"A CROSS SECTIONAL STUDY TO ASSESS THE ROLE OF DERMOSCOPY IN DIFFERENTIATING PALMAR PSORIASIS AND CHRONIC HAND ECZEMA IN PATIENTS ATTENDING A TERTIARY CARE HOSPITAL"

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LIST OF ABBREVIATIONS USED

Sl. No.	Abbreviation	Expansion
1	HLA	Human leucocyte antigen
2	CDSN	Corneodesmosin
3	IL	Interleukin
4	NF-κB	Nuclear factor kappa light chain enchancer of activated B cells
5	CD	Cluster of differentiation
6	TNF-α	Tumour necrosis factor alpha
7	TGF-β	Transforming growth factor beta
8	IFN-γ	Interferon gamma
9	GM-CSF	Granulocyte-macrophage colony –stimulating factor
10	VEGF	Vascular endothelial growth factor
11	ICAM-1	Intercellular Adhesion molecule-1
12	APC	Antigen presenting cells
13	AMPs	Antimicrobial peptides
14	CCL	C-C motif chemokine ligand
15	PsA	Psoriatic arthritis
16	CUS	Contact urticaria syndrome
17	HE	Hand eczema
18	ICD	Irritant contact dermatitis
19	SPINK	Serine protease inhibitor kazal type 1

20	**ACD**	**Allergic contact dermatitis**
21	**EIP**	**Eczema in psoriatico**
22	**Pso**	**Psoriasis**

ABSTRACT

Background: Due to overlapping clinical features, the differentiation between palmar psoriasis and hand eczema forms a difficult task. In such caseshistopathological analysis aids in many cases to differentiate the two conditions.But is not always feasible owing to the invasive nature of the diagnostic procedure.

Dermoscopy acts as a diagnostic method that utilizes optic magnification to permit the visualization of morphological patterns and structures that are less visible to the naked eye,thus, forming a link between macroscopic clinical dermatologyand microscopic dermatopathology.

Hence we undertook this study to assess the roleof dermoscopyand study their specific dermoscopic features in biopsy proven cases of palmoplantar psoriasis and hand eczema so as to assist in the clinical diagnosis and obviate the need of doing skin biopsy.

Objective: Tostudy the dermoscopic features in biopsy proven cases of palmar psoriasis and chronic hand eczema.

Materials and methods: This was a hospital based observational cross sectional study carried out from 1st January 2019 to 31st December 2019 in 60 patients. The source of the data were patients who on history and clinical examination having palmar psoriasis or hand eczema attending the Dermatology Opd, at KLE'S Dr. PrabhakarKore Hospital, Belagavi. Those with hyperkeratotic lesions over palms other than psoriasis/ eczema were excluded. Of the clinically recruited patients, photographs of the lesions were taken.Dermoscopic examination of the lesions over palms was performed using a video dermatoscope- Dinolite premier AM4113ZT model and there images were captured and recorded for the study. A 4mm biopsy over the palms was done under aseptic conditions and sent for

histopathologicalexamination to confirm and a diagnosis was made upon clinical ,dermoscopic and histopathological correlation into either palmar psoriasis /hand eczema/eczema in psoriatico. The data was noted in a pre-designed proforma. The results were tabulated and analysed using SPSS 20.00 version. Chi-square test was used wherever applicable. Fleiss kappa was used to check for agreement between the methods. Sensitivity, specificity, positive predictive value, negative predictive value of the data was calculated.

Results: Our study showed a male predominance 63.3% (38/60). The common age group affected in palmar psoriasis was 60 years and above, in hand eczema between 20-29 years and in eczema in psoriatico between 40-49 years. Mean duration of the onset of the lesions were 1.73 years. In palmar psoriasis , there was a significant aggrevation of disease in winters 89.4% (34/38). Predominantly pitting 55.2% (21/38) followed by onycholysis39.4% (15/38) and subungual hyperkeratosis 36.8% (14/38) were the nail changes observed in patients of palmar psoriasis. There was insignificant nail involvement in those with eczema 14.2% (2/14). Commonest allergen causing hand eczema, according to history were detergents and pesticides 35% (5/14) each followed by cement 21.4% (3/14).

On dermoscopy, characteristic features of palmar psoriasis were diffuse 76.3% (29/38) white scales 60.5% (23/38) , dotted 76.3% (29/38) vessels next to glomeruloid 15.7% (6/38) vessels in a regular distribution 71% (27/38) over a light red background 65.7% (25/38). In hand eczema, diffuse 57.1% (8/14) white and yellow scales 57.1% (8/14) with dotted 78.5% (11/14) vessels in a patchy distribution 57.1% (8/14) over a yellowish dull red background 57.1% (8/14) with additional brownish-orange dots/globules 35.7% (5/14) and yellow-orange clods 21.4% (3/14). In eczema in

psoriatico diffuse 75% (6/8) white and yellow scaling 62.5% (5/8) with regular 50% (4/8) dotted 87.5% (7/8) to undifferentiable vessels 12.5% (1/8) over a background erythema of light red 37.5% (3/8) to yellowish dull red 37.5% (3/8).

On biopsy of lesions, characteristic features noted in palmar psoriasis were presence of regular acanthosis 94.7% (36/38), mild spongiosis 76.3% (29/38), few fibrin globules 60.4% (23/38) with neutrophils in epidermis 63.1% (24/38) , hypogranulosis 78.9% (30/38), psoriasiform hyperplasia 81.5% (31/38) and suprapapillary thinning 86.8% (33/38) with presence of dilated capillaries 97.3% (37/38) in dermis. In hand eczema characteristic features were moderate 28.5% (4/14) to severe spongiosis 14.2% (2/14), irregular acanthosis 78.5% (11/14), few plasma mounds 50% (7/14), preserved granular layer 64.2% (9/14), absent psoriasiform hyperplasia 64.2% (9/14). Eczema in psoriatico showed mixture of the two.

Limitations: Inability to perform patch test for eczema patients due to lack of availability.

Conclusion: According to our study, with dermoscopythere was 92% sensitivity, 82% specificity for diagnosing palmar psoriasis and 100% sensitivity, 85% specificity for diagnosing hand eczema. Hence dermoscopy acts as a accurate tool to study the specific features and should be used as a routine method. It would aid in diagnosing doubtful cases and also in differential diagnosis which may evade the need for biopsy in most instances.

