre, Vijayapura.

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LIST OF ABBREVIATIONS

PMD- Potentially malignant diseases

SCC- Squamous cell carcinoma

LP - Lichen planus

PL- Polarized light

NPL- Non Polarized light

DLE- Discoid Lupus Erythematosus

FDE- Fixed Drug Eruptions

LE - Lupus Erythematosus

SJS- Steven Johnson Syndrome

CMN- Congenital Melanocytic Nevus

ABSTRACT

Background- Lips are highly susceptible to environmental effects so common oral mucosal lesions are seen over the lips. Few studies have been carried out till now to estimate the prevalence of lip lesions exclusively. Dermoscopy is a link between macroscopic clinical dermatology and microscopic dermatopathology and has the capability to avoid unnecessary excisional biopsy and extensive surgery.

Aims and objectives-

- To assess the prevalence of lip lesions in South India region.
- To study the clinical and dermoscopic features of various lip lesions.

Materials and methods- It is an hospital based cross-sectional study of patients presenting with various lip lesions. Patients were subjected to detailed clinical and dermoscopic examination and categorized into neoplastic and non-neoplastic groups. Non-neoplastic were further sub-categorized into inflammatory, infections, pigmentary lesions. Punch biopsy was done if necessary.

Results- Among 37589 patients attending dermatology OPD during the study period , 150 patients had various lip lesions with prevalence of 0.40 . Age of the patients ranged from 4-79 years. Non-neoplastic lesions were commonly seen(122 patients), than neoplastic(28 patients). 25 cases required biopsy to reach final diagnosis. Of 150 patients with various lip lesions, most of them were lichen planus (30%), followed by contact cheilitis (13%), actinic cheilitis(9.33%), herpes labialis(8%). Radial Wickham striae was the most common pattern seen, followed by linear pattern.

Conclusion-

The prevalence of lip lesions was 0.40 Lichen planus was the prevalent lesion in the study(30%) with radial Wickham striae being the most common pattern.

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INTRODUCTION

The lips (labia oris) are two fleshy folds that surround the orifice of the mouth[1]. Lips are the structures that surround the oral aperture.

In the centre, the superior border corresponds to the inferior margin of the base of the nose. The inferior limit of the lips in the central region is the mento labial sulcus. Laterally followed by the alar sulci. Upper and lower lips join at the oral commissures. The philtrum and its pillars form part of the upper lip.

Surface of the lip is comprised of four zones :

1. The Hairy skin
2. Vermilion border - The rim of paler skin that demarcates the vermilion from the surrounding skin.
3. Vermilion - The red part of the lips, covered with a specialized stratified squamous epithelium, which is in continuity with the oral mucosa of the gingivolabial groove. Confusingly, sometimes the vermilion itself is also often referred to as the lips.
4. Oral mucosa.

The normal shape of the lips varies with age and is also influenced by ethnicity. The ideal ratio of the upper-to-lower lip is 1:1.6[1].

Lips are highly susceptible to environmental effects, because of their poor skin barrier function and low water retaining capacity.

Few Large-scale population-based screening studies were carried out and have identified lip lesions to be the most common oral mucosal lesions; however, few studies have been carried out to estimate the prevalence of lip lesions exclusively.

Various epidemiological studies have been done around the globe to report the prevalence of oral mucosal lesions in different populations. However, fewer studies have been done to estimate the prevalence of lip lesions.[2] The present study aims to highlight the diversity of lip lesions, their clinical and dermoscopic features and to determine their prevalence in North Karnataka region.

Dermoscopy is a link between macroscopic clinical dermatology and microscopic dermatopathology. Dermoscopy can avoid unnecessary excisional biopsy.[3]

Dermoscopy is non-invasive technique used for examination of skin pigmented and non-pigmented lesions. It is performed with a handheld instrument called dermoscope, which allows visualization of subsurface skin structures in the epidermis, dermo-epidermal junction and upper dermis that are not visible to naked eyes.[3]

Dermoscopy has significantly improved the diagnostic accuracy of pigmented and non-pigmented skin lesions. It as a promising adjunctive to for diagnosis.

It reduces the number of differentials of a lesion. Dermoscope ia so called – A Dermatologist's Stethescope. [4]

AIMS AND OBJECTIVES OF THE STUDY

- To assess the prevalence of different types of lip lesions in South India region
- To study the clinical and dermoscopic features of lip lesions.
- To correlate clinical and dermoscopic features of different lip lesions.

REVIEW OF LITERATURE

Lips are the site of clinical and pathological changes caused by wide spectrum of etiologies.

This anatomical site can host up to 25.7% of oral lesions, 12% of the head and neck cancers. Lip lesions can act as an indicator of the presence of underlying systemic disease.[2]

The prevalence of lip lesions in Indian population is 18.8%.[5]

An important fact that must be considered for early diagnosis of lip lesions is the knowledge of their relative occurrence frequency.

Previous studies:

- Bansal S, Shaikh S, Desai RS, Ahmad I *et al*. in a study related to the spectrum of lip lesions in tertiary care hospitals inferred that the prevalence of 18.8 %. The lower lip was the most affected site , and potentially malignant diseases (PMD) were the most common lesions. [2]

- Study by Patil S, Maheshwari S on the Prevalence of lip lesions in an Indian population aged 8-70 years found out that the prevalence of lip lesions was 18.8%. The most commonly diagnosed lesions were of infections>mucocele>premalignant lesions. The relatively high prevalence of lip lesions suggest that practitioners should have adequate knowledge about the etiology, their clinical features, diagnosis, and management of lip lesions.[5]

- Olszewska M *et al* reviewed the current knowledge about the characteristic dermoscopy features of pigmented lesions of the oral cavity membranes and lips. A major advantage of a dermoscope is its capability to avoid unnecessary biopsy, the necessity to strengthen research, which would result in clear-cut dermoscopy criteria for mucosal melanoma, and the need for constructing thin flexible dermoscopes for investigating oral mucous membranes.[3]

- A retrospective 11-year study on lip lesions on patients attending an oral diagnostic center between 2006-2016 by Barros CC *et al*. concluded that the most frequent lesions in the sample were mucocele, followed by actinic cheilitis. The lower lip is most affected. Only 3.6% of 587 cases showed recurrence.[6]

- Elmas ÖF *et al* studied the dermoscopic features of lower lip squamous cell carcinoma: A descriptive study including 13 histologically proven SCC concluded that white and milky red structureless areas, blood spots on thick keratin scale, and polymorphous vascular patterns are the main dermoscopic clues to doagnose lip SCC.[7]

- 2020 Neema *et al* studied dermoscopy of lip lichen planus: A descriptive study including 12 biopsy-proven patients of lip LP. The study gives knowledge about dermoscopic features of lip LP. Wicham striae, pigmentation, and telangiectasia, are specific clues of lip LP. [8]

DERMOSCOPE

Dermatoscopy, sometimes referred to as dermoscopy, incident light microscopy, epiluminescence microscopy, or skin-surface microscopy, is a low-cost, non-invasive in vivo method that makes it possible to see morphologic characteristics that are invisible to the unaided eye.[9]

German dermatologist Johann Saphier (1920) introduced the term “dermatoscopy”. The term “dermoscopy” was later coined by Goldman. The first dermoscope was developed in 1989 by Stolz and Braun- Falco[10].

The dermoscope is a mobile, non-invasive diagnostic tool that enlarges some skin substratal structures that are unseen to the unaided eye or even a magnifying lens, as well as the tiny surface features of skin lesions..[11] It connects macroscopic clinical dermatology with microscopic dermatopathology.[12]

Pigmented and non-pigmented lesions can be diagnosed with a higher sensitivity and specificity by a dermoscope as compared to clinical examination. This obviates the need for unnecessary excision of benign skin tumours and early detection of malignant tumours.

Other added advantages of dermoscopy are:

- It is easy to use and is less time consuming.
- It is an office procedure that facilitates quick interpretation of skin lesions.
- Helps the observer to focus on the lesion and to isolate the suspicious foci within larger lesions.
- Precisely defines the border of some lesions for better pre-surgical margin mapping.
- Can be used for post-treatment follow-up as well as periodic monitoring of any changes in tumours.
- Provides facility for storage of images for future analysis and comparison.

This diagnostic aid must be used in conjunction with thorough clinical history and examination of skin lesions. Clinical examination with dermoscopy, depending on the type of skin lesion and the clinician's experience, can improve diagnostic accuracy by 5% to 30% as compared to clinical visual inspection alone[13]

Principle of dermoscope:

The basic method of dermoscopic visualisation involves using lenses to enlarge skin lesions and several types of light sources to illuminate them.[14] Depending on the type of skin, any light beam passing through it will usually be refracted, diffracted, reflected, or absorbed. (Figure 1).[15]

In dry scaly skin, the light gets reflected whereas in smooth oily skin the light reaches the deeper dermis and hence improves the visibility of the skin sub-surface. The latter principle is used in case of contact technique dermoscopy, which helps to visualize the skin lesions after the application of linkage fluids like oil (immersion oil, olive oil and mineral oil), water, an antiseptic solution, glycerin, gels[16].

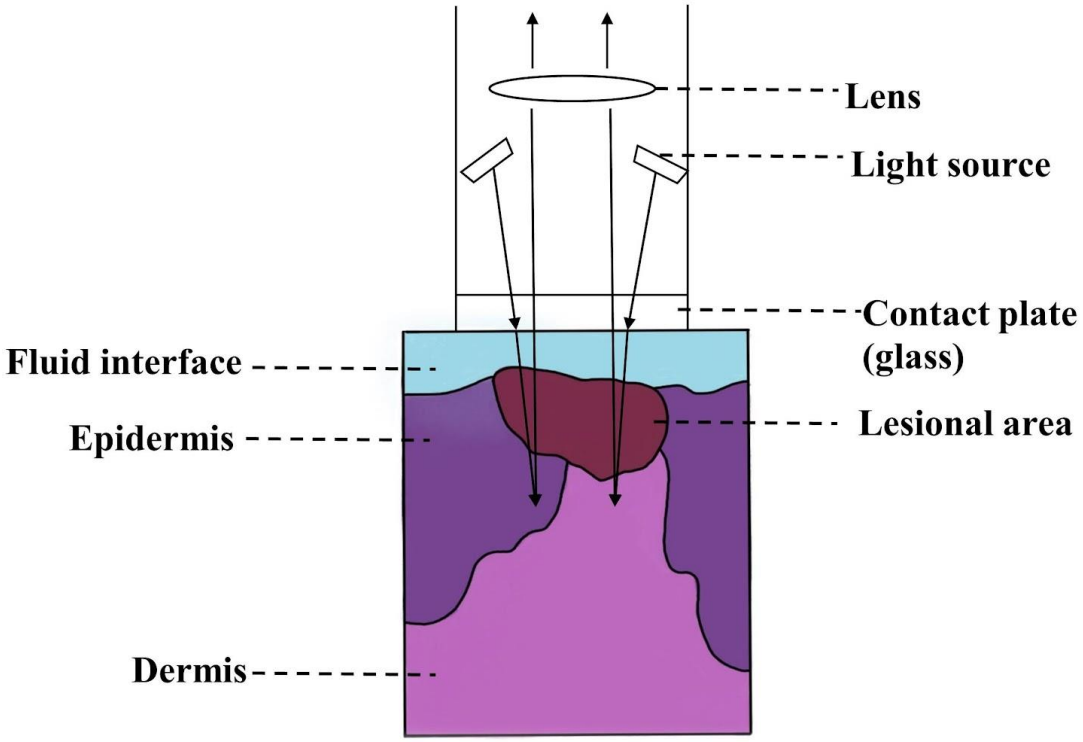


Figure 1: Optics of light in dermoscope

The skin lesion's surface and subsurface areas are illuminated by light from a source that is magnified by a lens. The fluid interface between the dermoscope and the skin surface improves light penetration into the lesion

Parts of dermoscope:[11,12]

A. *Achromatic lens*: Most dermoscopes have a 10X magnification. However, a video-dermoscope can attain magnifications of up to 1000X.

B. *In-built illumination system:* Compared to traditional halogen lights, which emit yellow light, light-emitting diodes (LEDs) are the standard sources for high-intensity white light utilising 70% less energy.

C. *Power supply:* This portable equipment is battery-powered or has rechargeable handles

D. *Contact plate*: The components of the contact technique dermoscopy are large contact plates (20 mm in diameter) and small contact plates (8 mm in diameter). 2% glutaraldehyde or methylated spirit can be used to sterilise the multi-located silicone glass used in the contact plates.

The purpose can also be achieved by boiling or autoclaving for five minutes at 134^0 C. These plates come in both graded and non-graduated varieties, some of which have scales.

E. *Display system*: Unlike the video-dermoscope, which can be connected to a computer or other displays or even have its own screen, the hand-held dermoscope has a see-through viewing window.

F. *Inbuilt photography system*: Except for the hand-held dermoscope, these now constitute a vital part of a dermoscope. The camera could be an integrated video camera, an attachable conventional or digital camera, or both. In the former situations, supporting software is implemented for capturing images, storage, retrieval, analysis.

Technique of dermoscopy

The dermoscope can be used either by contact or non-contact techniques. In contact technique dermoscopy, using the non-polarized light (NPL), the glass plate or contact plate is applied to the surface of the lesion with an interface fluid. In non-contact technique, using the polarized light (PL) there is no contact with the skin surface, which gives an added advantage of avoiding nosocomial infections[18]

While NPL provides greater imaging of tissues that are more superficial, polarized light provides better visualization of those that are placed deeper in the skin.

Given that the dermoscope makes it easier to see skin in a horizontal orientation, blood vessels that run parallel to the skin's surface are shown as lines, and those that run perpendicular to the skin's surface are shown as dots or loops. The non-contact approach does not squeeze the vascular architecture, making vessels easier to visualize[20]

IMMERSION FLUID

The literature provides reports on the use of several immersion liquids. Water-based gels, oils, disinfection solutions, and water comprise the four categories of immersion liquids.[11,21]

The characteristics of an optimal immersion liquid are:

- Obtainable with ease
- Allows the structural parameters of the lesion to be well seen
- Remaining color-neutral, inexpensive
- Fewer air bubbles and less volatility

- Suitable for use in specific areas such as the mucosa, around the eyes
- Not producing an overly bright or matte images
- Immersion oil is a better choice for an immersion fluid in visualizing the pigment network. Ultrasound gel or immersion oil can be employed for structural elements other than pigment networks. Ultrasound gel is a preferable option to immersion oil for dermoscopic inspection of non-pigmented skin lesions. In inflammatory dermatoses, alcohol is more beneficial and may slow the spread of infections. Ultrasound gel can be used for dermoscopy of solid curving areas, particularly at the edge of the nail plate.[23] It is also appropriate for assessing the mucosa, nail bed, genitalia, and eyelids.

Limitations of dermoscopy:[24,25]

Since, dermoscopy is a non-invasive procedure, there are very few potential side effects. The sole drawback is the extremely slim chance of patient-to-patient cross-infection, particularly when using contact dermoscopy. There are numerous ways to avoid the chance of cross-infection:

1. Application of non-contact polarised dermoscopy
2. After each patient examination, use isopropyl alcohol to disinfect the USB video-dermatoscope's rim or lens

Usage of disposable transparent lens shielding material, such as cling film or soft plastic covers over the instrument; these caps are now included free of charge with most high-quality dermatoscopes and can be used with USB and handheld video dermatoscopes.

Minor issues worth consideration[24]

1. Dermoscopy artefacts that could be interpreted incorrectly should be avoided. Vermillion powder, colored powders, dust particles, hair dye, henna, hair fibers, minoxidil crystals, hair styling gel, etc. are common artifacts in trichoscopy; in onychoscopy, common artifacts include nail paint and varnish, as well as topical applications, especially sunscreen and makeup ingredients. Hence thorough prior cleaaning of the area is advised.
2. Colour disparity amongst devices: Images obtained with various dermatoscopes typically have a slightly different colour balance. That is something to be mindful of.
3. Differences between Fitzpatrick skin types: It is now clear that many characteristics that are easy to recognize in Fitzpatrick skin types I–II are either invisible or hard to spot in darker skin types. The colors (black, brown, grey, and blue) that originate at the histology level are hard to perceive and comprehend on

people with dark skin. Given that ethnic skin conditions frequently exhibit post-inflammatory hyperpigmentation, brown pigmented structures on dermoscopy should be interpreted with caution.

4. Absence of "dermoscopic nomograms": To be an expert in histopathology interpretation, one needs to be well-versed in normal histology, accounting for expected physiological differences resulting from age, gender, and specific body parts. For instance, many vessels are visible in the buccal mucosa's normal mucoscopic images; this is not to be mistaken for a malignant characteristic. To reduce errors in the interpretation of dermoscopic structures, an image library including such site-specific and skin type-specific dermoscopic monograms is desperately needed.