Keywords: Dermoscopy, Palmar psoriasis, Hand eczema, Histopathology

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INTRODUCTION

Psoriasis is a inflammatory, papulosquamous, hyperproliferative chronic condition , with remissions and exacerbations where genetic and environmental factors play a major role.[1] Clinically over the body it presents as sharply well demarcated erythematous plaques covered by silvery white scales.[2]

Palmoplantar psoriasis causes a remarkable social and functional disability. Presents as well defined erythematous silvery white scaly patches along with overhanging of scales peripherally on palms, tips of digits , sides of fingers, extensor joint surfaces.[3] The hyperkeratotic plaques at times may resemble chronic hyperkeratotic eczema. [4] Involvement of knuckles, eminences of palms favour the diagnosis of psoriasis.[5]

Hand eczema is a distressing common condition affecting the quality of living due to its effects on dexterity, appearance and social functioning. Another name of hyperkeratotic palmar eczema is 'tylotic eczema.[6] It presents as well defined scaly fissured hyperkeratotic patches-plaques proximally or over the centre of palms, volar surfaces of fingers.[7]

Due to overlapping clinical features, the differentiation between palmar psoriasis and hand eczema forms a difficult task. In such cases histopathological analysis aids in many cases to differentiate the two conditions. But is not always feasible owing to the invasive nature of the diagnostic procedure.[8]

Dermoscopy is a diagnostic method that utilizes optic magnification to allow the visualization of patterns and structures that are less visible to the naked eye, thus, forming a link between macroscopic dermatology clinically and microscopic dermatopathology.[9]

Hence we undertook this study to assess dermoscopy role and study their specific dermoscopic features in biopsy proven cases of palmoplantar psoriasis and hand eczema so as to assist in the clinical diagnosis and reduce the need of doing skin biopsy.[10]

AIMS AND OBJECTIVES

Primary objective: To study the dermoscopic features in biopsy proven cases of palmar psoriasis and chronic hand eczema.

REVIEW OF LITERATURE

HISTORY

The term 'lepra' was applied to psoriasis, vitiligo, eczema, boils and alopecia areata.[11] The term 'Psora' means to Itch.[11] The foremost psoriasis clinical description was given by Aurelius Celsus. Hebra differentiated psoriasis from those of leprosy.[12] Pioneer person to use the term psoriasis was Galen. The term Willan's lepra/ Lepra vulgaris, which was a form of psoriasis was named after Robert Willan, who gave its clinical description in detail.[13,14]

Eczema literally means "boil out" (Gk. ekzema, from ek = out, zema = boil). It is a inflammatory skin condition with varied aetiologies.[15] In the sixth century the term was introduced by a physician named Aetius Amidenus.[16]

The term "Dermatoscopy" was given by Saphier .[17] In 2001 at rome world dermoscopy Congress was first conducted.[18] Features of various nonpigmented diseases was described in detail by Iris Zalaudek et al.[19]

EPIDEMIOLOGY

According to various studies, psoriasis occurance varies in different set of populations in several parts of the world from 0% to 11.8%.[20,21,22,23]

Due to two peaks of onset, two types of psoriasis have been described. Type I shows HLA Cw6 association with high familial prevalence, contributes to maximum number of cases (>75%). Seen between the ages of 15-20. Type II is a less severe form , usually seen after 40 years of age. Familial history is more in childhood 9.8-28% than in adult-onset psoriasis.[24]

Among boys and girls the peak age of onset is between is between 6-10 years and 11-15 years respectively .[25] A slight male preponderance is seen in adult form. North Indian hospital-based studies shows adult form to be between 0.44 to 2.8%, with a less prevalence in children.[14]

Among all psoriasis cases , only palmoplantar accounts to 3 - 4% of cases.[25]

Eczema is the commonest , afflicting the hands. It is also a very common occupational skin disease.[26] As it is less reported , it is a difficult task to get the exact statistics because not many may seek medical help.[16]

At some point in life around 2-10% are prone to attain hand eczema . 20-35% affects hands , among all dermatitis. It is the commonest occupational skin disease with 9-35% prevalence among varied occupations and around 80% of all occupational contact dermatitis.[27] Due to household chemicals and wet work, females are more vulnerable than males.[28]

PSORIASIS

ETIOPATHOGENESIS

Psoriasis is a inflammatory disease of skin, nails and joints with typical cutaneous lesions, having a multifactorial origin such as environmental triggers acting upon individuals already with genetic susceptibility leading to an immune dysregulation, both innate and adaptive with abnormal keratinization .[29,30,31]

TRIGERRING FACTORS

- **Seasonal Variation**

Most of individuals show winter exacerbation. Sunlight improves psoriasis in many, whereas it exacerbates in few.[32]

- **Emotional Stress**

It is a 'stress sensitive' disease. On acute stress , an abnormal hypothalamic–adrenal axis response occurs which increases beta-endorphin causing neurogenic inflammation by substance- P.[33]

Stress may increase the neuropeptide content in the lesions by decreasing in activity of enzymes that breakdown neuropeptides, such as mast cell chymase.[34]

- **Infections**

Guttate psoriasis may be preceded by tonsil infection caused by streptococcus pyogens.[35] Common in children , with strongest association to HLACw6 [36] and is usually associated with increased antistreptolysin 'O' titer, whereas disease exacerbates by staph.aureus , Malassezia species and Candida albicans.[37,38]

- **Local Factors**

Koebner phenomenon or isomorphic response is seen in psoriatic lesions following cutaneous trauma, of any form - physical, chemical, thermal, mechanical, allergic or of any other nature.[39] Such response is produced by trauma causing epidermal cell injury and dermal inflammation. More prone when there is a disease flare up or it is unstable , also more frequent in winter than summer season.[40]

- **Drugs** [31,41,42]

Drugs may either trigger or induce psoriasis.

Drug triggered psoriasis – psoriasis is induced on clinically normal skin in patients with the disease.

Drug induced psoriasis – in genetically vulnerable patients ,precipitation of the disease is seen.

Examples for provoking psoriasis are commonly lithium, also beta adrenergic receptor blockers, tetracyclines, chloroquine, non-steroidal anti-inflammatory drugs.

Exacerbating psoriasis are by captopril, enalapril, calcium-channel blockers ,interferons, digoxin, penicillin antibiotics, clonidine, carbamazepine, anti-epileptic, morphine and acetazolamide.

- **Alcohol and Smoking**

Smoking has a additive effect to develop psoriasis.[43] Complexity exists between psoriasis and alcohol intake as it is multifactorial, but its abuse definetly correlates with psoriasis severity and decrease in treatment efficacy.[44]

ROLE OF GENETIC FACTORS

They play a important part in the pathogenesis. Many HLA haplotypes are involved. 35-50% of heritability is due to PSORS1 on chromosome 6 region of HLA Class I, it possess both CDSN gene and HLA-C-*06. HLA-C-*06 has a role in presenting antigen , reflecting adaptive immunity in psoriasis.[45,46]

Another risk factor is the corneodesmosin (CDSN) gene, which encodes differentiated keratinocytes indicating dearranged barrier function for psoriasis development.[47]

An increased frequency of HLA-B13, HLA-B17 and HLA-Bw16 are also asscociated with psoriasis.[48,49,50]

Signaling by IL-23A, 23R ,12B and by IL-4, 13 which are Th2 immune responses along with nuclear factor (NF) κB signaling on various genes leads to inflammatory pathways having association with psoriasis.[51,52]

Psoriasin gene expressing the psoriasin , acts as mediator in functioning of involucrin, desmoglein 1, transglutaminase 1 and CD24 in differentiation process , thereby its overexpression is seen in psoriatic epidermis.[53]

ROLE OF IMMUNITY

- **T cell Activation**

T cells participate in induction and maintenance of the cutaneous lesions in psoriasis. T helper cells are CD 4+, suppressor cells are CD 8+. These T-cells are possibly activated by antigens presented by langerhans cells, dermal, plasmacytoid and myeloid dendritic cells.[54]

The antigen stimulation leads to conversion of the naïve T cell into an active T cell ,that get converted into a memory T cell later. Naive T-cells get converted into one of the 4 types of inflammatory cells Th1, Th2, Th17 or T regulatory cells depending upon TNF-α, TGF-β and IL-6.[55] By TGF-β and IL-6 presence, naive T-cells transform into Th17 cells.[56]

Activated T cells are the first line in the pathogenesis of psoriasis.[57,58] In regional lymph node they enter the circulation and migrate to inflammatory site in skin and produce the Th1-Th2-Th17 imbalance.[59]

Abnormal regulation of T cells along with immense network of cytokines and keratinocytes interaction is involved in the pathogenesis.[60,61]

- **Cytokine Mediators**

There is a complex and multi-dimensional network involving TNF-α, IFN-γ, IL-1, IL-2, IL-8, IL-12, IL-17, IL-22, IL-23, GM-CSF,VEGF. [62]

- TNF-α causes stimulation of keratinocytes to release IL-8, ICAM-1, TGF-α, β-defensins and stimulates endothelial cells to secrete VEGF. Increases proliferation of epidermal cells and macrophage cytokine secreting capacity.[62,63,64]
- IFN-γ has a anti-proliferative effect on normal keratinocyte, causes stimulation of ICAM-1 present on endothelial and skin cells, causes trafficking of the of T lymphocytes into the epidermis having lesions. Enhances APC activity, TNF-α release by phagocytes and upregulation of receptors of TNF-α.[62,65,66]
- IL-2 regulates the production of TNF-α and IFN-γ.[55]
- IL-6 produced by keratinocytes along with TNF-α, mediates T-cell activation, proliferation of keratinocyte and participates in acute phase inflammation.[55]
- IL-8 is increased under the stimulation of TNF-α.[55]
- IL-17 stimulates keratinocytes to produce β-defensins, AMPs, IL-8, CCL20, CCL2.[55]
- VEGF produced by Keratinocytes, Macrophages, mast cells leads to dermal angiogenesis.[55]

HYPERPROLIFERATION OF KERATINOCYTES

The time taken to complete a cell cycle in hyperproliferating psoriatic keratinocytes is short i.e takes 4 days in psoriasis for maturity and shedding of keratinocytes , while it is 26 days in normal circumstances.[63]

ANGIOGENESIS

Correct mechanism is unclear. VEGF, IL-8 are pro-angiogenic released from keratinocytes . In a developing lesional plaque, endothelial cells are swollen with Golgi apparatus and Weibel-Palade bodies being prominent.[67] They move out , sprout, and lay a Basement membrane with pericytes for giving support to form naive vessel networks.[68]

Swelling of endothelial cells causes broadening of intercellular spaces , allow dermal blood vessels to dilate. The lesional capillary loops adopt a phenotype similar to veins having bridged fenestration with E-selectin expression making it easy for leukocyte trafficking into the skin.[69]

CLASSIFICATION [70,71,72]

- **CLASSICAL TYPES**

- Psoriasis vulgaris
- Guttate psoriasis
- Pustular psoriasis
- Psoriatic arthritis
- Erythrodermic psoriasis

- **LOCALISED TYPES**

- Scalp
- Face
- Eyes
- **Palms and Soles : Palmoplantar**
- Nail : psoriasis unguis
- Flexural
- Penis, scrotum, napkin area

- **MORPHOLOGICAL TYPES** [73]

- Follicular
- Circinate
- Annular
- Nummular
- Linear
- Lichenoid
- Guttate
- Gyrate
- Zonal
- Verrucous
- Inverse

PALMOPLANTAR PSORIASIS [71]

Palmoplantar lesions can occur solely or along with other body area involvement. In most cases it presents as well defined, less scaly and the surface usually shows fissures. Three forms of lesions can occur at these sites: [25,74]

- Diffuse hyperkeratotic plaques.
- Erythematous patches to plaques studded with multiple minute superficial pustules.
- Discrete scaly plaques or patches.

Noble distinguished four morphologies clinically : [75]

1. Typical erythematous patches with sharp margins and covered by adherent thick psoriatic scales.
2. Presence of rhagades and scaling with diffuse mild hyperkeratosis.
3. Thick hyperkeratotic plaque mimicking palmoplantar hereditary keratoderma.
4. Diffuse erythema.

The hyperkeratotic psoriatic plaques is at times difficult to differentiate from hyperkeratotic eczema , but the degree of erythema , well demarcated nature , hyperkeratosis over knuckle pads favours psoriasis.[25]

Possibly due to Koebner's phenomenon palmoplantar psoriasis was frequently seen in agriculturists, manual laborers, and housewives. The lesions usually were symmetrical on both palms even though one palm i.e dominant hand of manual workers is involved. The classic sites on the palms were pressure points. Also plantars, instep, boundary of feet, and heel were involved . Whereas web spaces , the mid or distal aspect of palm, toes with distal sole are less frequently affected. Extension of the lesion on to the dorsum of the palms and soles can occur.[25,74]

A greater number are symptomatic , with itching being the major complaint in 67% followed by irritation, bleeding, burning, fissuring representing a serious disabling.[76] With aggrevation in winters.[4,77]

PSORIASIS UNGUIS

Nail changes are common in psoriasis patients , up to 40 -45% and in about 87 % of patients with PsA.[78,79]

The nails of fingers are more commonly involved than toes. Several distinct changes have been described and can be grouped according to the part affected.[80]

Site involved	Clinically
Proximal matrix	Pits, vertical ridges, Beau's lines
Intermediate matrix	Leukonychia
Distal matrix	Onycholysis, erythema of the lunula
Nail bed	"Oil drop" sign, subungual hyperkeratosis, lifting up of nail, splinter haemorrhages
Hyponychium	Subungual hyperkeratosis, Seperation of nail plate
Nail plate	Crumbling
Nail folds	Cutaneous psoriasis

In psoriasis of palms and soles involvement of nails is upto 23.43%.[4] The most common nail changes observed are predominantly coarse pitting and subungual hyperkerakosis followed by longitudinal ridges.[4,25]

PSORIATIC ARTHRITIS (PsA)

Is an inflammatory arthritis with a negative test for rheumatoid factor. Associated joint involvement was seen in around 6% of palmoplantar psoriasis.[25]

Five patterns of arthritis occur clinically: [81]

- Asymmetrical distal interphalangeal joint involvement with damaged nails (16%)
- Arthritis mutilans with osteolysis of phalanges and metacarpal bones (5%)
- Symmetrical polyarthritis-like rheumatoid arthritis, with clawing of hands (15%)
- Oligoarthritis along with swelling and tenosynovitis of hand joints (70%)
- Ankylosing spondylitis alone or with peripheral arthritis (5%)

HISTOPATHOLOGY [82,83]

Differentiating palmo-plantar psoriasis and hand dermatitis is a task due to clinical and histopathological overlap

PSORIASIS [84-91]

There is confluent parakeratosis associated / alternating with focal orthohyperkeratosis and the presence of neutrophils in the stratum corneum (Munro microabscesses), decrease / near absence of the granular layer, Malpighian layer accommodating neutrophils i.e spongiform pustules of kogoj, psoriasiform hyperplasia of epidermis with regular acanthosis i.e elongated clubed rete ridges with suprapapillary thinning. In the below half of the epidermis there is leukocyte infiltration of mononuclear cells with mild spongiosis. Edematous papillary dermis with dilated and tortuous papillary blood vessels surrounded by a mixed mononuclear and neutrophilic infiltrate and extravasated erythrocytes.