MAJOR CATEGORIES OF DERMOSCOPIC CRITERION:

Dermoscopically, each disease can be identified based on one or two distinguishing features. A "predominant" criteria is a structure that is more noticeable than other coexisting structures in the larger section of a lesion. When performing a dermoscopy, the following are the most important variables to consider:

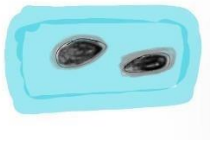
Color: It is the melanin in the skin, whether inside the melanocytes, nevic cells, or keratinocytes that determines the color in dermoscopy (Figure 2)[15] The other important chromophore is the hemoglobin[26]

Figure 2. Colors in dermoscopy: different contrasts of the colors imparted by the three essential chromophores of the skin namely keratin, melanin and hemoglobin[27]

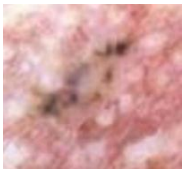
Dermoscopic structures:

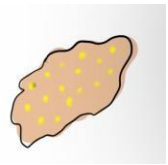
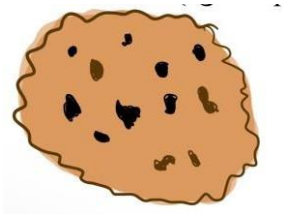
The appearance of melanin as clusters within different cells, in isolation, or concentrated around the edge of the lesion also helps to identify certain "structures." Similarly, haemoglobin distribution within the lesion dictates the vascularization patterns and structures (Table 1).[10,]

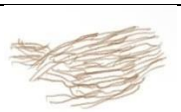
Table 1: Few dermoscopic structures and their histopathological correlation

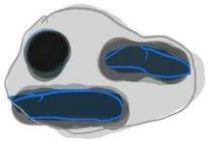
Pigment network	- Honeycomb like network consisting of pigmented lines (rete ridges) and hypopigmented holes (dermal papillae).
Dots 	- Small round structures < 0.1mm in diameter - Represents focal melanin accumulation in the upper part of the epidermis.

Globules 	- Symmetrical round to oval well-demarcated structures > 0.1mm in diameter. - Represent melanocytes, clumps of melanin and/or melanophages situated in lower epidermis, dermo-epidermal junction, or in the papillary dermis.
Branched streaks	- An altered pigment network - Represents remnants of pigmented rete ridges and bridging nests of melanocytic cells within epidermis and papillary dermis.
Radial streaming	- Fringe type structure at periphery of lesion. - Representing confluent pigmented junctional nests of pigmented melanocytes.
Pseudopods 	- Finger-like projections of dark pigment at periphery of lesion. They may have knobs at their tips. - Correspond to intra-epidermal or junctional confluent radial nests of melanocytes.

Streaks 	- Term used interchangeably with radial streaming or pseudopods. - Can be irregular or regular.
Structureless areas 	- Amorphous or homogenous areas devoid of any dermoscopic structures. - Usually hypopigmented.
Blotches 	- Large collection of melanin pigment localized throughout epidermis and/or dermis visually obscuring the underlying structures.
Regression pattern 	- White scar like depigmentation or peppering (speckled multiple blue-gray granules within a hypopigmented area). - Shows fibrosis.

Blue-white veil 	- Irregular, indistinct, confluent blue pigmentation with an overlying white, ground-glass haze. - Correspond to aggregation of heavily pigmented cells or melanin in dermis with compact orthokeratosis.
Milia like cysts 	- Round white or yellowish structures that shine brightly under NPL. - Correlate with intraepidermal keratin filled cysts.
Comedo-like openings (crypts, pseudofollicular openings) 	- Blackhead like follicular keratin plugs on surface of lesion. - Corresponds to keratin filled invagination of epidermis.
Fissures and ridges 	- Irregular, linear keratin filled depressions. -
Fingerprint-like structures	- Tiny ridges running parallel.

	
Moth eaten border 	- Concave borders
Leaf-like areas(maple leaf like areas) 	- Brown to gray-blue discrete bulbous blobs forming a leaf like pattern.
Spoke wheel-like structures 	- Well circumscribed, brown to gray-blue-brown, radial projections that meet at darker brown central hub.

Blue-gray ovoid nests 	- Large, well circumscribed, confluent or near confluent pigmented ovoid areas, larger than globules.
Multiple blue-gray globules 	- Round, well circumscribed structures.
Chrysalis	- White shiny streaks due to increased dermal collagen.
Ulceration 	- Absence of epidermis, not associated with a history of trauma seen as large, irregular shaped, dull red or red-brown structureless areas.

VESSEL PATTERNS:

Table 2: Vessel morphologies

VASCULAR MORPHOLOGY	**DESCRIPTION**	**DIAGRAM**
Arborizing vessels or telangiectasias	Large primary vessels that divide into smaller secondary vessels	
Hairpin vessels	Vessels that curve back on themselves ,forming loops.	

Crown vessels	Peripheral vessels that rarely branch and do not cross the centre of the lesion.	
Comma	Thick linear curved lines with few branches and occasionally having one end thicker than the other.	
Dotted	Small red dots closely aligned to each other in a highly regular pattern.	
Glomerular	Tortuous capillaries often clustered together resembling the glomerular apparatus of the kidney	

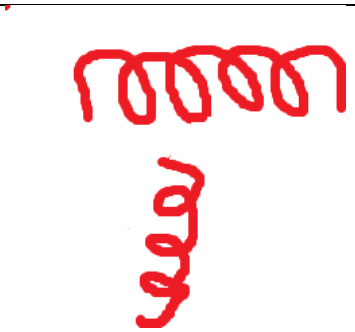
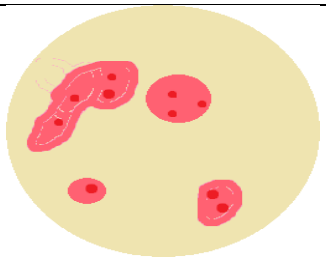
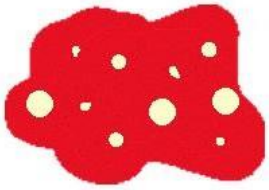
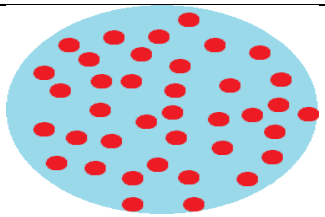
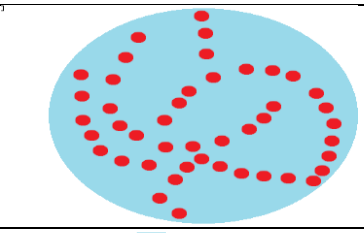
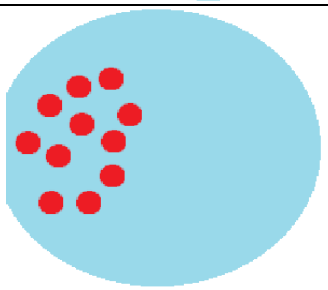
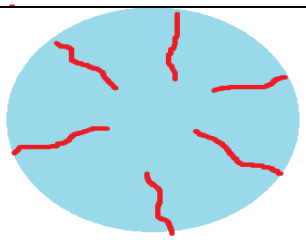
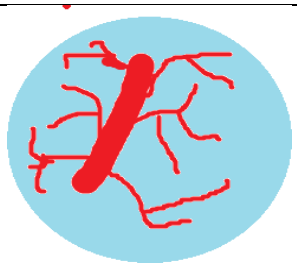
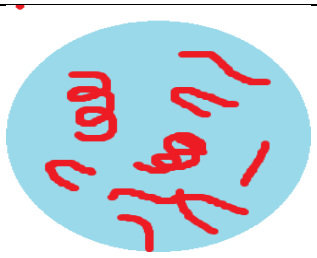
Corkscrew	Spiral vessels with irregular linear pattern.	
Milky-red areas/globules	Unfocused milky-red colour usually typically associated with elevated part of lesion	
Strawberry pattern	Structureless erythematous areas with whitish areas in between creating a type of pseudo network	
Linear irregular	Straight vessels that differs in shape and size	
Polymorphous	Various vascular patterns within the same lesion.	

Table 3: Vessel distributions

VESSEL PATTERN	DESCRIPTION	DIAGRAM
Regular	Vessels distributed equally all over the lesion	

String of pearls	Dotted vessels arranged linearly in a a string of pearl pattern.	
Clustered	Tendency to cluster together in a lesional area	
Radial	Vessels located at periphery of lesion which does not cross or occupy the centre.	
Branching	Large vessels branching into smaller ones.	
Irregular	Vascular polymorphism lacking a specific pattern	
Rope-ladder pattern	Short slightly dilated loops that arise from edges of scar and cross it completely.	

VARIOUS LIP LESIONS

Lips are the site of clinical and pathological changes related to a wide spectrum of etiologies. This anatomical site can host up to 25.7% of oral lesions, 12% of the head and neck cancers. Lip lesions can act as an indicator of the presence of underlying systemic disease.[1]

The prevalence of lip lesions in Indian population is 18.8%.[2]

An important fact that must be taken into consideration when diagnosing lip lesions is the knowledge of their relative occurrence frequency.

Table 4: CLASSIFICATION OF LIP LESIONS

Category	Sub-category	Conditions
Non-neoplastic	Inflammatory	Lichen planus
		Contact cheilitis
		DLE
		Angular cheilitis
		FDE
		Granulomatous cheilitis
		LE
		Inflammatory edema
		Pemphigus vulgaris
		SJS
		Traumatic
	Infectious	Herpes labialis
		Impetigo
		Wart
	Pigmentary	Vitiligo
		Labial melanosis
Neoplastic	Benign	Pyogenic granuloma
		CMN
		Labial melanotic macule
	Pre-malignant	Actinic cheilitis
		Benign squamous papilloma

	Malignant	SCC

DERMOSCOPIC FINDINGS OF COMMON LIP LESIONS ::

The dermoscopic diagnosis of a lip lesions is based on a stepwise algorithm that considers vascular morphology, the architectural pattern of blood vessels and presence of additional dermoscopic features.
In the following section, clinical and dermoscopic features of various common lip lesions have been discussed.

ACTINIC CHEILITIS

Actinic cheilitis is an oral potentially malignant disorder(by the WHO 2020 Collaborating Centre for Oral Cancer Workshop) caused by UV radiation leading to damage to epithelial keratinocytes of the lips. It predominantly affects the vermillion border of the lower lip.
It was first described in 1923 as solar-induced chronic inflammatory disorder of the lips
Premalignant lip keratosis caused by chronic sun exposure (ultraviolet radiation)
Causes - Hot, dry climates, outdoor occupations (sailing, agriculture, construction, beach-related work, etc.), and light-skinned individuals (skin phototype I) or those genetically more susceptible to solar damage, smoking, lip irritation, poor oral hygiene.[28]

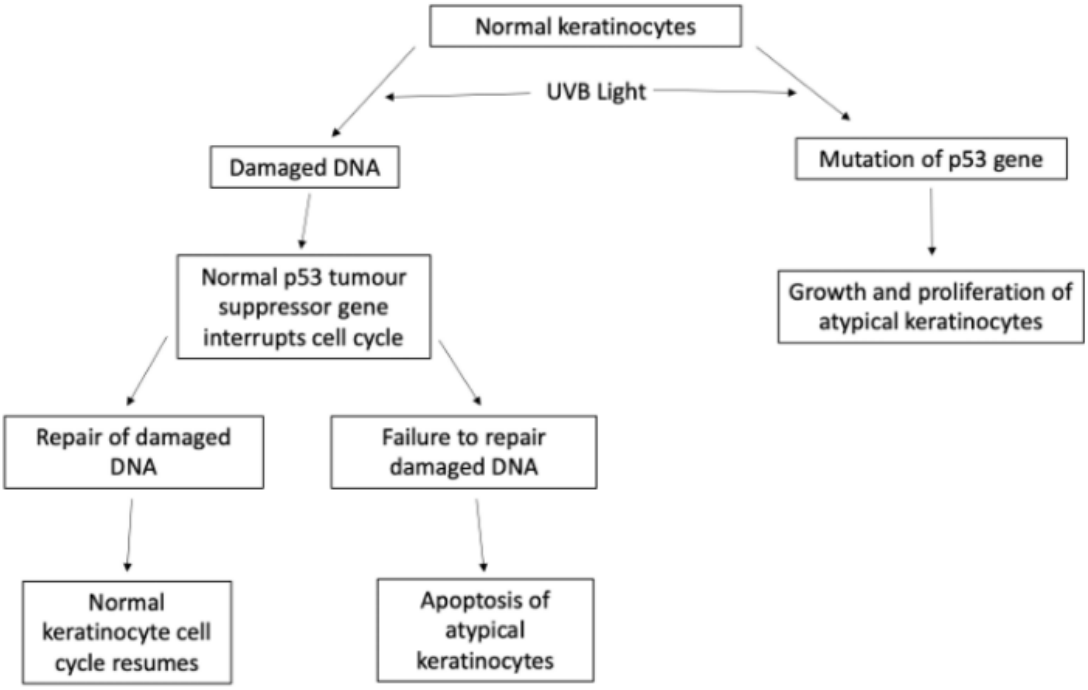


Figure 3: Effect of UVB light on the keratinocyte cell cycle adapted from Wood et al.[29]

Older or middle-aged males(4th to 8th decade).

Commonly seen on the lower lip with a whitish discoloration and painless thickening along the edges; over time, the sharp border of the lip becomes less clear.

Dry, atrophic, erythematous, scaly, and indurated lip lesion appears, usually solitary, although multiple lesions can also be seen.

Potentially malignant disorder, and can progress to severe dysplasia or squamous cell carcinoma.[30]

Dermoscopy of actinic cheilitis shows white-red background, ulceration, blood spots, white lines , white structureless areas, white scales, vascular polymorphism[31]

HERPES LABIALIS

Herpes labialis is a mild, self-limiting infection with herpes simplex virus type 1 (HSV-1) causing pain, redness, blistering over the lips and perioral region. Fever and other constitutional symptoms are rare.

Various factors including exposure to bright sunlight, fatigue, psychological stress, fever, menstruation, or trauma to the area of primary infection can precipitate a recurrence.

In most people, herpes labialis is a mild, self-limiting illness. Recurrences are usually lasting shorter and less severe than the initial attack. Healing is usually complete in 7 to 10 days without scarring. Herpes labialis can cause serious illness in immunocompromised people.[1]
The majority of the primary infections result from direct exposure to bodily fluids such as saliva or exudates of progressive lesions, and proximate contact with lesions of infected individuals. In addition, the transmission of the virus can also occur via kissing or sharing of towels/utensils.[2]
Dermoscopy of herpes labialis in evolving stage shows round or polylobular cloudy white structures corresponding to spongiotic changes, with white lines surrounded by pink halo. Also shows greyish globular structures with brown dots corresponding to necrotic pigmented epithelium over regenerating non pigmented structures.
Late and healing stage shows yellow-brown areas with red dots and minimal scales.[34]

LICHEN PLANUS

Lichen planus (Greek leichen, “tree moss”; Latin planus, “flat”) is a common inflammatory condition that can affect any ectodermal-derived tissue.
It is an idiopathic T cell–mediated process without a clear autoantigen.
The worldwide prevalence of lichen planus is approximately 1%.
The lesions of lichen planus are well-marginated, dull red-violet, flat-topped, polygonal papules. The papules are grouped and often coalesce into plaques.
Wickham striae are highly characteristic in lichen planus and are more easily visualized with dermoscopy.
The distribution is symmetrical and grouped lesions affect the flexural aspects of the arms and legs.
Variants are based on configuration, morphology of lesion, and site of involvement[35]
Dermoscopy features- Pearly white streaks (wickham striae) arranged in

- Linear,
- Leaf-venation,
- Globular,
- Reticular,
- Annular,
- Star-burst,
- Radial,

Pink or violaceous background

Scattered brown dots/globules

Dotted and linear vessels(typically running from centre towards periphery)

Yellow areas

White scales[36]

LABIAL MELANOTIC MACULE

Labial melanotic macules (LMMs) are benign pigmented lesions that usually take the shape of flat asymmetrical macules with tan-brown to black color and variable size. [37]

These are commonly encountered in daily practice.

LMMs are asymptomatic, discrete, tan-brown to black lesions, which are usually less than 1 cm in maximum dimension.[38]

Dermoscopic features[39]

- Background brown pigmentation
- Parallel lines
- Circle lines
- Overlapping vessels
- Structureless black pigmentation

Landscape painting patterns : characterized by (1)+(2)+(3)

1)Background brown pigmentation

2)Parallel lines or circle lines

3)Overlapping vessels

SQUAMOUS CELL CARCINOMA

Squamous cell carcinoma (SCC) is the second most common skin cancer, after basal cell carcinoma, in immunocompetent white individuals, and the most common skin cancer in immunosuppressed organ transplantation recipients worldwide.