Palmoplantar psoriatic lesions may cause diagnostic difficulties because of lack of typical psoriatic pattern , spongiosis , variability in thickness of stratum granulosum.[92]

Previous studies by Aydin et al.,[93] Cesinaro et al.[94] showed up parakeratosis : confluent parakeratosis / vertical alternation of hyper-orthokeratosis with parakeratosis , polymorphonuclear neutrophils in the outermost layer of epidermis, hypogranulosis, regularly arranged acanthosis and suprapapillary thinning, dermal edema are seen in majority of biopsies of palmoplantar psoriasis

Hesari et al. demonstrated dilated vessels in around 64% of cases.[95]

HAND ECZEMA (HE)

Denotes " the dermatitis often confined to the hands, with no or less involvement of other areas."

CLASSIFICATION OF HAND ECZEMA [6,96-101]

ETIOLOGICAL CLASSIFICATION

- **ENDOGENOUS**
  - **IMMUNOLOGICAL-atopic hand dermatitis :**

It is the most common endogenous cause . The involvement may be patchy and discoid pattern over palms , on the wrists and dorsal aspects of the hands ,foot. [102-104]

  - **IDIOPATHIC :** seen as discoid / hyperkeratotic palmar eczema
- **EXOGENOUS**

- **Irritant contact dermatitis (ICD)**
- **Allergic contact dermatitis (ACD)-** Diagnosed by patch testing.[105]
- **Protein contact dermatitis / "Contact urticaria syndrome" (CUS)**

It is the immunologic type I hypersensitivity reaction mediated by allergen-specific immunoglobulin E in a sensitized person , a variant of CU that is related to hand eczema. Is a part of transient inflammatory reactions.[106]

There will be flares of urticarial or vesicular lesions within minutes of contact with the proteins of fruits, vegetables, spices, plants, animal proteins, grains, and enzymes, lasting from 30 minutes to 3 hours. Food handlers, cooks, caterers, and housewives are at major risk. Also pricking , burning, or itching is observed. This recurrent dermatitis, on repeated chronic exposure develops eczema. Fingertips are commonly involved. The gold standard diagnostic test is skin prick testing. Reactions appear within 20 minutes. Histamine and saline are the positive and negative control respectively.[107-109]

MORPHOLOGICAL CLASSIFICATION [6,16,107]

- **Pompholyx / Vesicular eczema of palms and soles / dyshidrotic eczema**

Is a recurrent deep-seated eruption of vesicles of idiopathic ⁄ unknown origin over the palms (cheiropompholyx) and soles (podopomphoylx) together recognized as palmoplantar pompholyx.[110] It accounts upto 5-20% of cases.[111,112] Characterized by intensely pruritic , tense crops of "sago-like" vesicles on palms, and sides of the fingers, plantar aspects of feet . More with palmoplantar hyperhidrosis, hot weather, atopy. Pustules and lymphangitis are seen due to secondary infection .[16,107]

- **Recurrent focal palmar peeling / desquamation en aires**

It is a pompholyx milder form, characterized by asymptomatic superficial white desquamation over the palms and sides of fingers, with no vesicles. Later may subsequently develop into true pompholyx.

- **Patchy vesiculosquamous eczema**

Characterized by asymmetrical irregular patchy vesiculosquamous lesions over both hands

- **Hyperkeratotic palmar eczema / tylotic eczema**

Characterized by well-defined hyperkeratotic, patches to plaques with scaling and fissuring on the palms, and palmar surfaces of the fingers with no vesicle formation. Can involve plantar aspect of feet . It is usually seen in middle aged men.

- **Nummular/ Discoid eczema**

These are well-circumscribed annular or oval i.e coin shaped plaques with vesicular eruptions on a erythematous base, oozing with pruritis in the acute phase. It is confined to the dorsum of hands or fingers . Related to infection- Staph.aureus, trauma, allergy, atopic xerotic skin, anxiety , methyldopa and gold.

- **Wear and tear dermatitis/ Housewives dermatitis/ Dermatitis palmaris sicca/ Frictional dermatitis/ Fissured hand eczema**

This is dry eczema with superficial fissuring , scaling and few hyperkeratotic areas. With minimal oozing and pruritus . Seen in individuals with constant

exposure to detergents and water such as housewives and cleaners ,with longstanding HE persisting for months to years.

- **Ring eczema**

An irritable eczematous patch under a ring which spreads to adjacent sides of the middle finger, palm. Probably due to friction, collection of soap and detergent beneath rings . Less frequently, allergic contact dermatitis due to nickel, gold, and palladium seen in young women.

- **Finger tip eczema**

Also termed as "pulpite" in France, as it localizes to the pulps rather than the backside of the fingers. Dry and glazed "parchment pulps," with hyperkeratotic plaques, painful fissures and vesiculation, which may extend to merge with eczema over the palm.

Two patterns are seen. The first and the commonest is a cumulative irritant dermatitis over the fingers of dominant hand especially thumb and index , by degreasing agents in combination with trauma showing negative patch tests.

The second pattern indicates occupational dermatitis as it involves first, forefinger and middle finger of the working hand, suggesting allergy towards polish oils, tulip bulbs or irritation while delivering newspapers. Over non-dominant hand, in cooks there is eczema towards vegetables when held.[113]

- **Apron eczema**

Described by Calnan.[114] The pattern of involvement is similar to an apron as it involves the palmar aspect of two or more contiguous fingers proximally along with adjoining palmar skin over the metacarpophalangeal joints. It is endogenous in origin.[115]

- **Gut/slaughterhouse eczema**

Recurrent transient eczema with vesicular eruption over web spaces , sides of fingers with uncertain pathogenesis most commonly seen in employees dealing with evisceration of carcasses of animals in slaughterhouse.[116]

- **Chronic acral dermatitis**

Shows no history of atopy but with high levels immunoglobulin (Ig) E . Having hyperkeratotic papulovesicular eczema over palms and soles with pruritis, seen in mid-aged persons.[117]

- **Interdigital eczema**

Scaling with redness in the interdigital spaces, with vesicles rarely.

PREDISPOSING FACTORS

- **Atopic dermatitis**

Chances of developing hand eczema in adults with bad prognosis is more possible if the patient had childhood atopic dermatitis with psychosomatic stress and dyshidrosis.[6,16,118]

Irritant contact dermatitis

More with primary atopy history, Irritants like soaps , detergents, , alkaline agents, mineral and cutting oils, Solvents, rubber , vegetables along with wet work , physical friction and trauma are causative.[96]

A person is more prone if he/she does in a day ,wet work or wears occlusive gloves for more than 2 hours, washes hands > 20 times.[119,120]

- **Allergic contact dermatitis**

It may be the only factor or may be in combination with irritant dermatitis and/or atopic dermatitis. The causative allergens commonly detected include nickel, cobalt, fragrance-mix, balsam of Peru, and colophony,[121,122] formaldehyde,[123] methyl dibromo glutaronitrile,[124] parthenium hysterophorus.[125]

- **Genetic Factors**

Claudins form a major component of the tight junctions between cells of stratum corneum, thus help in preventing moisture loss and blocks access to various external environmental allergens . In claudin-deficient patients , there is defective epidermal barrier function with altered cornified epidermal envelope due to loss of involucrin, envoplakin, and periplakin.[126]

Proper control of skin proteases is required to maintain equilibrium of the epidermis. SPINK hinders serine protease elastase-2 , on its deficiency there is alteration of filaggrin and lipid (ceramide) processing due to increased protease activity. Thereby leading to decreased skin barrier function.[16]

Filaggrin helps in cytoskeletal aggregation and cornified epidermal envelope development, and is present in lamellar bodies of granulosum layer corneocytes. Upon maturation of corneocytes, it segregates into acidic metabolites, which help to maintain hydration , and preventing the activation of Th2-inducing endogenous serine proteases by maintaining the pH below the requirement. Overall, a filaggrin mutation leads to a disruption of epidermis, more vulnerable to environmental allergens followed by inflammation, water loss resulting in atopic hand eczema.[127,128]

- **Environmental factors**

Certain occupations are particularly prone to hand eczema such as barbers, fisherman, farmers, construction workers, medical personnel, metal workers and caterers.[129-138]

PATHOGENESIS

- **Irritant contact dermatitis** [139]

An irritant with appropriate dosage , duration when applied to skin is capable of causing injury to those protective living cells of epidermis by breaking the keratin, removing lipids, losing its capability to hold water. Also depends on the individual susceptibility , mode of exposure, its vehicle.

It manifests as dermatitis without any prior sensitization as immunology has no role.

Moist, macerated, or thin skin such as the back of the hands, the webspaces of the fingers are more prone than normal, dry, or thick skin .

Acute ICD involves TNF-α, IL-1, IL-6, IL-8, IFN-γ, IL-2, and granulocyte monocyte-colony stimulatory factor.

Chronic ICD is due to altered barrier function and raise in epidermal cell turnover.

- **Allergic contact dermatitis** [139-142]

Sensitization of contact allergens occur when they penetrate deeper skin and after being conjugated with autologous proteins. It is a delayed type of hypersensitivity reaction with two distinct phases i.e, induction / phase of sensitization and the phase of elicitation occurring in a previously sensitized individuals.

During the induction phase a hapten, usually of low molecular weight, less than 500 Daltons, penetrates the skin , where it is captured by antigen-presenting cells such as Langerhans cells, dermal dendrocytes, and macrophages and is presented to T-lymphocytes in the regional lymph nodes. A group of these T cells turns into memory cells and the remaining into effector T lymphocytes that are released into the blood .

The elicitation phase occurs when the antigen is exhibited again to an individual who is prior sensitized. Visible clinical reaction is seen with in a day of antigen application due to cytokines namely IL-1 by antigen-presenting cells and IL-2 by T-lymphocytes causing clonal proliferation of antigen-specific T-helper 1, CD4+ lymphocytes. Hence contact sensitivity once acquired, always persists.

DIAGNOSIS

- **Standard patch test** [16]

Is a test for confirming allergic contact dermatitis . In 1896 it is first used by Josly Jadassohn. Finn chambers are commonly used to apply allergens.

The allergen is placed in contact with skin for about 2 days and then discarded. After an hour of removing the patches we observe for local inflammatory reaction and is graded as no reaction, 1+ to 3+. Another test reading is observed at fourth day from the removal of test patch.[143]

- **TRUE test (thin-layer rapid-use epicutaneous test)**

It is a new easy type of test system which has ready to use, exact and low concentration test patches. But it is a costly test with drawbacks of antigen washing away with sweat, low sensitivity towards fragrance mix and not all steroid antigens are included.[144]

Accupatch and Epiquick are other examples of ready to use patches.[145]

HISTOPATHOLOGY

CONTACT DERMATITIS [89,90,92,146]

Contact dermatitis varies through all its stages. There are multiple foci of parakeratosis with plasma within . Irregular epidermal acanthotic hyperplasia with V-shaped rete ridges.

The main hallmark is the presence of intercellular oedema or spongiosis, sometimes evolving into intraepidermal vesiculation , exocytosis of lymphocytes in epidermis.

In contrast with psoriasis, stratum granulosum is preserved and there is no decrease in the thickness of suprapapillary plates . With no oedema in the papillary dermis, but has superficial perivascular lymphocytic infiltration, sometimes with numerous eosinophils, horizontal array of Vessels which are uninvolved.

Spongiotic dermatitis can be classified into acute (with vesiculation and bullae), subacute (with marked acanthosis, spongiosis, vesiculation) and chronic (subtle spongiosis and psoriasiform acanthosis) in which the amount of epidermal hyperplasia and spongiosis with time increases and decreases respectively along the spectrum .

Previous studies by Cesinaro and Aydin et al. [93,94] observed that in majority of cases there is intact granular layer, spongiosis with vesicles, irregular acanthosis and numerous eosinophils , abnormal ectatic vasculature.

CONCEPT OF "ECZEMA IN PSORIATICO" (EIP) [147-150]

Patients with palmoplantar psoriasis with or without atopy on household/ environmental and/or occupational exposure of irritants and allergens with type 4 hypersensitization lead to co- existant ACD .This act as Koebner phenomena, maintaining or triggering palmoplantar psoriasis .

Consequently such patients are termed as 'PsEma' , as they present with overlapping clinical, dermoscopic and tissue histological features of allergic contact dermatitis on top of pre-existing psoriasis.[25]

The following features of EIP that were shared with psoriasis are parakeratosis, absent granular layer, thinned out suprapapillary plates , regular elongated rete-ridges , oedematous dermis, and Munro's microabscesses. And similar to ACD, EIP was also characterized by lymphocytic exocytosis, well established spongiosis with vesicles.

In addition, EIP showed parakeratosis with more of neutrophils and plasma exudation which is less observed in ACD. Hematoxylin &Eosin staining alone was not always sufficient for the differential diagnosis of these diseases.

Lack of responsiveness to psoriatic therapy, patch testing, Immunohistological stainings gives a clue to differentiate the two. Immunochemistry shows features of both psoriasis i.e Ki67,[151] cytokeratin 17 (CK17) [152,153] reactivity due to hyperproliferation of epidermal keratinocytes ,interleukin -8,17,23 and of ACD i.e CD1a - specific marker for Langerhans cells which are antigen presenting cells, a subtype of epidermal dendritic cells [154,155] ; major histocompatibility complex class I & II, epidermal T-cell subsets .

Also dermal CD8+ T cells of significant quantity was found in EIP than in ACD and psoriasis.

DERMOSCOPY

Skin surface microscope, episcope or epiluminescence microscope , incident light microscopy are the synonyms for dermoscope.[156]

It is basically a diagnostic non- invasive tool identical to a lens with magnification but with additional features of adjustable magnification to high power, with an illumination source , ability to capture images and record videos .