SCC development in the skin is considered a multistep process, most invasive SCCs develop from preinvasive lesions or in situ tumors such as actinic keratosis or Bowen disease.

Risk factors for SCC include ultraviolet (UV) radiation, genetic predisposition, physical and chemical carcinogens, immunosuppression, drugs, viral infection, chronic inflammation, and chronic injury of the skin.

SCC of the lip occurs on the lower lip more often than on the upper lip, because the lower lip, along with the nose and cheeks, is regarded as one of the typical "sun terraces."80 Because SCCs on the lip and ear show higher rates of metastasis, tumors at these locations require special attention[40]

Dermoscopic features shows[41]

- White circles
- White clods
- White lines and white structureless areas
- Polymorphic vessels
- Hemorrhagic spots

Table 5 : Clinical presentation and dermoscopic features of few other lip lesions [42]

Lip lesion	Clinical feature	Dermoscopic feature
Contact cheilitis	Inflammatory lip reaction caused by the irritating or allergic effects of various substances Manifeststing as dryness, scaling, erythema or fissuring.	• White scales • Yellow crusts • Fissuring
DLE	Scaly discoid erythematous plaques with areas of scarring	• Follicular plugs • Perifollicular white halo • White rosettes • Telangiectatic vessels
Angular cheilitis	Typically manifests at the corners of the mouth/lips commonly seen with vitamin(B complex), mineral deficiencies(Zinc, Iron), drooling,	• White red background • Fissuring • White scales

	poor fitting dentures, candida albicans.	
FDE	erythematous single or multiple plaques with/without hyperpigmented center that leaves a gray-black postinflammatory pigmentation	• Erythema • Purpuric dots • Black dots
Granulomatous cheilitis	Chronic inflammatory swelling of the lips	• Yellow orange areas • Telangiectatic vessels
LE	Malar rash Erythematous scaly plaques	• Perifollicular white halo • White scales • Follicular plugs • White structureless areas • Telangiectatic vessels
Inflammatory edema	Transient swelling with ocassional itching and pain	• Pinkish background • Red dots • Short linear vessels
SJS	Erosin and hemorrhagic crusts	• Pink background • Purpuric dots • Black dots/necrotic areas • Erosion • Hemorrhagic crusts
Impetigo	Self limiting infectious condition Honey colored crusts	•

Wart	Well-defined hyperkeratotic papules/plaques with verrucous surface	• Dotted vessels with white halo(Frogspawn appearance) • Black dots
Pyogenic granuloma	Solitary smooth red papule or polyp that grows quickly over the course of time , stabilises. Friable, ulcerates frequently, bleeds profusely with minor trauma	• Red homogeneous area • White collarette • Multiple white rail lines • Various vascular structures • Ulceration • Hemorrhagic crusts
CMN	Dark smooth surface papule Present since birth	• Reticuloglobular pattern • Homogeneous blue areas

METHODOLOGY

SOURCE OF DATA

Patients presented to Shri B.M. Patil Medical College Hospital and Research Centre, VIJAYAPURA.

Period of study: The study was conducted during the period of September 2022 to May 2024

Study design: A hospital based, prospective cross-sectional study.

Sample size :

With anticipated prevalence of lip lesions in Indian patients 18.8 (ref) , the study would require a sample size of 70 subjects with 97% level of confidence and 10% absolute precision, using Statulator software (http://statulator.com/SampleSize/ss1P.html)

Statistical Analysis:

- The data obtained will be entered in Microsoft Excel sheet, and statistical analysis will be

performed using statistical package for the social sciences (Verson 20).

- Results will be presented as Mean ±SD, Median and interquartile range, frequency, percentages and diagrams.

METHOD OF COLLECTION OF DATA:

Inclusion criteria:

Patients presenting with lip lesions of any type ,irrespective of age, and gender will be enrolled for study after informed consent .

Exclusion criteria:

- Patients not willing to enroll for the study.
- Patients with inflammatory lip disorders who are on treatment or have received any form of treatment (topical and/or systemic) within the past four weeks.

Methods:

In this study, informed consent will be taken from all the patients with lip lesions.
These patients well be subjected to detailed clinical and dermoscopic examination.
In this study, a hand-held dermoscope (Dermalite DL3™, 3Gen Inc., San Juan Capistrano, CA, USA) will be used. Lesions will studied using both PL and NPL.
Dermoscopic observations will be recorded . A 4mm punch biopsy will be done if necessary.

Methodology:

Informed consent for the study will be undertaken from the patients. All subjects will undertake a complete clinical and dermoscopic examination.

All the patients will be subjected to a detailed clinical assessment in which history regarding onset, and duration of symptomatology of the disease will be recorded. Patients are examined for any change in the surface texture, color, or size of the lip, or with any specific lip lesions. The findings will be recorded.

For dermoscopy , a handheld dermoscope (Dermalite DL3™, 3Gen Inc., San Juan Capistrano, CA, USA) will be used. The technique employed will be polarized dermoscopy with interface fluid. Dermoscopic images will be recorded using a digital camera attached to the dermoscopy. Dermoscopic observations will be recorded as per the descriptive analytical terminologies for pattern analysis.

The data compiled will be categorized Patients were subjected to detailed clinical and dermoscopic examination and categorized into neoplastic and non-neoplastic groups.
Non-neoplastic were further sub-categorized into inflammatory, infections, pigmentary lesions.
Biopsy was done if necessary.
Data was compiled and statistically analysed.

ETHICAL CLEARANCE:

Institutional ethical commitee clearance was undertaken for the study

RESULTS

A hospital based cross-sectional study was conducted from September 2022 to May 2024

Among 37589 patients attending dermatology OPD at Shri BM Patil medical college during this period, 150 patients presented with various lip lesions ; with a prevalence of 0.40

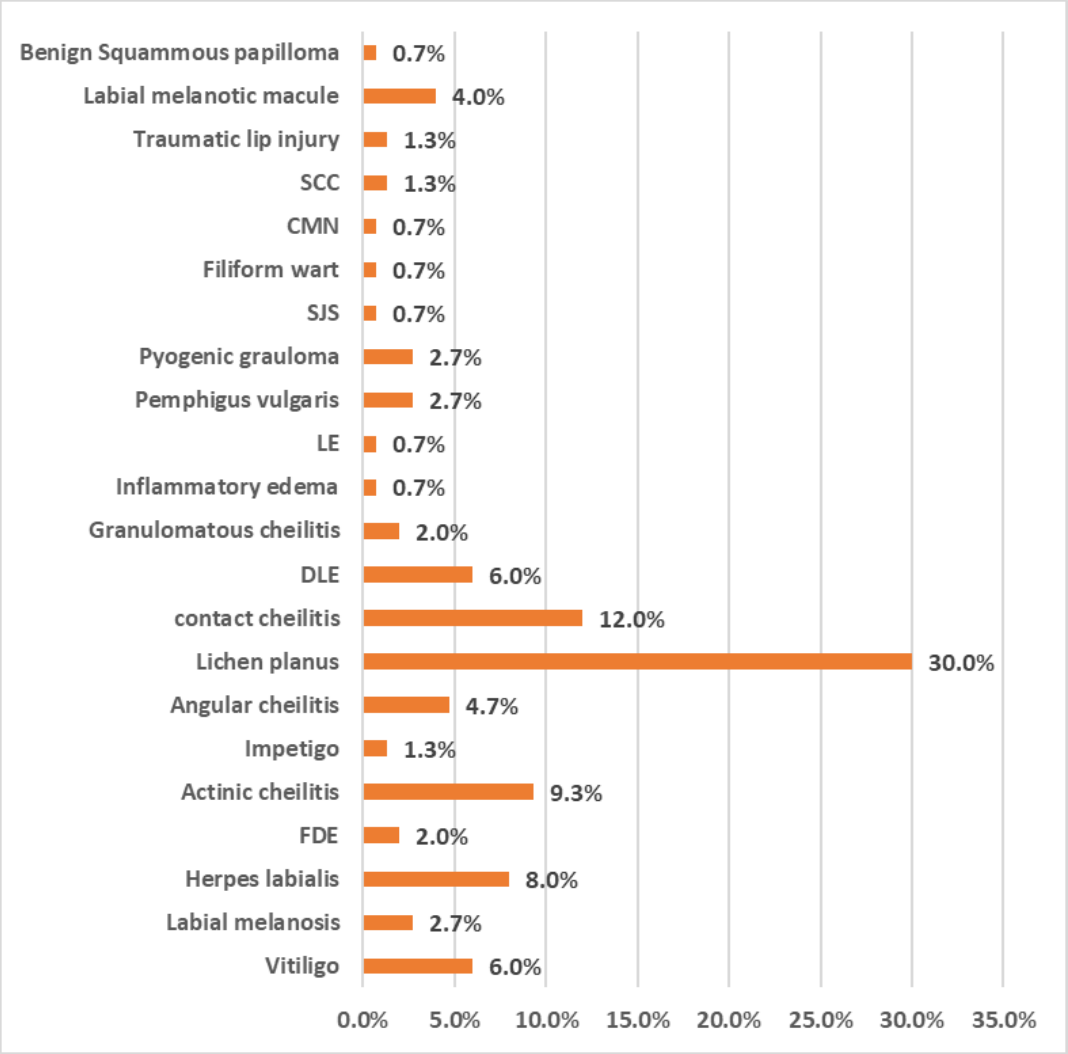
Table 6: Prevalence of Lip lesion			
Prevalence	**Total cases**	**Lip lesions (n)**	**%**
	37589	150	0.40%

TABLE 7 : DISTRIBUTION OF CASES

Based on clinical and dermoscopic examination, distribution of cases was as follows:

Lip lesions	No. of patients	Percentage
Lichen planus	45	30%
Contact cheilitis	18	13%
DLE	09	6%
Angular cheilitis	07	4.6%
FDE	03	2%
Granulomatous cheilitis	03	2%
LE	01	0.67%
Inflammatory edema	01	0.67%
Pemphigus vulgaris	04	2.6%
SJS	01	0.67%
Traumatic	02	1.33%
Herpes labialis	12	8%
Impetigo	02	1.33%
Wart	01	0.67%
Vitiligo	09	6%
Labial melanosis	04	2.67%
Pyogenic granuloma	04	2.67%
CMN	01	0.67%
Labial melanotic macule	06	4%
Actinic cheilitis	14	9.33%
Benign squamous papilloma	01	0.67%
SCC	02	1.33%
Total	150	

Figure 4 : Graphical representation of distribution of cases



AGE DISTRIBUTION OF THE LESIONS

Population in the age group between 11- 20 years constituted the majority of the study population with a maximum of 23 (19.83%) patients followed by 20 (17.24%) in the age group 21-30 years.

Table 8 : Frequency age distribution of Participants

Age group	Frequency	%
<= 10 Years	3	2%
11-20 Years	20	13.33%
21-30 Years	26	17.33%
31-40 Years	36	24%
41-50 Years	23	15.33%
51-60 Years	23	15.33%
61-70 Years	15	10%
71- 80 Years	4	2.67%
Total	150	100%

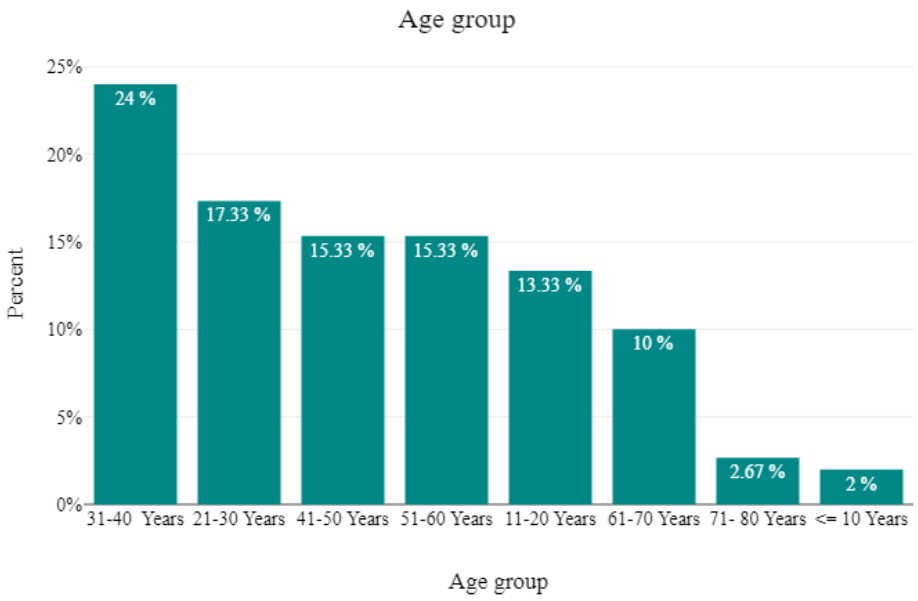


Figure 5: Age wise distribution of the participants

GENDER DISTRIBUTION

The study found a slightly higher prevalence of lip lesions in females compared to males:

- Females accounted for 54.30% (82 cases) of the patients.
- Males accounted for 45.03% (68 cases) of the patients.

Table: 9 Gender wise distribution of Participants

Sex	Frequency	%
Females	82	54.66%
Male	68	45.33%
Total	150	100

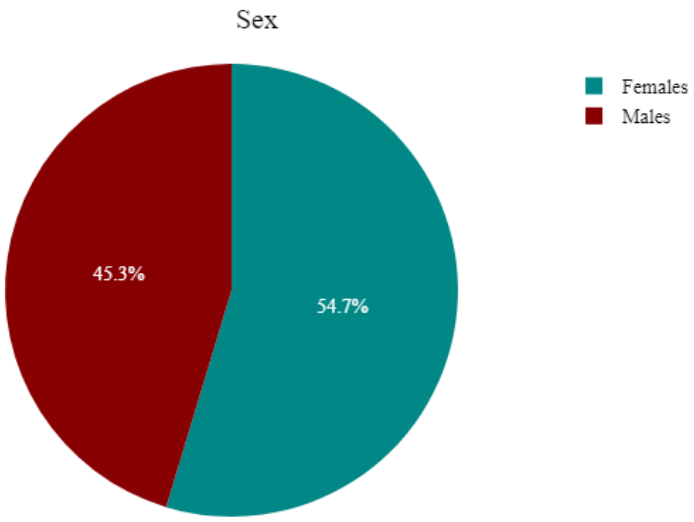
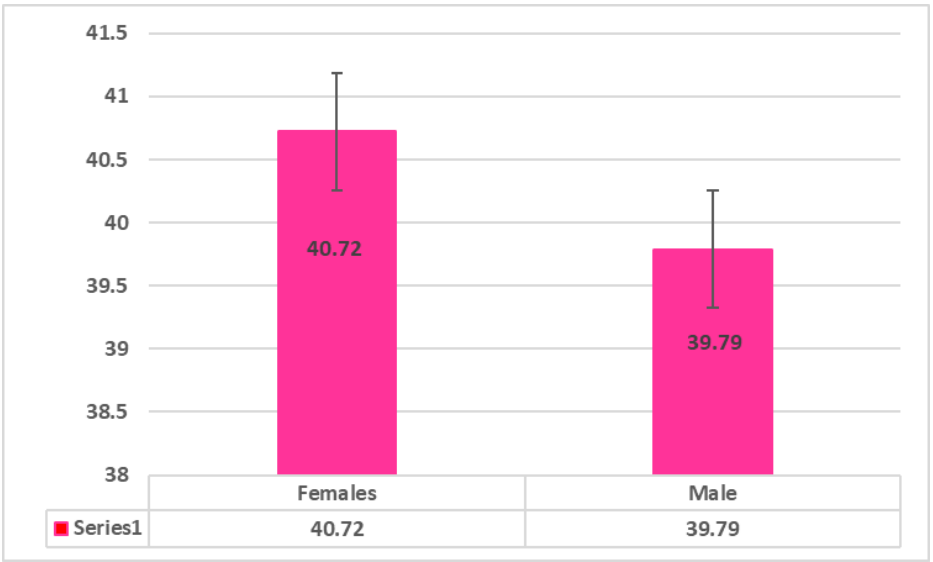


Figure 6: Gender wise distribution of participants

Table: 10 Mean age of participants according to gender				
Age		n	Mean	Std. Deviation
	Females	82	40.72	16.26
	Male	68	39.79	18.3

Figure:7 Mean age of participants according to gender



This table compares the mean age of female and male participants:

- Females: Mean age of 40.72 years with a standard deviation of 16.26 years.
- Males: Mean age of 39.79 years with a standard deviation of 18.3 years.