Helps to visualize various patterns of surface lesions , subsurface , deeper structures as in the reticular dermis which are not visible to unaided eye. [157]

TECHNIQUES

- Contact technique - the instrument's glass plate touches the lesion, to which linkage fluid is applied. [157]
- Non-contact technique – has no chances of nosocomial infections as lens is away from the skin thus causing a decreased illumination and substandard resolution.[158-159]

TYPES

- Nonpolarized mode – for superficial lesions like comedo-like openings, crypts, fissures, scales.[10]
- Polarized mode - commonly used for vascular and pigmented structures.[10] Deeper white, shiny streaks, vessels and pigment network are more evident. [160]

Upon usage of interface fluids the skin translucency gets better and also improves the light penetration from the device thereby improving the visual range of skin structures below surface. Examples are immersion ,olive, mineral oils ; water, an antiseptic solution, disinfectant with a alcohol or aqueous base , 70% ethyl alcohol, 90% isopropyl alcohol, liquid paraffin and glycerin, ultrasound gel. Immersion oil has chlorines and dibutyl phthalate causing teratogenic, mutagenic effects.[157,161,162]

The principle involves trans-illumination with high magnification for better observation.[163]

Acts as a stethoscope to a dermatologist by giving information regarding the type of skin eruptions. And if the patterns are consistent to a disease , it aids in the diagnosis. Hence reducing the need of skin biopsy.[164,165]

The following should be kept in mind while examining any inflammatory disease : [166]

- Vessel morphology and distribution
- Background color
- Surface scales or keratin
- Follicular disturbances

Along with clues, specific to a diagnosis.

Psoriasis

A study by Lallas et al. in psoriasis stated a pattern of uniform homogenous regular array of dotted or coiled (glomerular) vessels . The red dots correlate with the dilated vertical vessels in elongated papillae of dermis.[167]

Vázquez-López termed an infrequent yet diagnostic red globular rings , presenting as red round capillaries , globules in irregular rings with a beaded, lacy capillary appearance.[168]

In erythrodermic psoriasis, Errichetti et al. found diffuse white uniform scales and regularly arranged dotted/glomerular vessels on a erythematous background.[169]

In palmar psoriasis there is only diffuse white scaling with no visible vessels due to the thick scales. Scales are scraped off in order to visualize the uniform dotted

vessels over a light red background. Characteristic hairpin vessels and red loops were found out to be highly specific for the diagnosis of psoriasis. [8,10,170]

It also helps to monitor the disease. Under high magnification the twisted vessels number indicates the activity of disease , therefore in response to treatment the number decreases.[171]

- **Eczema**

A study by Lallas et al. described that dermoscopic patterns may change according to the stage of the eczema. In the acute stage, yellow colored crusts, patchy distribution of dotted vessels and focal distribution of white scales are noted.[167] Yellowish serocrusts are due to serous discharge and relate to spongiosis , while white areas correlate with the hyperkeratosis and acanthosis. A 'yellow clod' sign is seen in acute forms indicating the yellowish hue.[172]

In the chronic lichenified stages, white scaling and red dots in clusters are noted. [167]

In all types of eczema, patchy clustered distribution of red dots is very specific. However, focal white scaling, yellow serocrusts, and white areas are observed in acute and chronic stages of eczema, respectively. [8]

Various studies by Errichetti et al., Xu c et al. mentioned dermoscopic patterns of hand eczema showing yellow colored scales, clusters of dots in patches over a dull red background. Yellow hue is specific to eczema. [8,170]

MATERIALS AND METHODOLOGY

The details of the study methodology are described below:

- **Study source:** The study was conducted at the Department of Dermatology, Venereology and Leprosy, in tertiary care hospital, Belgaum as a part of the MD academic curriculum.
- **Study duration:** The study was conducted between 1st January 2019 to 31st December 2019.
- **Ethical clearance:** Clearance was taken from the Ethical Committee of the institute.
- **Study design:** Hospital based cross sectional study.
- **Sample size:** The study was a observational cross sectional study. Hence, based on previous records of patients having palmar psoriasis and hand eczema who had attended the outpatient department of Dermatology, Venereology and Leprosy in the previous year, a sample size of 49 was calculated.
- For sample size calculation based on chi-square test below formula is used.
- $n = \frac{\lambda}{w^2}$
- In the above formula λ is the non-centrality parameter of χ^2 test, this can be obtained for given level of significance, power and degrees of freedom (obtained from R software) and ***w*** can be obtained by following formula.
- $w = \sqrt{\frac{1}{n}\sum_{i=1}^{r}\sum_{j=1}^{c}\frac{(O_{ij}-e_{ij})^2}{e_{ij}}}$
- In the above formula, O_{ij} is the observed cell count, e_{ij} is the expected cell count, *r*, *c* represents the number of rows and columns of contingency table.

- For sample size calculation, we consider power of 80%, level of significance 5%, degrees of freedom as 1 and we assume that there is large difference between the characteristics of palmar psoriasis and hand eczema in dermoscopic findings, from this we assume *w* as 0.4. From the above formula sample size obtained is 49.055 ≈ 49.
- Therefore, minimum sample size required is 49. Larger the sample better the precision.
- However, the total number of patients attending the OPD during the study period was 60; hence a sample size of 60 was studied.
- **Sample selection criteria:** All patients clinically diagnosed as either palmar psoriasis or hand eczema attending dermatology opd were enrolled as per the inclusion and exclusion criteria.
- **Inclusion criteria:** All consenting patients of either sex , irrespective of age, who by history and clinical examination having diagnosis of either palmar psoriasis or chronic hand eczema attending the department of dermatology, between 1st January to 31st December 2019 were included.
- **Exclusion criteria:** Subjects who were on any form of topical/oral treatment for the palmar lesions, over the past one month and those with hyperkeratotic lesions involving palms other than psoriasis/eczema were excluded.
- **Data collection:** A detailed history regarding the age, sex, occupation, personal habits, duration of the disease, seasonal variations, contact allergies, history of any previous treatment was taken followed by a detailed dermatological and systemic examination. From this a clinical diagnosis of either palmar psoriasis or eczema was reached. Photographs of the lesions were also taken. Dermoscopic examination of the lesions over palms was performed using

a videodermatoscope- Dinolite premier AM4113ZT model and there images were captured and recorded for the study. A palmar biopsy was done for confirmation of diagnosis. Final diagnosis of palmar psoriasis / hand eczema / eczema in psoriatico was based on clinical and histopathological findings. Patch test for detecting the allergen could not be done due to unavailability of the patch test kit. All the findings were noted in proforma after taking consent.

- **Statistical Method for Data Analysis:** Done by using SPSS 20.00 version. Chi-square test was used wherever applicable. Fleiss kappa was used to check for agreement between the methods. Sensitivity, specificity, positive predictive value, negative predictive value of the data was calculated.

RESULTS AND OBSERVATIONS

A total of 60 cases, were enrolled over a period of one year from 1st January to 31st December 2019 with a diagnosis of either palmar psoriasis / hand eczema / eczema in psoriatico on clinico-histopathological correlation.