LESIONS CATEGORY DISTRIBUTION:

Table: 11 Types of Lesions			
Types	**Subtypes-lesions**	**n**	**%**
Neoplastic	Benign Lesions	8	5.50%
	Pre-malignant Lesions	15	10.50%
	Malignant	2	1.40%
Non-Neoplastic	Infectious	15	10.50%
	Inflammatory Lesions	90	62.00%
	Pigmentary	13	9.00%
	Total	143	100.00%

Figure 8: Graphical representation of distribution of cases based on tumor catergory

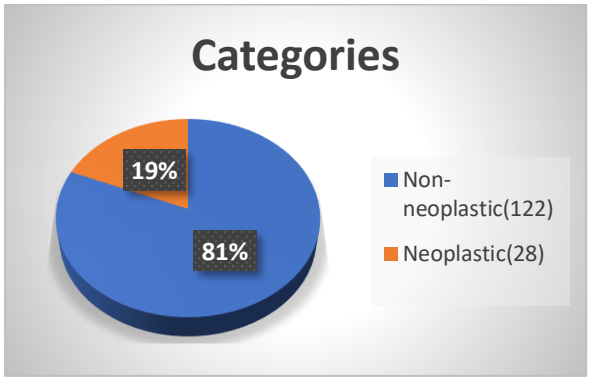
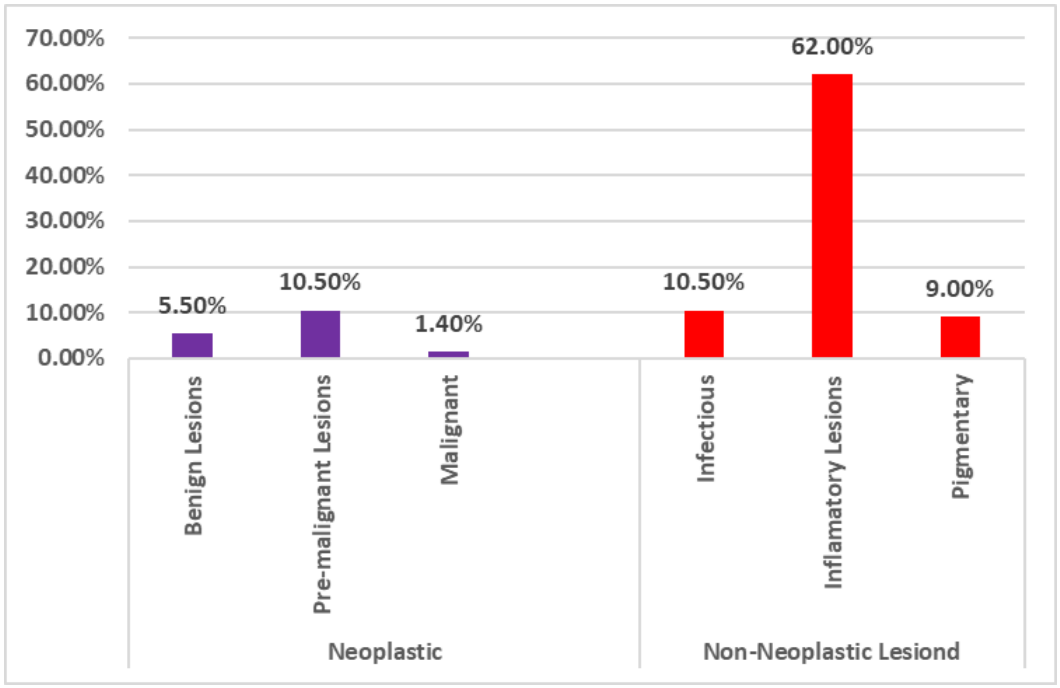


Figure: 9 Graphical representation of types of Lesions



Types of Lesions

This table categorizes the lip lesions into neoplastic and non-neoplastic types:

Neoplastic lesions:

- Benign lesions: 5.50% (8 cases)

- Pre-malignant lesions: 10.50% (15 cases)
- Malignant lesions: 1.40% (2 cases)

Non-neoplastic lesions:

- Infectious lesions: 10.50% (15 cases)
- Inflammatory lesions: 62.00% (90 cases)
- Pigmentary lesions: 9.00% (13 cases)

The majority of lip lesions were non-neoplastic, with inflammatory lesions being the most common type overall. Among neoplastic lesions, pre-malignant lesions were the most frequent.

SUB-CLASSIFICATION OF LIP LESIONS

Table: 12 Lip Lesions categories and Sub categories

Category	Sub-category	Conditions	No.	%
Neoplastic (28)	**Benign Lesions (11)**	Pyogenic granuloma	4	2.67%
		CMN	1	0.67%
		Labial melanotic macule	6	4%
	Premalignant Lesions (15)	Actinic cheilitis	14	9.33%
		Benign Squamous papilloma	1	0.67%
	Malignant (2)	SCC	2	1.33%
Non-Neoplastic (122)	**Inflammatory Lesions (94)**	Lichen planus	45	30%
		Contact cheilitis	18	13%
		DLE	9	6%
		Angular cheilitis	7	4.6%
		FDE	3	2%
		Granulomatous cheilitis	3	2%

		LE	1	0.67%
		Inflammatory edema	1	0.67%
		Pemphigus	4	2.6%
		SJS	1	0.67%
		Traumatic lip injury	2	1.33%
	Infectious Lesions (15)	Herpes labialis	12	8%
		Bullous impetigo	2	1.33%
		Filiform wart	1	0.67%
	Pigmentary Lesions (13)	Vitiligo	9	6%
		Labial melanosis	4	2.67%

Following are the findings among the most commonly encountered lip lesions:

DISTRIBUTION OF CASES OF ACTINIC CHEILITIS AND THEIR DERMOSCOPIC FEATURES:

A total of 14 cases were diagnosed clinically and dermoscopically as actinic cheilitis. There as a significant female preponderance (M=6, F=8). Most of the patients were in the age group of 36-55 years followed by 0-35 years. .

All the cases had white red background(n=14). Polymorphic vessel morphology was the most common(n=7). Other vessel patterns were less common. Yellow scales(n=7) were slightly more common than white scales. White structureless areas(n=7) were present in over half of the cases. Ulceration(n=14) was observed in all the cases making this a consistent and potentially crucial diagnostic feature for actinic cheilitis.

Table 13: Demographic details of patients with actinic cheilitis

	No. of cases (14)	% (out of total 14 cases)
Sex		
Male	6	42.9%
Female	8	57.2%
Age (Yrs)		
0-35	3	21.4%
36-55	8	57.1%
56-65	2	14.2%
≤66	1	7.1%

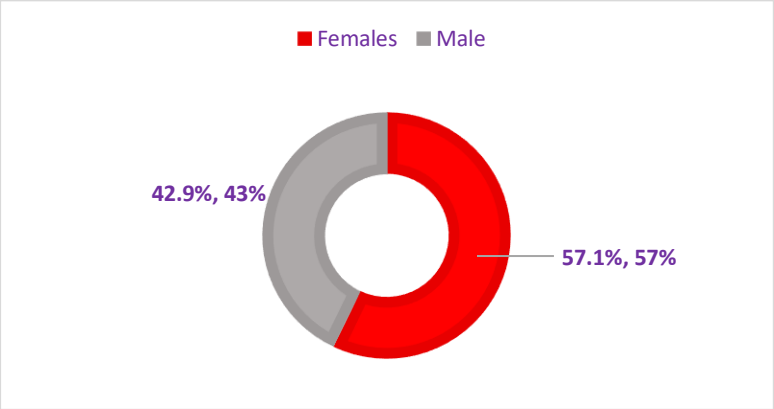


Figure:10 Gender wise distribution of cases of actinic cheilitis

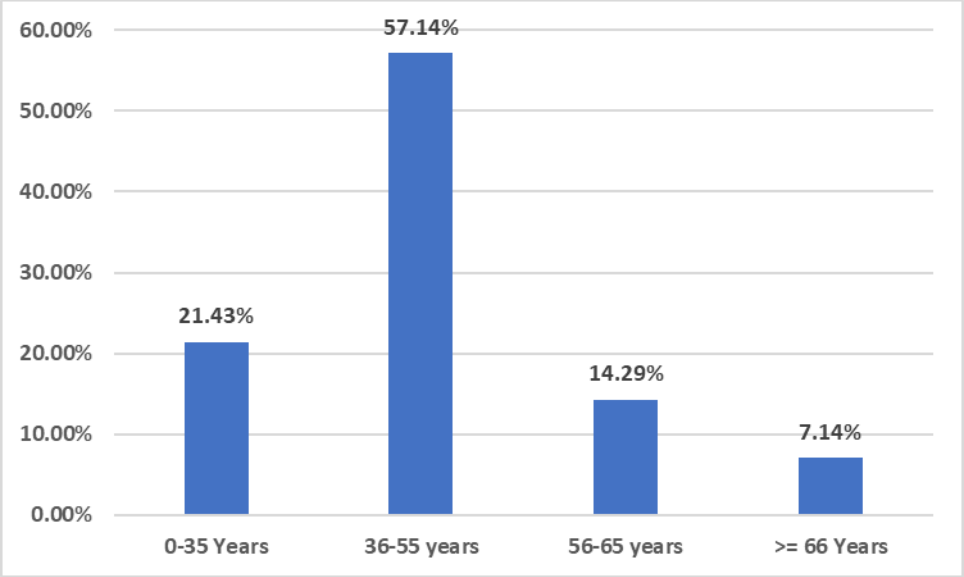


Figure 11 : Graphical representation of age wise distribution of Actinic Chelitis Patients

TABLE 14: DERMOSCOPIC FEATURES OF ACTINIC CHEILITIS

Scales color		
Absent	2	14.3%
White	5	35.7 %
Yellow	7	50.0 %
Background Colour		
White-red	14	100%
Vessel Type		
Absent	0	0
Linear vessels	2	14.3%
Dotted vessels	4	28.6%
Hairpin vessels	2	14.3%
Polymorphic vessels	7	50%
Vessel Distribution		
Absent	0	0
Diffuse	5	35.7%
Periphery	5	35.7%
Clustered	4	28.6%

Other Features		
Keratin halo	1	7.1%
White structureless areas	5	35.7%
White lines	0	0
White globules	0	0
Ulceration	14	100%

LICHEN PLANUS

Out of 150 patients with lip lesions, 45 patients had lichen planus. Majority of the patients were females(n=26) and patients of age group 36-55 years(n=17) were slightly more prevalent than patients of age 0-35 years (n=15).

The violaceous (purplish) background(n=32) was by far the most common, which is a characteristic feature of lichen planus. Red background(n=11) was the second most common. Peripheral distribution(22) of vessels was the most common pattern, seen in over half of the cases with visible vessels.

Dotted vessels(n=35) were the most common morphology, either alone or in combination with other patterns. This is consistent with the typical appearance of lichen planus under dermoscopy.

White scales(n=36) were overwhelmingly the most common type observed, which is typical for lichen planus.

Brown globular pigmentation(n=16) was the most common, but violaceous (purplish) features(n=16) were also frequently observed, consistent with the overall pigmentary change in lichen planus lesions.

Wickham striae, a hallmark of lichen planus, were present in 95.5% of cases.

All patterns of wickham striae were encountered, of which radial pattern(n=14) was most common followed by linear wickham striae(n=12).

Table 15: Demographic details of patients with Lichen planus

	No. of cases (45)	**% (out of total 45 cases)**
Sex		
Female	26	57.78%
Male	19	42.22%
Age (Yrs)		

0-35	15	33.33%
36-55	17	37.78%
56-65	6	13.33%
≤66	7	15.56%

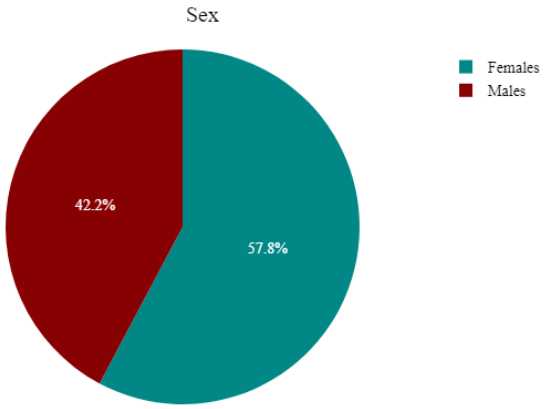


Figure 12: Graphical representation of Gender wise distribution of Lichen Planus Patients

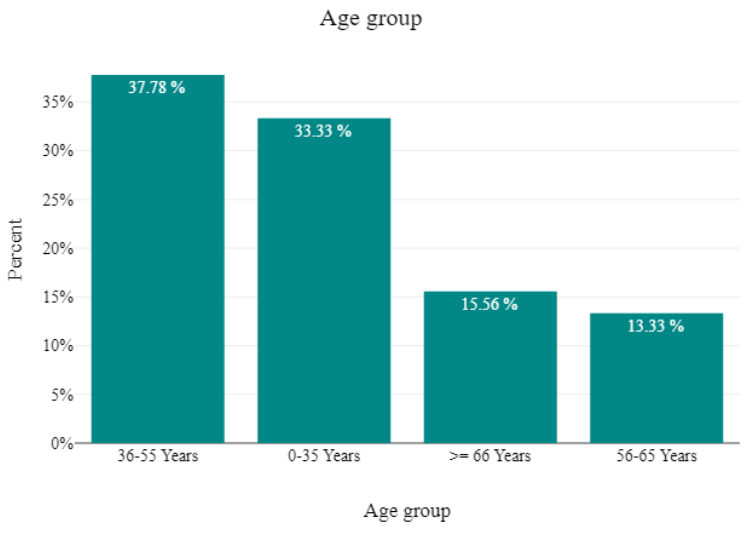


Figure 13 : Age wise distribution of Lichen planus Patients

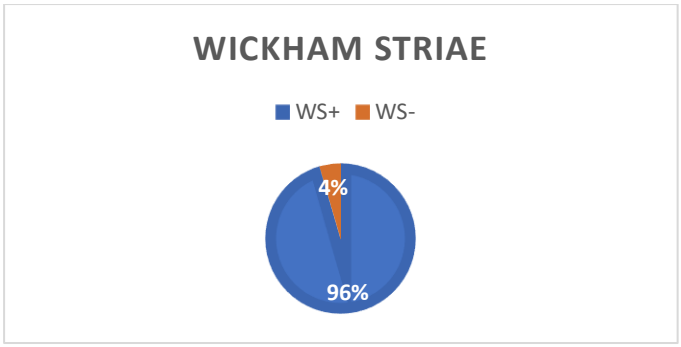


Figure 14: Graphical representation of wickham striae in lichen planus

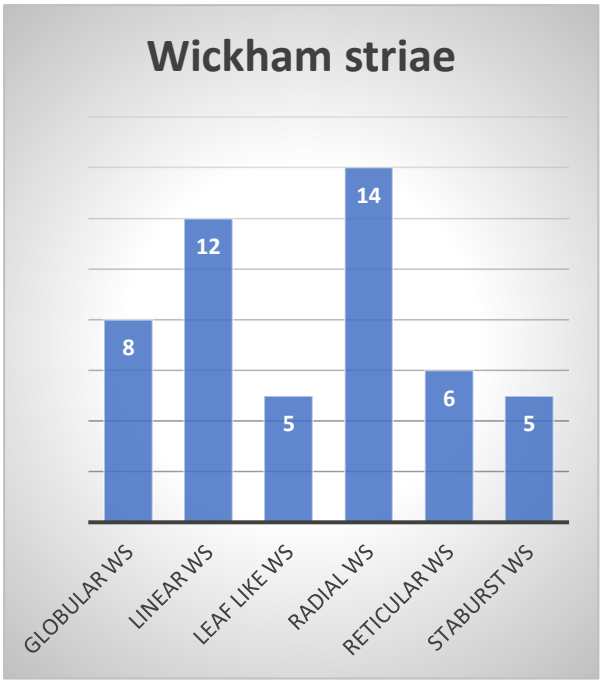


Figure 15: Graphical representation of different types of wickham striae

TABLE 16: DERMOSCOPIC FEATURES OF LICHEN PLANUS

	No. of cases (45)	% (out of total 150 cases)
Background		
Pink	1	2.2%
Red	11	24.4%
Violaceous	32	7171%
White-red	1	2.2%
Vessel distribution		
Diffuse	5	13.9%
Peripheral	22	61.1%
Clustered	9	25%
Vessel morphology		
Dotted	35	77.7%
Globular	5	11.1%
Linear branching	7	15.5%
Scales color		
White	36	80%
Yellow	7	15.5%
Brown	1	2.2%
Pigmentary features		
Brown dots/globules	16	35.5%
Violaceous dots/globules	16	35.5%
Black dots/globules	0	0
Wickham striae		
Linear	12	26.6%
Leaf-like	5	11.1%
Radial	14	31.1%
Starburst	5	11.1%
Reticular	6	13.3%
Globular	8	17.7%
Other features		

Rosettes	3	6.6%
White circles	2	4.4%

HERPES LABIALIS

Out of 150 patients with various lip lesions, 12 patients had herpes labialis.

Herpes labialis showed a bimodal age distribution and was more common in females(n=8).

Most common in 31-40 years and 61-70 years (n=3 each)

Least common in 21-30 years and 51-60 years (n=1 each)

Most common background color was pink, seen in all the cases(n=12).

Only dotted vessels were observed (n=12)

White scales were most commonly observed (n=8)

Grey globules with brown dots were specific clues seen in majority of cases(n=10)

Grey globules with brown dots surrounded by pink halo was second most common finding(n=4)

Table:17 Demographic details of Herpes labialis

Demographic details	Levels	n (12)	%
Age	11-20 Years	2	16.7 %
	21-30 Years	1	8.3 %
	31-40 Years	3	25.0 %
	41-50 years	2	16.7 %
	51-60 Years	1	8.3 %
	61- 70 Years	3	25.0 %
Sex	Females	8	66.7 %
	Male	4	33.3 %

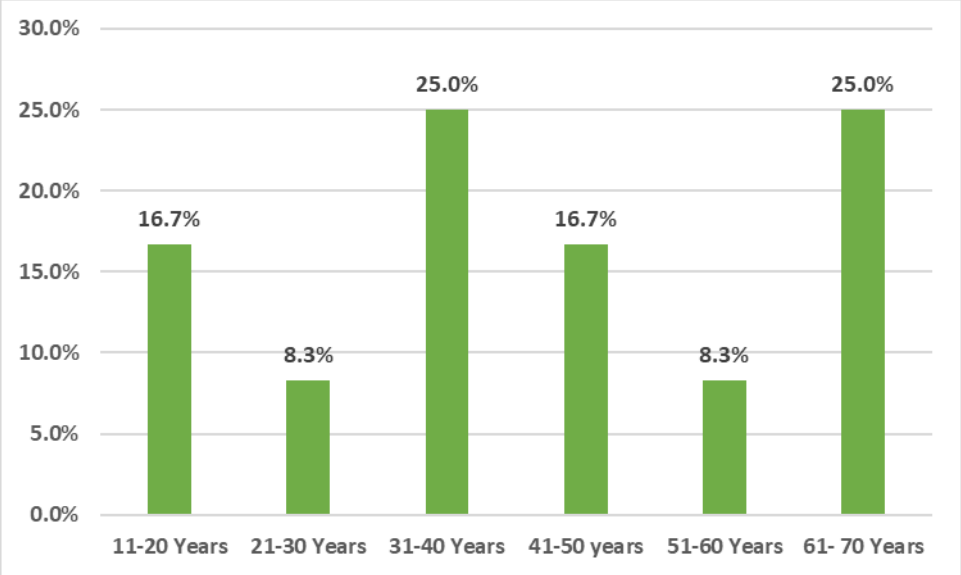


Figure 16: Age wise distribution of Herpes labialis

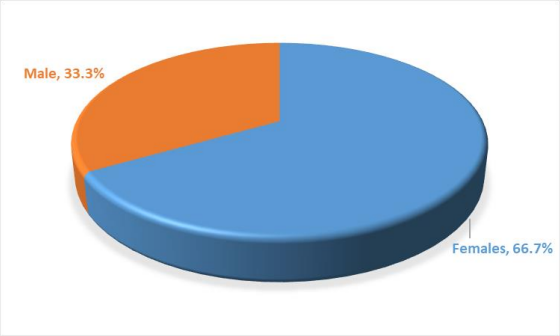


Figure 17: Gender wise distribution of Herpes labialis

TABLE 18: DERMOSCOPIC FEATURES OF HERPES LABIALIS

	No. of cases (12)	% (out of total 150 cases)
Background		
Pink-red	12	100%
Vessel morphology		
Dotted	1	8.33%
Scales		
White	8	66.6%
Yellow	2	16.6%
Specific clues		
Polylobular cloudy white structures	1	8.3%

White lines	0	0
Pink halo	4	33.3%
Grey globules with brown dots	10	83.3%
Yellow brown areas	2	16.6%

LABIAL MELANOTIC MACULE

Labial melanotic macule was seen in 6 cases out of 150 patients with lip lesions. It was exclusively observed in females(n=6), with a higher prevalence in younger age group of 21-40 years(n=3).

Dermoscopy features suggest that The background color of the lesions was evenly split between two categories, light brown and dark brown.

Overlapping vessels were seen in half of the cases.

Parallel lines were the most common pigmentary feature, seen in half of the cases followed by Circle lines.

This is particularly noteworthy as it suggests that the landscape pattern was specific dermoscopic feature observed in 66.6% of the cases(n=4)

Table:19 Demographic Details of cases of Labial melanotic macule

Demographic Details	Levels	n (6)	%
Age	1-20 Years	2	33.3 %
	21-40 years	3	50.0 %
	40-60 Years	1	16.7 %
Sex	Females	6	100.0 %

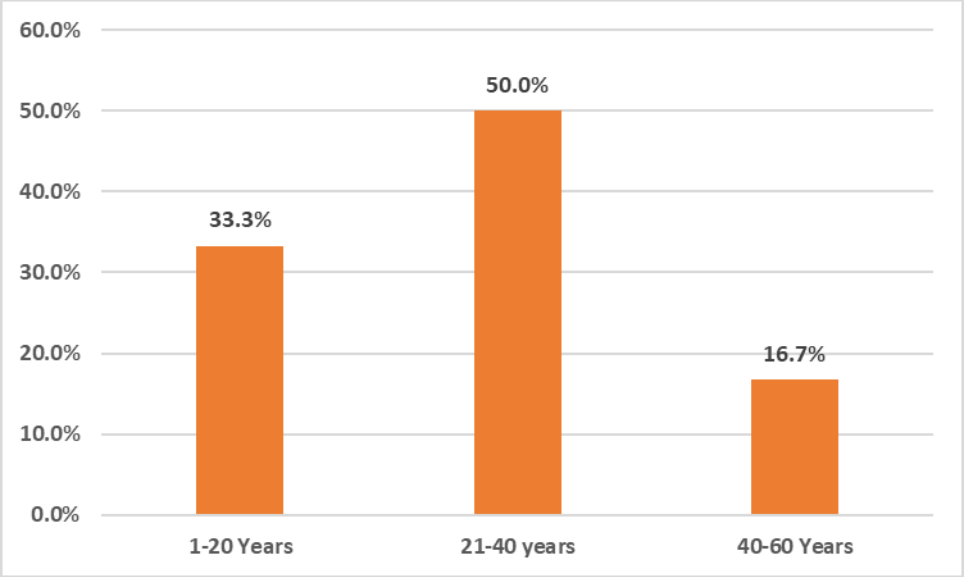


Figure 18: Age wise distribution of cases of Labial melanotic macule

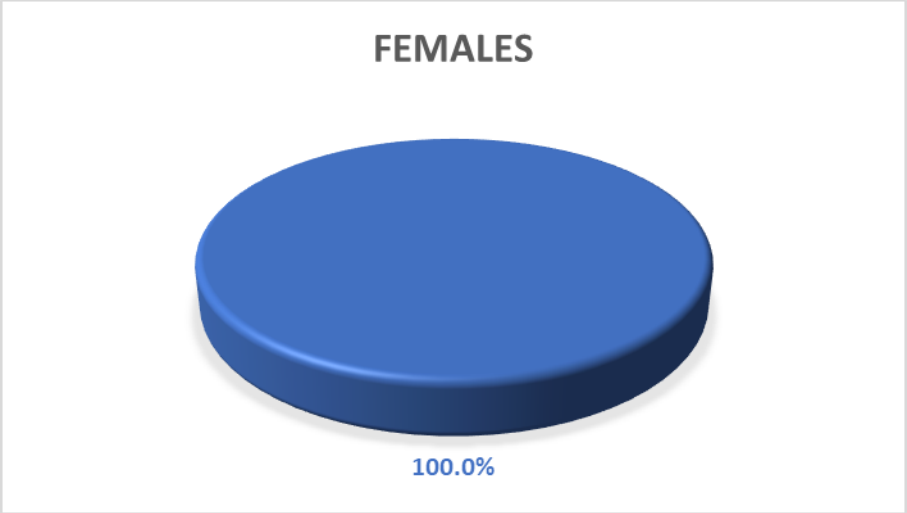


Figure 19: Gender wise distribution of cases of Labial melanotic macule

TABLE 20: DERMOSCOPIC FINDINGS IN LABIAL MELANOTIC MACULE

	No. of cases (6)	**% (out of total cases)**
Background Colour		
Light brown	3	50%
Dark Brown	3	50%
Vessels		
Absent	3	50%
Overlapping vessels	3	50%
Pigmentary Features		
Parallel lines	3	50%
Circle lines	2	33.3%
Irregular network	0	0
Irregular dots and globules	1	11.1%
Blue-white veil	0	0
Specific clue		
Landscape painting pattern	4	66.6%

SQUAMOUS CELL CARCINOMA

Distribution of cases of SCC and their dermoscopic features:

Among 150 cases with various lip lesions, 2 patients has SCC.

Both the patients were male in the age group of 36-55 years age group.

Scales were absent in all cases (n=2). The background colour of the lesions was pink (n=5.

Vessel types varied with linear vessels (n=1), dotted vessels (n=2), arborizing vessels (n=1), glomerular vessels (n=1), and polymorphic vessels (n=1).

Vessel distribution was mainly diffuse (n=2)

Key dermoscopic features included white structureless areas (n=2), white lines (n=1), white circles (n=1), red clods (n=1), and red homogenous areas (each n=1).

Table 21: Demographic details of Squamous cell carcinoma			
Demographic details	**n (2)**	**Counts**	**% of Total**
Age	36-55 Years	2	100.0 %
Sex	Male	2	100.0 %

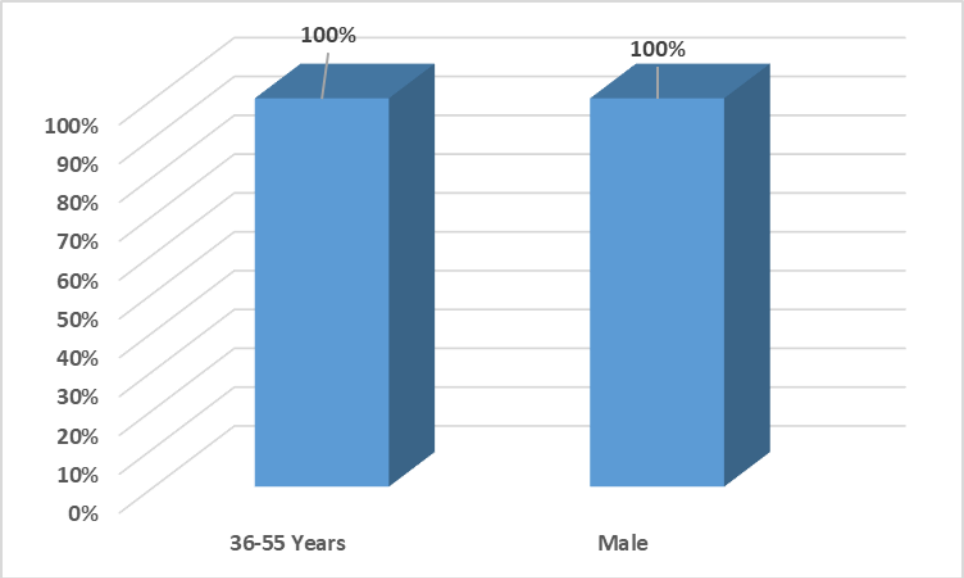


Figure 20 : Demographic details of Squamous cell carcinoma

TABLE 22: DERMOSCOPIC FINDINGS IN SCC

	No. of cases (2)	**% (out of total cases)**
Scale color		
Absent	2	100%
Present	0	0
Background Colour		
Pink	2	100%
Red	0	0
Vessel Type		
Absent		
Linear vessels	1	50%
Dotted vessels	2	100%
Arborizing vessels	1	50%
Glomerular vessels	1	50%
Hairpin vessels	0	0
Polymorphic vessels	1	50%
Vessel Distribution		
Diffuse	2	100%
Other Features		
White circles	1	50%
White structureless areas	2	100%
White lines	1	50%
Yellow structureless areas	0	0
Red clods	1	50%
Red homogenous areas	1	50%

TABLE 23: DERMOSCOPIC FEATURES OF FEW OTHER LIP LESIONS

Lip lesion	Prevalence	M/c background colour	M/c vessel morphology	M/c scales colour and distribution	Other
Contact cheilitis	N=18 (13%)	Brown	Absent	White	Brown dots and globules Yellow crusts
DLE	N=9 (6%)	Red	Linear branching	White	Rosettes White structureless areas Dilated follicle
Angular cheilitis	N=7 (4.6%)	Pink	Absent	White	Fissures
FDE	N=3 (2%)	Red	Absent	Absent	Erosions Blue-grey globules
Granulomatous cheilitis	N=3 (2%)	Dull red	Dotted	White	Yellow-orange areas White reticular lines
LE	N=1 (0.67 %)	Red	Telangiectasia	White	White structureless areas
Inflammatory edema	N=1 (0.67 %)	Red	Short Linear vessels	Absent	
SJS	N=1 (0.67 %)	Red	Dotted	Absent	Purpuric dots Black dots erosions
Wart	N=1 (0.67	Yellow	Red dots		Black dots Frogspawn

	%)				appearance
Vitiligo	N=9 (6%)	Pink	Absent	Absent	Diffuse white glow Perilesional hyperpigmentation
Labial melanosis	N=4 (2.67 %)	Brown	Absent	Absent	
Pyogenic granuloma	N=4 (2.67 %)	Red	Telangiectasia	Absent	White collarette White rails
CMN	N=1 (0.67 %)	Blue-grey	Absent	Absent	

IMAGES OF DERMOSCOPY FEATURES OF FEW LIP LESIONS FROM THE STUDY:

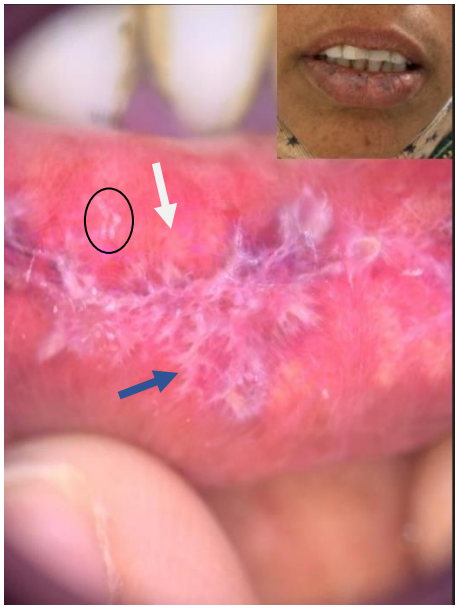


Figure 21: Dermoscopy of lichen planus. Black circle showing white scales, white arrow showing red background, blue arrow showing leaf venation wickham striae.

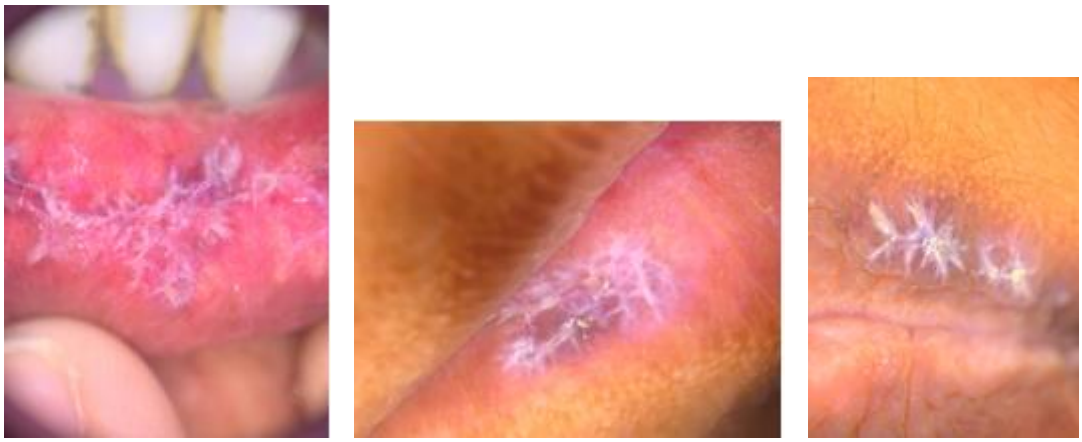


Figure 22 a , b , c . Dermoscopy of lichen planus showing leaf venation pattern, reticular pattern, radial pattern of wickham striae.