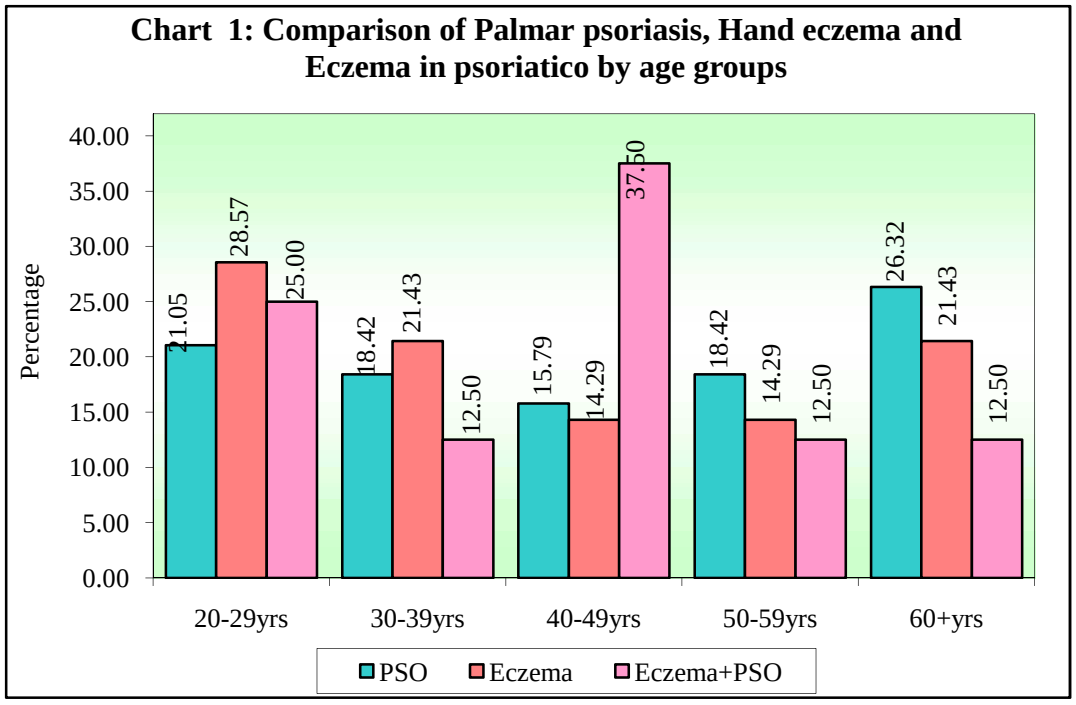
It has been observed that out of 60 subjects , 38 (63.33 %) were psoriatic followed by 14 (23.33 %) were eczema and 8 (13.33 %) eczema in psoriatico.

1.Age distribution

Majority of the palmar psoriasis patients were in the age group of 60 years and above (n = 10,26.3 %) , Majority of hand eczema patients were between the age group 20-29 years (n = 4, 28.5%) and those of eczema in psoriatico patients were between the age group 40-49 years (n= 3, 37.5%). Mean age of patients in the study was 43.92 $\pm$ 14.35 and 41.14 ± 13.6 and 40.13 ±14.40 respectively.

Table 1: Comparison of palmar psoriasis, hand eczema and eczema in psoriatico by age groups

Age groups	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
20-29yrs	8	21.05	4	28.57	2	25.00	14	23.33
30-39yrs	7	18.42	3	21.43	1	12.50	11	18.33
40-49yrs	6	15.79	2	14.29	3	37.50	11	18.33
50-59yrs	7	18.42	2	14.29	1	12.50	10	16.67
60+yrs	10	26.32	3	21.43	1	12.50	14	23.33
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=2.8355, p=0.9442								

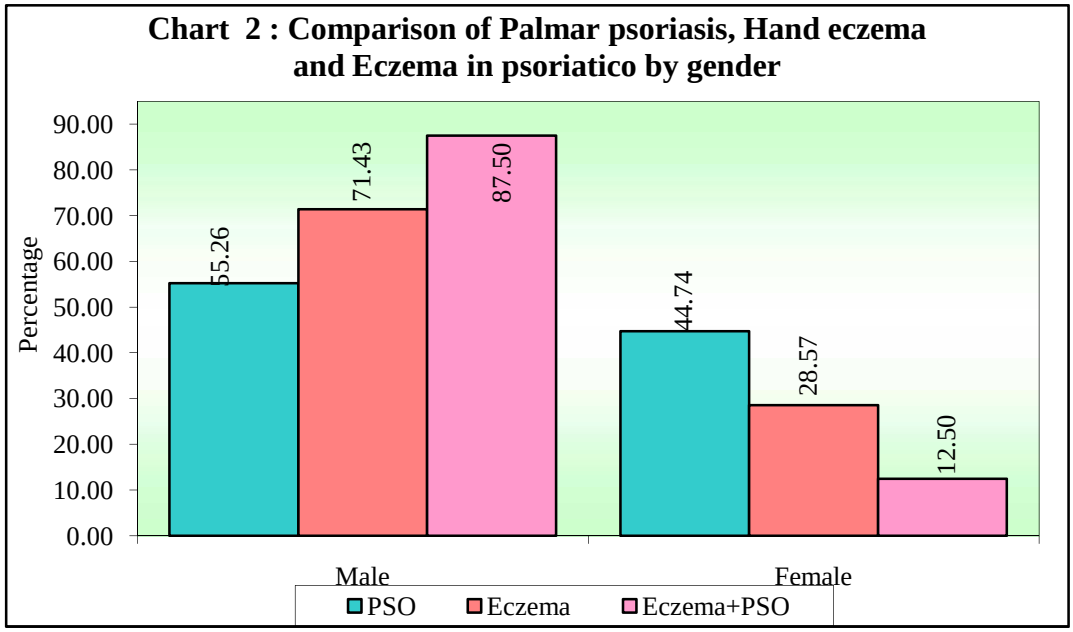


2.Gender distribution

Out of the 60 cases included in the study , in total 63.33% (n=38) of the study population were males , 36.6 % (n=22) were females, showing male predominance in all the three mentioned conditions i.e 21 out of 38 in palmar psoriasis i.e 55% , 10 (71%) and 7 (87.5%) were males out of 14 and 8 subjects in hand eczema and eczema in psoriatico respectively.

Table2 :Comparison of palmar psoriasis, hand eczema and eczema in psoriatico by gender

Gender	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Male	21	55.26	10	71.43	7	87.50	38	63.33
Female	17	44.74	4	28.57	1	12.50	22	36.67
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=3.4730, p=0.1760								



3. Duration of onset

Majority of the population belonged to the group of less than one year duration (n=30,50%) in total , i.e 42.1% (n=16) in palmar psoriasis, 64 % (n=9) in hand eczema, 62.5% (n=5) in eczema in psoriatico.