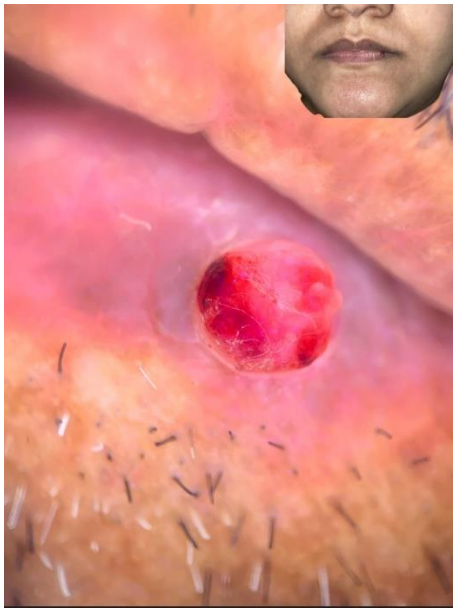


Figure 23: Dermoscopy of pyogenic granuloma showing red homogenous area, white collarette, white rail lines, hemorrhagic crusts.

Figure 24: Dermoscopy of filiform wart showing black dots, Frogspawn appearance(Dotted vessels with white halo)

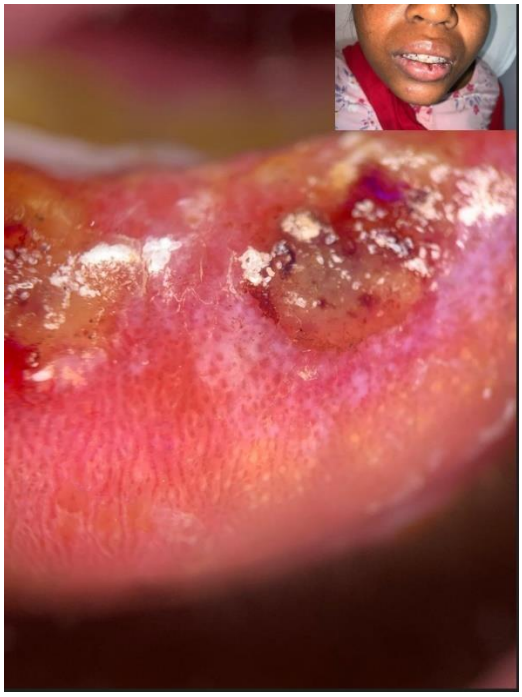


Figure 25: Dermoscopy of contact cheilitis showing white scales, yellow crusts.

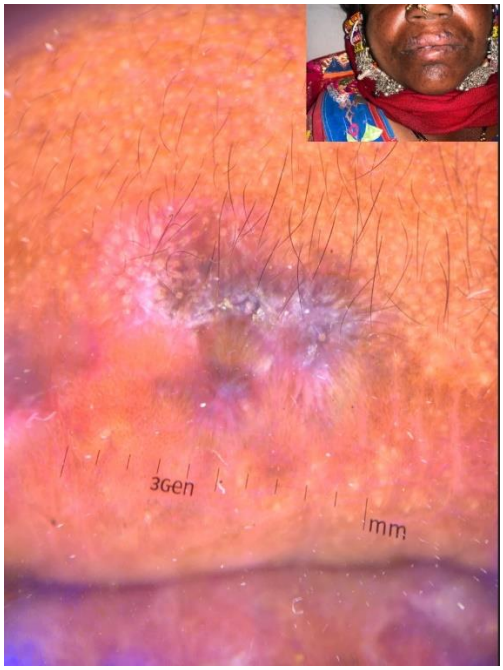


Figure 26: Dermoscopy of DLE showing follicular plugs, perifollicular white halo, multiple rosettes.

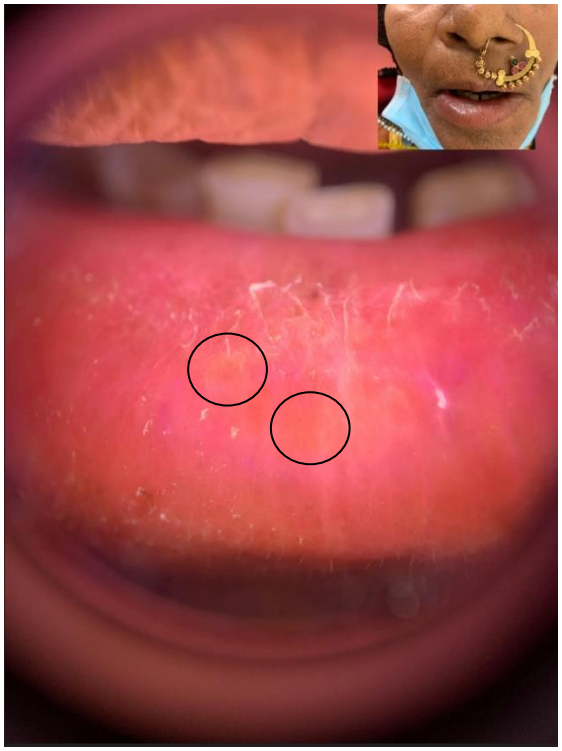


Figure 27: Dermoscopy of granulomatous cheilitis showing yellow orange areas(white circles) and telangiectatic vessels.

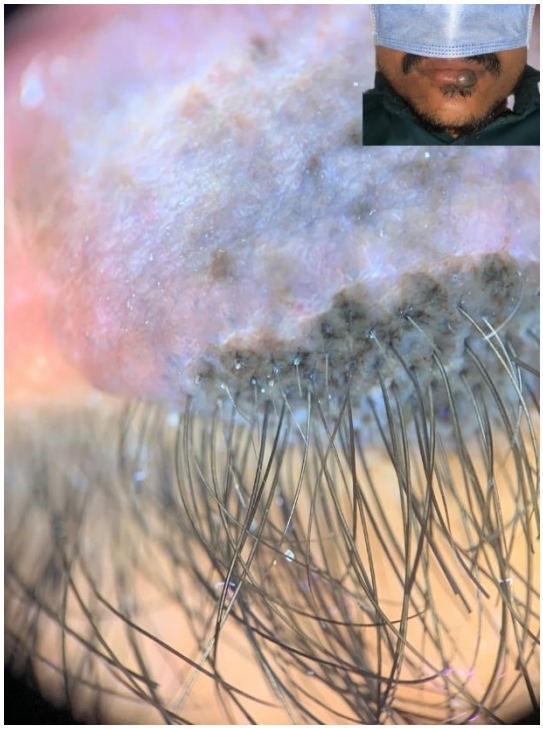


Figure 28: Dermoscopy of CMN showing homogenous blue areas and reticuloglobular pattern.

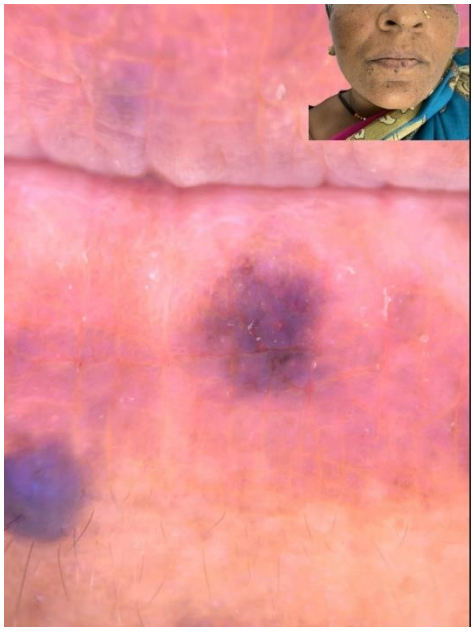


Figure 29: Dermoscopy of labial melanotic macule showing brown background , parallel lines, circle lines.

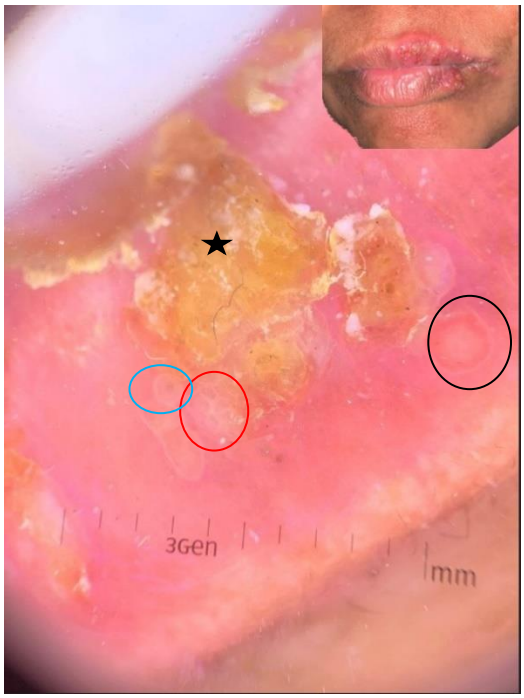


Figure 30: Dermoscopy of herpes labialis showing polylobular cloudy white structures(red circle) surrounded by pink halo(black circle) Grey globular structures with brown dots(blue circle) Yellow crusts(black star)

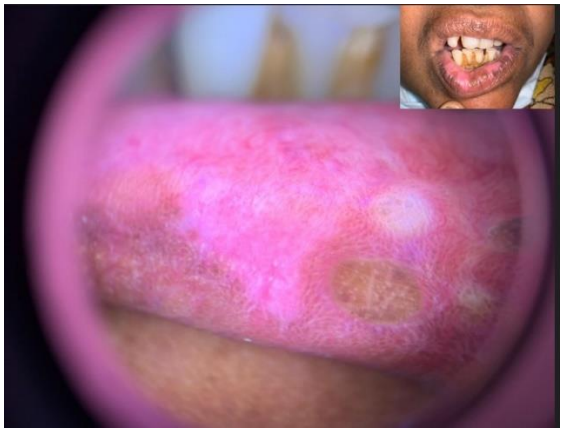


Figure 31: Dermoscopy of vitiligo showing Diffuse white glow Perilesional hyperpigmentation

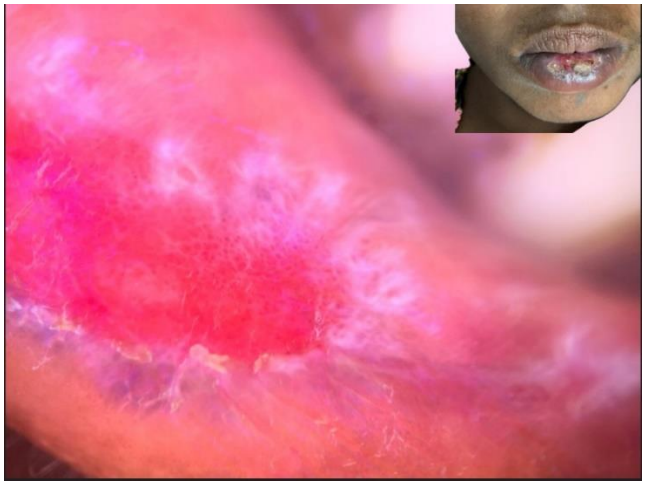


Figure 32: Dermoscopy of Actinic cheilitis showing pink background, white scales, white structureless areas, valcular polymorphism, ulceration.

DISCUSSION

Dermoscopy is a skin surface microscopy technique that rapidly grew during the past years enhancing the non-invasive dermatological diagnostic techniques effectively; although histopathology remains the gold standard.

Lips may be the site of clinical and pathological changes related to a wide spectrum of etiologies. This anatomical site can host up to 25.7% of oral lesions, 12% of the head and neck cancers. Lip lesions can act as an indicator of the presence of underlying systemic disease.[2]

The prevalence of lip lesions in the Indian population is 18.8%.[5]

An important fact that must be taken into consideration when diagnosing lip lesions is the knowledge of their relative occurrence frequency.

Few studies have been done to estimate the prevalence of lip lesions. The present study aims to highlight the diversity of lip lesions and determine their prevalence in North Karnataka .[2]

The most prevalent lip lesions are discussed below in detail.

LICHEN PLANUS

Lichen planus is the most common inflammatory lip lesion studied.

There are various clinical and dermoscopic features are described earlier.

In the present study patients presented with erythematous-violaceous patches over the lips seen predominantly in females of age group 36-55 years.

On dermoscopy, red background , white scales were seen with many dotted vessels in peripheral distribution. Violaceous background was observed in 35%of the cases.

Wickham striae being a specific clue was seen in 97% of the patients. All patterns of wickham striae were studied of which radial pattern was most common followed by linear wickham striae. Starburst and leaf venation patterns were less common. Rosettes and white circles were additional features encountered in few patients.

On comparing the dermoscopic features of studies by neema *et al* with the present study(Table 24) it was observed that lip lichen planus was most common in males while female predominance was observed in our study. Middle age was commonly involved in both the studies.[8]

Table 24: Comparison of dermoscopic findings of Lichen planus in the present study to that by Neema *et al*.[8]

Lichen planus	Neema *et al*	Present study
Wickham striae		
Leaf venation	16.7%	11.1%
Linear	33.3%	26.6%
Radial	75%	31.1%

Scales	100%	80%
Pigmentation		
Grey-black globules	83.3%	35.5%
Brown	16.7%	35.5%
Vascular pattern		
Linear	83.3%	15.5%
Hairpin	66.7%	0
Dotted	75%	77.7%
Background		
Erythematous	58.3%	24.4%
Violaceous	41.7%	71%
Erosion	50%	0
Bleeding spots	33.3%	0
Rosettes at lip margin	33.3%	6.6%

LABIAL MELANOTIC MACULE

LMM are the most common pigmented lip lesion encountered, presenting as dark lesion over the lip usually <1cm in maximum diameter most commonly seen in adult females.

Compared to previous study by Kim GW *et al* ,in the present study, brown background was seen in all the cases, overlapping vessels seen in half of the cases.

Parallel lines, circle lines are the benign pigmentary changes seen in 80% of the patients. Malignant pigmentary features such as irregular dots and globules, blue-white veil, irregular pigment network were not seen in our study.

Landscape pattern formed by background brown pigmentation, parallel lines , circle lines, overlapping vessels is a specific dermoscopic feature seen in 66% of the patients.

Table 25 : Comparison of dermoscopic findings of Labial melanotic macule in the present study to that by Kim GW *et al.*[39]

LMM	Kim GW *et al*	Present study
Brown Background	92.5%	100%
Parallel lines	77.5%	50%
Circle lines	25%	33.3%

Overlapping vessels	86.3%	50%
Structureless black Pigmentation	32.5%	0
Landscape painting pattern	81.3%	66.6%

SQUAMOUS CELL CARCINOMA

Squamous cell carcinoma (SCC) is the most common malignant tumor of the lip[43]. Lip SCC accounts for 12% of all cancers of the head and neck region, and the affected site is lower lip in a majority of lip SCCs. Lip cancer also comprises approximately 25% of all oral cavity cancers[44].

In the present study, both the patients were elderly male and presented with SCC of the lower lip.

Dermoscopy showed pink background, with scales being absent, with diffuse distribution of arborising vessels, glomerular vessels, polymorphic vessels, linear and dotted vessels. Some patients showed white lines, white structureless areas, blood spots.

In a study by Benati E *et al* , included 28 cases of lip SCC , majority of cases were lower lip SCC(90%) ,ulceration seen in almost all the cases(90%), polymorphous pattern (68.2%), scales (100%), white streaks (>50%).[45]

ACTINIC CHEILITIS

Chronic sun exposure and several environmental factors cause actinic damage and cancer of the lower lip.

Commonly presents as ulceration and crusting over the lip.

Seen in patients exposed to excess uv light.

14 patients of actinic cheilitis were evaluated in our study.

Most common age group was 36-55 years. Females were predominantly ivolved. Dermoscopy shows white-red background and ulceration was seen in all the cases. Scales were seen in 85% of the patients. Predominance of polymorphic vessels followed by dotted vessels. White structureless areas and keratin halo was seen in few patients.

In a study by Cabezas JE *et al* which included 25 patients with actinic cheilitis, Dermoscopic features included a white-yellow lip color (24%). The main morphologic pattern of blood vessels was monomorphic (88%), polymorphous (60%), dotted pattern (64%), and linear-irregular (32%). Radiating white structures and white structureless areas were also studied.[46]

CONCLUSION

Lips are the anatomical structures that surround the orifice of the mouth. They are constantly exposed to environmental effects leading to various lesions over the lips.

Managing the lip lesions need knowledge about the prevalence, clinical and dermoscopic features of different lip lesions.

Dermoscopy is a non-invasive method for the in vivo monitoring and diagnosis of pigmented and non-pigmented skin lesions that combines digital photography and light microscopy.

A total of 150 lip lesions were studied , with a prevalence of 0.40

Predominance of non-neoplastic lesions over neoplastic lesions was seen.

Inflammatory lesions formed majority of non-neoplastic group followed by infectious lesion.

Most common inflammatory lesion was lichen planus, infectious lesion was herpes labialis, pigmentary lesion was vitiligo.

Among the neoplastic group, most common pre-malignant lesion studied was actinic cheilitis, benign lesion was labial melanotic macule, malignant lesion was squamous cell carcinoma. Only 24 cases required biopsy to attain final diagnosis. Hence it appears that dermoscopy improves clinical diagnosis protocol.

Further studies are needed to evaluate specificity and sensitivity of the dermoscopic features and to conclude that dermoscop could be a substitute for the invasive and time-consuming skin biopsy and histopathological examination.

SUMMARY

A hospital based cross-sectional study to determine the clinical and dermoscopic features of various lip lesions was conducted during the study period of September 2022 to may 2024. Patients presenting with various lip lesions irrespective of age and gender were subjected to detailed clinical and dermoscopic evaluation.

Clinical and dermoscopic images were recorded and patients were categorised into neoplastic and non-neoplastic groups. Biopsy was done if necessary.

Following are the salient findings of the study:

- Prevalence of lip lesions was 0.40
- The age group with highest prevalence was between 31-41years; followed by the age group 21-30 years.
- There was a slight female preponderance compared to male
- Most prevalent non-neoplastic lip lesion was lichen planus, neoplastic lesion was actinic cheilitis.
- Most common dermoscopic features seen in most prevalent lip lesions were :

  -Lichen planus: Violaceous background, wickham striae

  -Actinic cheilitis: White structureless areas, vascular polymorphism, ulceration

  -Herpes labialis: Grey globules with brown dots, pink halo, polylobular cloudy white structures

  -Labial melanotic macule- Brown background, landscape painting pattern

Many new dermoscopic findings were reported for the first time in this study which require further studies with larger number of patients.

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ETHICAL CLEARANCE CERTIFICATE

Azadi Ka Amrit Mahotsav

BLDE
(DEEMED TO BE UNIVERSITY)
Declared as Deemed to be University u/s 3 of UGC Act, 1956
Accredited with 'A' Grade by NAAC (Cycle-2)
The Constituent College
SHRI B. M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE, VIJAYAPURA

BLDE (DU)/IEC/ 701/2022-23 30/8/2022

INSTITUTIONAL ETHICAL CLEARANCE CERTIFICATE

The Ethical Committee of this University met on **Friday, 26th August, 2022 at 3.30 p.m. in the Department of Pharmacology** scrutinizes the Synopsis of Post Graduate Student of BLDE (DU)'s Shri B.M.Patil Medical College Hospital & Research Centre from ethical clearance point of view. After scrutiny, the following original/ corrected and revised version synopsis of the thesis/ research projects has been accorded ethical clearance.

TITLE: "CLINICAL AND DERMOSCOPIC STUDY OF LIP LESIONS: A PROSPECTIVE CROSS-SECTIONAL STUDY

NAME OF THE STUDENT/PRINCIPAL INVESTIGATOR: Dr. Thrupthi A. L

NAME OF THE GUIDE: Dr. Keshavmurthy A. Adya, Associate, Dept. of Dermatology.

Dr. Santoshkumar Jeevangi
Chairperson
IEC, BLDE (DU),
VIJAYAPURA
Chairman,
Institutional Ethical Committee,
BLDE (Deemed to be University)
Vijayapura

Dr.Akram A. Naikwadi
Member Secretary
IEC, BLDE (DU),
VIJAYAPURA
MEMBER SECRETARY
Institutional Ethics Committee
BLDE (Deemed to be University)
Vijayapura-586103, Karnataka

Following documents were placed before Ethical Committee for Scrutinization:

- Copy of Synopsis/Research Projects
- Copy of inform consent form
- Any other relevant document

Smt. Bangaramma Sajjan Campus. B. M. Patil Road (Sholapur Road), Vijayapura - 586103, Karnataka. India.
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B.L.D.E.U's SHRI B M PATIL

MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE, VIJAYAPURA-586103

RESEARCH INFORMED CONSENT FORM

TITLE OF THE PROJECT :- **"**CLINICAL AND DERMOSCOPIC ASSESSMENT OF LIP LESIONS BY PROSPECTIVE CROSS-SECTIONAL STUDY**"** IN SHRI B M PATIL MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE, VIJAYAPURA.

PG GUIDE **:-** DR. KESHAVMURTHY ADYA

PG STUDENT **:-** DR. THRUPTHI A.L

PURPOSE OF RESEARCH:

To know the prevalence of lip lesions in North Karnataka region and correlating the clinical , dermoscopic features of the same.

BENEFITS:

I understand that my participation in this study will help the investigator to know the diversity of lip lesions with its clinic-dermoscopic features in age group from birth-85years and its prevalence.

PROCEDURE:-

I understand that relevant history will be taken and I will undergo detailed lip examination and dermoscopy of the same. Punch biopsy will be taken if necessary.

RISK AND DISCOMFORTS:-

I understand there is no risk involved and I will experience no discomfort during the clinical examination.

CONFIDENTIALITY:-

I understand that medical information produced by this study will become a part of my hospital records and will be subjected to the confidentiality and privacy regulation of the said hospital. Information of a sensitive personal nature will not be a part of the medical records, but will be stored in the investigator's research file. If the data are used for publication in the medical literature or for teaching purposes no names will be used and other identifiers such as photographs and audio or videotapes will be used only with my special written permission. I understand I may see the photographs, videotapes and hear the audiotapes before giving this permission.

REQUEST FOR MORE INFORMATION:-

I understand that I may ask more questions about the study at any time concerned. Dr. THRUPTHI A.L is available to answer my questions or concerns. I understand that I will be informed of any significant new findings discovered during the course of this study, which may influence my continued participation.

REFUSAL OR WITHDRAWAL OF PARTICIPATION:

I understand that my participation is voluntary and I may refuse to participate or may withdraw consent and discontinue participation in this study at any time without prejudice. I also understand that Dr THRUPTHI A.L may terminate my participation in this study at any time after he has explained the reasons for doing so and has helped arrange for my continued care by my own physician, if this is appropriate.

INJURY STATEMENT:-

I understand that in the unlikely event of injury to me resulting directly from my participation in this study and if such injury were reported promptly, then medical treatment will be available to me, but no further compensation will be provided. I understand that by my agreement for my participation in this study, I am not waiving any of my legal rights.

I have explained to (patient's / relevant guardian's name) the purpose of the research, the procedures required, and the possible risks and benefits to the best of my ability in patient's own language.

_____ _____

Investigator / P. G. Guide Date

I confirm that …….(Name of the PG guide / chief researcher) has explained to me the research, the study procedures that I undergo and the possible risks and discomforts as well as benefits that I may experience. I have read and I understand this consent form. Therefore, I agree to give my consent for my participation as a subject in this research project.

_____ _____

Participant / guardian Date

_____ _____

Witness to signature Date

B.L.D.E.U'S SHRI B. M. PATIL MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE, VIJAYAPURA.

Department of Dermatology, Venereology and Leprosy.

SCHEME OF CASE TAKING

CLINICAL AND DERMOSCOPIC STUDY OF LIP LESIONS

General information

Name: SL no:

Age:

Sex: Address:

Contact no. :

Patient ID : Date:

Presenting Complaints :

History of presenting illness:

Personal history :

Past history :

Family history :

- General Physical Examination:

  BP : PR:

  Pallor: Edema:

  Icterus: Lymphadenopathy

- Local examination:

- Systemic Examination

  Cardiovascular system: Central nervous system:

  Respiratory system: Abdominal examination:

  DERMOSCOPIC FINDINGS:

  HISTOPATHOLOGICAL FINDINGS:

  DIAGNOSIS:

KEY TO MASTER CHART

WR- WHITE RED

B- BROWN

E- ERYTHEMATOUS

P- PINK

R- RED

V- VIOLACEOUS

C-CLUSTERED

D-DIFFUSE

P-PERIPHERAL

D-DOTTED

T- TELANGIECTASIA

G-GLOBULES

A-ARBORISING

POL-POLYMORPHIC

LB-LINEAR BRANCHING

S-SERPENTINE

L-LINEAR

Y-YELLOW

W-WHITE

BD-BROWN DOTS

BG-BROWN GLOBULES

GWS- GLOBULAR WICKHAM STRIAE

RAWS-RADIAL WICKHAM STRIAE

RTWS-RETICULAR WICKHAM STRIAE

LFWS-LEAF VENATION WICKHAM STRIAE

LWS-LINEAR WICKHAM STRIAE

SBWS-STARBURST WICKHAM STRIAE

WS-WICKHAM STRIAE

U-ULCERATION

YO areas- YELLOW ORANGE AREAS

VP-VASCULAR POLYMORPHISM

WSA-WHITE STRUCTURELESS AREA

DB-DARK BROWN

DWG-DIFFUSE WHITE GLOW

RPN-RETAINED PIGMENT NETWORK

IDG-IRREGULAR DOTS AND GLOBULES

VD-VIOLACEOUS DOTS

VG-VIOLACEOUS GLOBULES

GG-GREY GLOBULES

PH-PINK HALO

PP-PERILESIONAL PIGMENTATION

PSE-PSUEDOPOD LIKE EXTENSION

YB-YELLOW BROWN AREAS

CW-CLOUDY WHITE AREAS

Y-YES

N-NO

Sl.no	IP No.	Name	Age	Sex	Clinical history	Dermoscopy								Clinical diagnos	HPE Y/N	HPR No.	Final diagnosis
						Background	Vessel Distr	Vessels Mor	Scales	Pigmentary fe	Follicle	Specific clues	Other features				
1	259770	oja Rath	18	F	Darkening of lips x 1 month	Brown				brown dots, globules				Labial melanosis	N		Labial melanosis
2	283655	Nandini	45	F	Fluid filled lesions over lipsx 1 day	P			Y crusts			YB+BD, CW		Herpes labialis	N		Herpes labialis
3	281286	Murina E	28	F	Darkening of lips x 1 week following sulfa dru	Brownish	P	D		Bluish-grey globules				FDE	N		FDE
4	274657	Manjapp	55	M	Burning sensation over lip x 6 months	WR	D	POL	Y			U	VP	Actinic cheilitis	N		Actinic cheilitis
5	158566	Adiveppa	74	M	Painful lesions on lips x 8 months	WR	P	POL	Y			U	VP	Actinic cheilitis	Y	3104/23	Actinic cheilitis
6	116064	Mallamm	45	F	Burning sensation over lip x 2 years	WR	P	POL	Y			U	WSA	Actinic cheilitis	Y	2272/23	Actinic cheilitis
7	386543	Arman	4	M	Lesions over lips x 1 week	P			Y crusts			GG+BD		Impetigo	N		Impetigo
8	232811	Neelamn	38	F	Painful lesions on lips x 1 week	WR	D	D,L	Y			U	WSA	Actinic cheilitis	N		Actinic cheilitis
9	289038	Sakkuba	28	F	Burning sensation over lip x 1 month	WR	D	D	Y			U	WSA	Actinic cheilitis	Y	5446/23	Actinic cheilitis
10	255224	Vinod	30	M	Painful lesions on lips x 1 year	WR	P	POL					WSA	Actinic cheilitis	N		Actinic cheilitis
11	309537	Shanta H	42	F	Burning sensation over lip x 2 months	WR	C	G				U	WG	Actinic cheilitis	N		Actinic cheilitis
12	292034	Apporva	17	F	Lesions at angle of mouth x 1 week	P	C	D,LB	W				Fissures	Angular cheilitis	N		Angular cheilitis
13	103907	Poorvi	12	F	Itchy lesions over angle of mouth x 1 month	Dull red			W				Fissures	Angular cheilitis	N		Angular cheilitis
14	426847	Tanush	17	M	Scaly lesions over lip x 4 month	E			W				Fissures	Angular cheilitis	N		Angular cheilitis
15	60642	Nandini	34	F	Lesions at angle of mouth x 2 week	Dull red			W				Fissures	Angular cheilitis	N		Angular cheilitis
16	396054	Priyadars	29	F	Darkening of lips x 2 months	Brown				brown dots, globules				Labial melanos	N		Labial melanosis
17	18710	Asma M	32	M	Darkening of lips x 2 months	R	P	LB	W	BG		RAWS		Actinic cheilitis	Y	332/23	Lichen planus
18	395991	Tukaram	60	M	Lesion over lip associated with bleeding x 8	WR	D	G,S	Y			U		Actinic cheilitis	Y		contact cheilitis
19	381317	Bagyash	16	F	Lesion over lip x 15 days	B	P	D	W				Fissures	contact cheilitis	N		contact cheilitis
20	71190	Gangamı	30	F	Painful lesion over lips x 10 days	B	D	D	Y				W	contact cheilitis	N		contact cheilitis
21	121921	Gouravv	70	F	Lesions over lip x 5 days	E	D	D	Y				W	contact cheilitis	N		contact cheilitis
22	14046	Kiran	30	M	Lesions over lip x 20 days following hair dye	B	P	D	W				Fissures	contact cheilitis	N		contact cheilitis
23	407317	Somanin	20	M	Red lesions over lip x 4 months	B	P	D	Y					Lichen planus	Y		contact cheilitis
24	453860	Mallangc	52	M	Darkening of lips x 10 days following hair dye	B	P	D	W				Fissures	contact cheilitis	N		contact cheilitis
25	434388	R M Bira	38	M	Lesions over lip x 2 months	WR	C	D,L	W			U	WSA	Actinic cheilitis	N		Actinic cheilitis
26	392226	Saniya	18	F	Painful lesions over lip asso with bleeding x	B	P	D	W				Fissures, black crust	contact cheilitis	N		contact cheilitis
27	154293	Vaishnav	21	M	Lesions over lip x 2wks , lip licking +	B	P	D	Y				Fissures	contact cheilitis	N		contact cheilitis
28	194655	Shivarud	67	M	Painful lesions over lip x 5 months	WR	P	T	Y		D, P, PS		W	DLE	Y		DLE
29	193645	Manjula	36	F	Lesions over lip and face x 3 months	E	C	T	W		D,P,			DLE	N		DLE
30	135576	Shrikanth	40	M	Lesions over face and lip x 2 years	WR			W				white circles , Rosette+	DLE	Y		Lichen planus
31	384559	Kasturiba	37	F	Lesions over face and lip x 1 years	WR		T	Y		P		W	DLE	Y	7152/22	DLE
32	115197	Vimalaba	55	F	Lesion over lip and nose x 6 months	WR			W		P		W	DLE	N		DLE
33	58168	Jyothi	44	F	Itchy lesions over nose and lips x 6 month	V	P	T	W				W	DLE	N		DLE
34	275038	Raju raja	48	M	Itchy lesions over lips , wrists x 4 days follow	E	P	D,G	Y crusts	Bluish-grey globules			Erosion +	FDE	N		FDE
35	115047	Beerling	20	M	Swelling of lips x 3 months	E	D	T	W			YO area, white reti lines		Granulomatou	Y		contact cheilitis
36	269437	Salama r	30	F	Swelling of lips x 5 months	E	D	T	W			YO area, white reti lines		Granulomatou	Y	5125/21	Granulomatous cheilitis
37	254328	Aditya Bi	18	M	Swelling of lips x 3 years	E	D	D,T	W			YO area, white reti lines		Granulomatou	Y	4803/22	Granulomatous cheilitis
38	116580	Ashok	48	M	Swelling of lower lip asso with pain x 8 days	E	C	D, short linear v	W			YO area, white Globules		Inflammatory e	N		Inflammatory edema
39	342720	Kasturi	37	F	Darkening of lips x 1 year	Brown				brown dots, globules				Labial melanos	N		Labial melanosis
40	248646	Gangavv	73	F	K/c/o LE , lesions over lip x 3 months	E	C	D,T	W				white structureless areas	LE	N		LE
41	120097	Padmavv	40	F	Burning sensation in oral cavity , lesions ov	V	P	LB,D	B	BD		LWS, GWS		Lichen planus	N		Lichen planus
42	314959	Mallayya	45	M	Itchy lesions over extremities, lip x 2 years	V	C	D	W	BD		GWS		Lichen planus	N		Lichen planus
43	291944	Gorshan	56	M	Burning sensation over lip , oral cavity x 4 m	V	P	LB,D	Y			LWS, GWS		Lichen planus	N		Lichen planus
44	255395	Laxmi sh	30	F	Lesions over lip, oral cavity x 2 years	V	P	D	W			GWS		Lichen planus	N		Lichen planus
45	434344	Nirmala	35	F	Lesions over lips x 1 month	R	P	D	W			GWS		Lichen planus	N		Lichen planus
46	127324	Anasuya	45	F	K/c/o LP , lesions over lip x 3 months	V	P	D	W			LWS		Lichen planus	N		Lichen planus
47	279090	Dayanan	29	M	Lesions over lower lip x 2 years	R	C	D,G	W			WS-		Actinic cheilitis	Y	5255/22	Lichen planus
48	268328	Kamalab	55	F	Lesions over lower lip x 4 years	R	D	D	W	BG		LWS,GWS		Lichen planus	N		Lichen planus
49	442675	Kashinat	66	M	Itchy lesions over lips, hands, feet, neck x 6	V	P	D	W	BG		RAWS		Lichen planus	N		Lichen planus
50	398777	Bhimaba	58	F	K/c/o LP , lesions over lip x 7 months	R			W	BG		RAWS,LWS		Lichen planus	N		Lichen planus
51	18441	Kamalav	61	F	Lesions in oral cavity , lips x 9 months (in HC	V	C	D	W	BG		GWS	Rosette+	Lichen planus	N		Lichen planus
52	386507	Komala	45	F	Lesions over lips x 1 month	R	C	D	W	BG		LFWS	Rosette+	Lichen planus	N		Lichen planus
53	403631	shivanan	70	M	Lesions over lips x 8 months	V	C	D	W	BG		RAWS		Lichen planus	N		Lichen planus
54	166853	Ashabee	68	F	Lesions over lip asso with birning sensation	V	C	D	W	BG		SBWS		Lichen planus	Y	3257/22	Lichen planus
55	45235	Kanta tor	79	F	Lesions over lip x 4 months	V	C	D	Y	BD		RAWS		Lichen planus	N		Lichen planus
56	193960	Mallappa	60	M	Lesions over agnle of mouth x 4 months	R	C	D	Y			RAWS,LWS,RTWS		Lichen planus	N		Lichen planus
57	368468	Nirmala	40	F	Lesions over lips asso with burning x 6 mon	V			W	BG		RAWS		Lichen planus	N		Lichen planus
58	220235	Ashok	58	M	Itchy lesions over hands, lips x 3 months	V			W	BG		RAWS		Lichen planus	N		Lichen planus
59	12155	Avinash	28	M	Lesions over lips with burning sensation x 1	V			W	BG		RAWS		Lichen planus	N		Lichen planus
60	385782	R V Padr	55	M	Asymptomatic lesion over lower lip x 6 mon	P	P	D,LB	W			WS-	White circles	Pigmented SC(	Y	7189/22	Lichen planus
61	49124	Dhanaraj	12	M	Lesions over lip x 1 month	R			W	BD		LWS		Lichen planus	N		Lichen planus
62	166764	Shakunta	68	F	Lesions over lips with burning sensation x 1	V	P	LB	W	BD		GWS		Lichen planus	Y	3256/22	Lichen planus
63	159141	Malakav	55	F	Painful lesions over lips x 1 year	R	C	LB,D	W			LWS		Lichen planus	N		Lichen planus
64	255728	Meenaks	67	F	Lesions over lips x 2 years	V	D	D	W			RAWS,LWS,GWS		Lichen planus+S	Y	4799/23	Lichen planus
65	440581	Paramar	41	M	Lesions over lip, oral cavity x 6m	V	D	LB,D,G	Y			RTWS,LFWS		Lichen planus	N		Lichen planus
66	271677	Priti Kira	24	F	Lesions over lip and oral cvity x 1 month	V			W			RAWS		Lichen planus	N		Lichen planus
67	366700	Sandarra	60	F	Lesions over lip x 20 days	V						LWS		Lichen planus	N		Lichen planus
68	63358	Sugalavv	68	F	Pigmented lesions over lips x 2 moths	V			W	VG		RAWS		Lichen planus	N		Lichen planus
69	78676	M S Ada	30	M	Painful lesion over lips x 5 months	V	P	D	Y	VG		RTWS		Lichen planus	N		Lichen planus
70	376529	Ajit	20	M	Painful lesions over lips x 20 days, fluid fillec	E	D	D,G	Y crusts			Erosion+		Pemphigus vul	N		Pemphigus vulgaris
71	377868	Yashoda	45	F	Darkening of lips x 20 days	Brown	P	D	W	BD,BG				contact cheilitis	N		contact cheilitis
72	396616	Siddanag	65	M	Lesion over lower lip asso with bleeding x 1r	HomoRed+WA	D	D,G	W			White colarette	White rails	Pyogenic granu	Y		Pyogenic grauloma
73	243226	Uma	30	M	lesion over lip x 3m	HomoRed+WA	D	D,G	W			White colarette	White rails	Pyogenic granu	Y	4801/23	Pyogenic grauloma
74	395380	Raju jadh	36	M	Lesions over lips x 2 years	E	C	D	W			WS- U-		Actinic cheilitis	Y		contact cheilitis
75	376854	Ramapp	67	M	Painful lesions over lips x 2 days	E	D	D,G	y crusts			Erosion +		SJS	N		SJS
76	178534	Gowri	50	F	Lesions over lip x 7 months	WR	C	H	W			U		Actinic cheilitis	N		Actinic cheilitis
77	189436	Siddappa	78	M	Light colored lesions over lips x 10 years	E			A	DWG				Vitiligo	N		Vitiligo
78	314342	Kyanvi	22	F	Light colored lesions over lips x 1 m	W	D	D	A	DWG, RPN		PP		Vitiligo	N		Vitiligo
79	257474	Kasturiba	53	F	Light colored lesions over lips, foot, trunk x	E	D	T,S,LB	A	REDUCED		PSE		Vitiligo	N		Vitiligo
80	158934	Saibanna	50	M	Light colored lesions over lips, extremities, t	E			A	REDUCED,RPN				Vitiligo	N		Vitiligo
81	186538	Spandan	30	F	Light colored lesions over lips, trunk x 3 yea	E	D	D,S,LB	A	DWG				Vitiligo	N		Vitiligo
82	275664	Satewwa	58	F	Painful lesions over lips x 2 months	WR	P	H	W			U	Keratin halo	Actinic cheilitis	N		Actinic cheilitis
83	80372	Udaybha	40	M	Lesions over lip and anal region x 3 months	Yellow		D,G		Black globules		frogspawn appearance		Filiform wart	N		Filiform wart
84	289456	Basamm	55	F	Lesions over lip x 3 days	P			W			GG+BD		Herpes labialis	N		Herpes labialis
85	284792	abhijeet	18	M	Lesions with burning sensation over lips x 2	P			Y crusts			GG+BD+PH		Herpes labialis	N		Herpes labialis
86	363157	R M Bira	38	M	Painful lesions over lower lip, neck , oral cav	P			W			GG+BD		Herpes labialis	N		Herpes labialis
87	409670	Manjula	38	F	Lesions over lip , nose x 3 days	P			W			GG+BD		Herpes labialis	N		Herpes labialis
88	498762	Davalsat	23	M	Lesions over lip x 5 days	P			W			YB+BD		Herpes labialis	N		Herpes labialis
89	272695	Tejas	4	M	Lesions over face, lip x 4 days	P	C	G	Y crusts					Impetigo	N		Impetigo
90	386665	Shreshai	27	M	Asymptomatic lesions over lip x birth, gradu	BG					Perifollicular hypo			CMN	N		CMN
91	257624	Shreisha	52	M	Lesion over lip x 1 year	P	D	L,D,G,	Y crusts		Plugs, white halc	White circles, whi	White structureless areas, Red clods	SCC	Y	5083/23	SCC
92	436867	Mahante	59	M	Painful lesion over lip following trauma x 3 d	P	D	D,G	Y crusts					Traumatic lip in	N		Traumatic lip injury
93	317424	Nithin	35	M	Painful lesion over lip following burns x 2 da	P	C	D,G	Y crusts					Traumatic lip in	N		Traumatic lip injury
94	392568	Seetavvı	68	F	Fluid filled lesions over lipsx 3 day	P			W			GG+BD+PH		Herpes labialis	N		Herpes labialis
95	369674	Savitha	45	F	Dark lesions over lip x 3 months	V	P	D	W	VG		RTWS		Lichen planus	N		Lichen planus
96	110962	Sakkuba	60	F	Swelling of lower lip with tingling sensation x	E	D	D,T	W			YO area		Granulomatou	Y	1583/24	Granulomatous cheilitis
97	114123	Shobha	45	F	Fluid filled lesions over lips x 3 days	P			W			GG+BD+PH		Herpes labialis	N		Herpes labialis
98	118190	Renuka	44	F	Asymptomatic dark lesions over lower lip x	LB	overlapping vessels		A	parallel lines		landscape pattern		Labial melanoti	N		Labial melanotic macule
99	118665	Akash	25	M	Itchy dark lesion over arms, legs, lips x 2 mo	V	P	D	W	VD		LWS, RTWS		Lichen planus	N		Lichen planus
100	92653	Nutan Na	13	M	Darkening of lips x 2 weeks	E	C	D	Y				Fissures, yellow crusts	contact cheilitis	N		contact cheilitis

101	88696	Ramesh	33	M	Itchy, painful lesions over angle of mouth x 1	Dull red			W				Fissures			Angular cheilitis	N		Angular cheilitis
102	2530	Rudrago	55	M	Dark lesions over lip x 2 months	WR	D	POL	Y			U				Actinic cheilitis	N		Actinic cheilitis
103	187564	Shanta	18	F	Dark lesions over lips x 5 years	DB	ABSENT		A	circle lines		landscape pattern				Labial melanotic	N		Labial melanotic macule
104	91006	Soumyas	32	F	lesions over lip x 3 months	P	D	D,G	Y crusts							Pemphigus vul	N		Pemphigus vulgaris
105	78648	Arun Gar	37	M	Burning sensation over lower lip x 8 years	WR	D	POL	W							Actinic cheilitis	N		Actinic cheilitis
106	68037	Manjula	18	F	Fluid filled lesions over lips x 1 week	P		D	W			GG+BD				Herpes labialis	N		Herpes labialis
107	370205	Sukanya	20	F	Dark lesions over lip x 2 months with H/o lip	Brown			W				Fissures			contact cheilitis	N		contact cheilitis
108	76843	Ajit Jadh	23	M	Dark lesions over lips , oral cavity x 6 month	V	P	D	W	VG		LWS, LFWS				Lichen planus	N		Lichen planus
109	69792	Pavitra C	20	F	Dark lesion over upper lip x birth , gradually i	DB	ABSENT		A	IDG						Labial melanoti	N		Labial melanotic macule
110	69200	Sahebgo	49	M	Gradually increasing size of lesion over low	P	D	A,D,G,POL				White circles	White structureless areas, Red homogenous a			SCC	Y	969/24	SCC
111	274414	Mudakap	45	M	Itchy lesions over ears, lips x 2 weeks	E	P	D,G	W		D,P	Rosettes				DLE	N		DLE
112	280493	Hanamar	65	M	Painful lesions over angle of mouth x 1 week	P			W				Fissures			Angular cheilitis	N		Angular cheilitis
113	280675	Mallappa	70	M	Fluid filled lesions over lips x 1 week	P			Y			GG+BD				Herpes labialis	N		Herpes labialis
114	299494	Chanaba	32	M	Dark lesions over lips on and off x 7 months	E	P	D,G,T	y crusts	Bluish-grey globules			Erosion +			FDE	N		FDE
115	305271	Mallikarju	28	M	Darkening of lips x 2 years	V	P	D	Y	VD		LWS				Lichen planus	N		Lichen planus
116	313075	Renuka	40	F	Itchy lesions over forearms , palms, legs, lip	P			W			GG+PH				Herpes labialis	N		Herpes labialis
117	320446	Humabai	60	F	Burning sensation over lower lip x 2 months	WR	P	POL	Y			U				Actinic cheilitis	N		Actinic cheilitis
118	129355	Sangeeth	14	F	Lesions over lips x 1 year	E	D	D,G,	W				Fissures			contact cheilitis	N		contact cheilitis
119	332740	Akhilesh	22	M	Light colored lesions over lips x 6 months	W	D	D,LB	A	DWG		PP				Vitiligo	N		Vitiligo
120	336177	Pradeep	27	M	Lesions over lips x 6 months	V	D	D,G	W	VD		RTWS				Lichen planus	N		Lichen planus
121	236878	Nirmala	36	F	Dark colored lesions over lips x 8 months	V	P	D	Y	VG		SBWS				Lichen planus	N		Lichen planus
122	363312	Kalavath	50	F	Asymptomatic lesions over lips x 2 years	R	P	D,LB	W	VD		SBWS				Lichen planus	N		Lichen planus
123	381477	Soumya	19	F	Lesions over lips x 4 days	E	D	D	W							contact cheilitis	N		contact cheilitis
124	165610	Padmaja	38	F	Itchy lesions over lips, scalp , face x 2 month	V	P	D	W	VG		LWS, SBWS				Lichen planus	N		Lichen planus
125	390813	Sharubai	25	F	Itching , swelling , darkening of lips x 4 month	WR	C	D	W							Actinic cheilitis	N		Actinic cheilitis
126	394048	Shankar	25	F	Red lesions over lip x 1 year	Brown			W				Fissures			contact cheilitis	N		contact cheilitis
127	394202	Sandeep	24	F	Burning sensation over lip x 2 months	P			W				Fissures			Angular cheilitis	N		Angular cheilitis
128	169087	Asharani	35	F	Lesions over lips x 2 weeks	E	D	D	W							contact cheilitis	N		contact cheilitis
129	364286	Shreedev	45	F	Dark colored lesions over lips x 1 months	V	P	D	W	VD		LWS				Lichen planus	N		Lichen planus
130	262553	Asha	54	F	Burning sensation over lips x 5 months	E	P	D,G	W		D	Rosettes				DLE	N		DLE
131	1184	Mairun	60	F	Itchy lesions over trunk, face, lips x 15 days	E	P	T	W		D,P					DLE	N		DLE
132	4232	Tararani	40	F	Itchy lesions over forearms , hands, ears, lip	V	P	D	W	VD		LWS				Lichen planus	N		Lichen planus
133	265388	Anusha	25	F	Red lesions over lips x 2 months	R	D	D,G,LB	W	VD		RTWS				Lichen planus	N		Lichen planus
134	3376	Sukanya	45	F	Darkening of lips x 5 months	Brown	C	G		brown dots, globules						Labial melanos	N		Labial melanosis
135	180382	Suman	32	F	Dark lesions over lips, foreheard, trunk x 2 y	V	P	D	W	VG		LWS				Lichen planus	N		Lichen planus
136	264857	Shantam	65	F	Fluid filled lesions over lips x 4 days	P			Y			GG+BD				Herpes labialis	N		Herpes labialis
137	69792	puvatra	36	F	Dark lesion over upper lip x birth , gradually i	DB	ABSENT		A	circle lines						Labial melanoti	N		Labial melanotic macule
138	268465	Guru	36	M	asymptomatic lesion over upper lip asso wi	HomoRed+WA	D	D,G,T	W			White colarette	White rails			Pyogenic granu	N		Pyogenic grauloma
139	114323	veena	34	F	dark lesion over lower lip x 3 years	LB	overlapping vessels		A	parallel lines		landscape pattern				Labial melanoti	N		Labial melanotic macule
140	125647	supreet	10	M	Asymptomatic lesion asso with bleeding ov	HomoRed+WA	D	D,G	W			White colarette	White rails			Pyogenic granu	Y		Pyogenic grauloma
141	145926	Gangami	40	F	Itchy lesion over lower lip , face , ears x 3 mc	WR	P	T	W		D					DLE	N		DLE
142	151807	veeresh	37	M	dark lesions over lips x 2 months	V	P	D	W	VD		RAWS				Lichen planus	N		Lichen planus
143	156700	Jagirdha	59	M	lesion over upper lip gradually increasing in size x 8 months											SCC	Y		Benign Squammous papilloma
144	253475	Jagadee	48	M	Light colored lesions over lips x 20 years	E	D	D,LB	A	DWG		PSE				Vitiligo	N		Vitiligo
145	164586	Somashe	38	M	Light colored lesions over lower lip x 3 years	W	D	D,T,LB	A	REDUCED						Vitiligo	N		Vitiligo
146	180946	lalitha	45	F	Dark lesions over lower lip x 4 months	V	P	D,G	W	VG		RAWS				Lichen planus	N		Lichen planus
147	361523	sowmya	36	F	Dark lesion over lower lip x 5 years	LB	overlapping vessels		A	parallel lines		landscape pattern				Labial melanoti	N		Labial melanotic macule
148	275458	Sandhya	15	F	Light colored lesions over lips x 2 years	E	D	D,LB	A	DWG		PSE				Vitiligo	N		Vitiligo
149	362198	Veeresh	38	M	Lesions over lips x 2 months	E	D	D,G	Y crusts			Erosion+				Pemphigus vul	N		Pemphigus vulgaris
150	212773	Ramesh	40	M	Lesions over lips x 3 months	E	D	D,G	Y crusts			Erosion+				Pemphigus vul	N		Pemphigus vulgaris