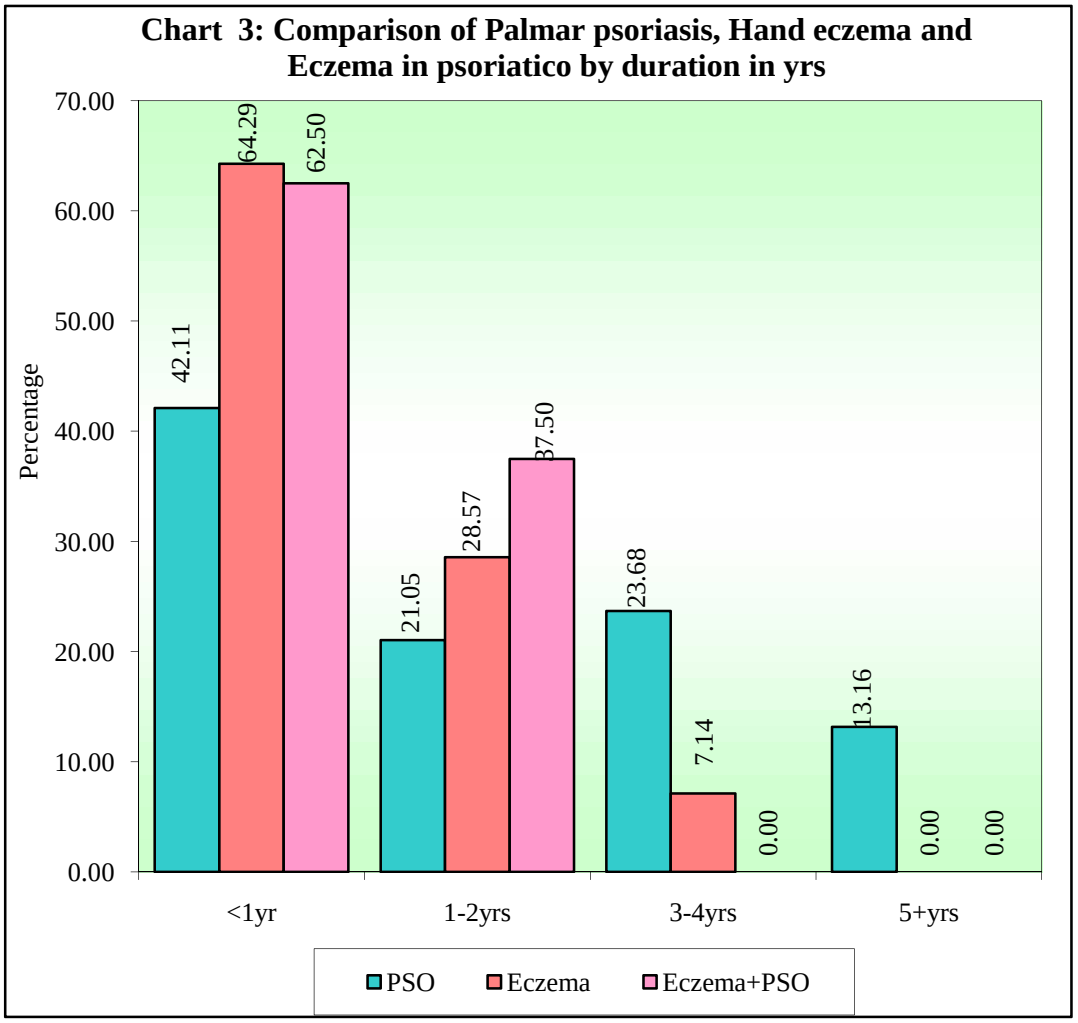
Followed by 23.6% (n=9) in palmar psoriasis who belonged to 3-4 years duration , between 1-2 year duration were 28.5 % (n=4) in hand eczema, 37.5% (n=3) in eczema in psoriatico.

Mean duration of onset of lesions was 1.73 years in total.

Table 3: Comparison of palmar psoriasis, hand eczema and eczema in psoriatico by duration in years

Duration	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
<1 yr	16	42.11	9	64.29	5	62.50	30	50.00
1-2 yrs	8	21.05	4	28.57	3	37.50	15	25.00
3-4 yrs	9	23.68	1	7.14	0	0.00	10	16.67
5+ yrs	5	13.16	0	0.00	0	0.00	5	8.33
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=7.0733, p=0.3141								

Chart 3: Comparison of Palmar psoriasis, Hand eczema and Eczema in psoriatico by duration in yrs



4.Winter Exacerbation wise distribution

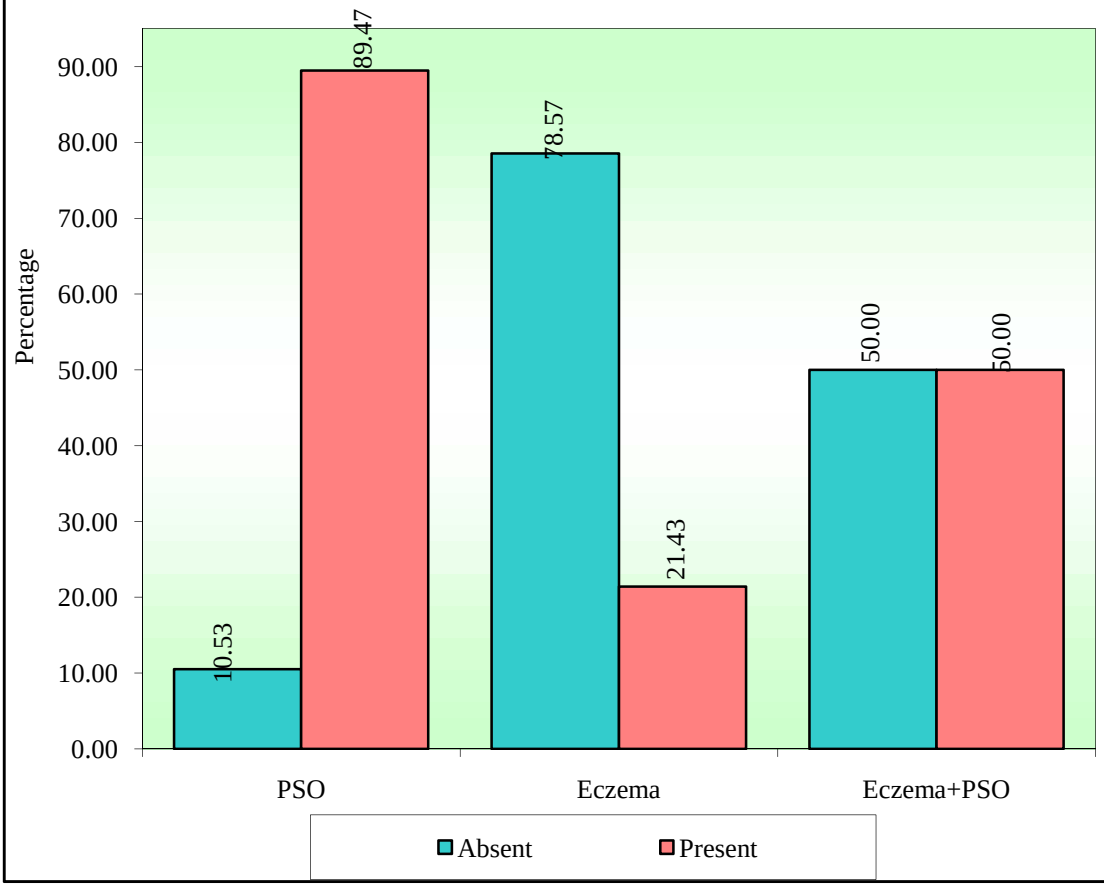
Winter exacerbations in palmar psoriasis was observed in 89.47%, n=34 out of the 38 patients, 50% (n=4 out of 8) in eczema in psoriatico .Whereas in hand eczema , it shows no association in 78.54 % i.e in 11 out of 14 patients. **Using chi-square test with simulation there was statistically significant association (p= 0.0001) between winter exacerbation and of psoriasis.**

Table 4: Comparison of palmar psoriasis, hand eczema and eczema in psoriatico with Winter Exacerbation

Winter Exacerbation	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Absent	4	10.53	11	78.57	4	50.00	19	31.67
Present	34	89.47	3	21.43	4	50.00	41	68.33
Total	38	100.0	14	100.00	8	100.00	60	100.00
Chi-square=23.3251 P = 0.0001*								

*p<0.05 is considered to be statistical significance

Chart 4: Comparison of Palmar psoriasis, Hand eczema and Eczema in psoriatico with Winter Exacerbation

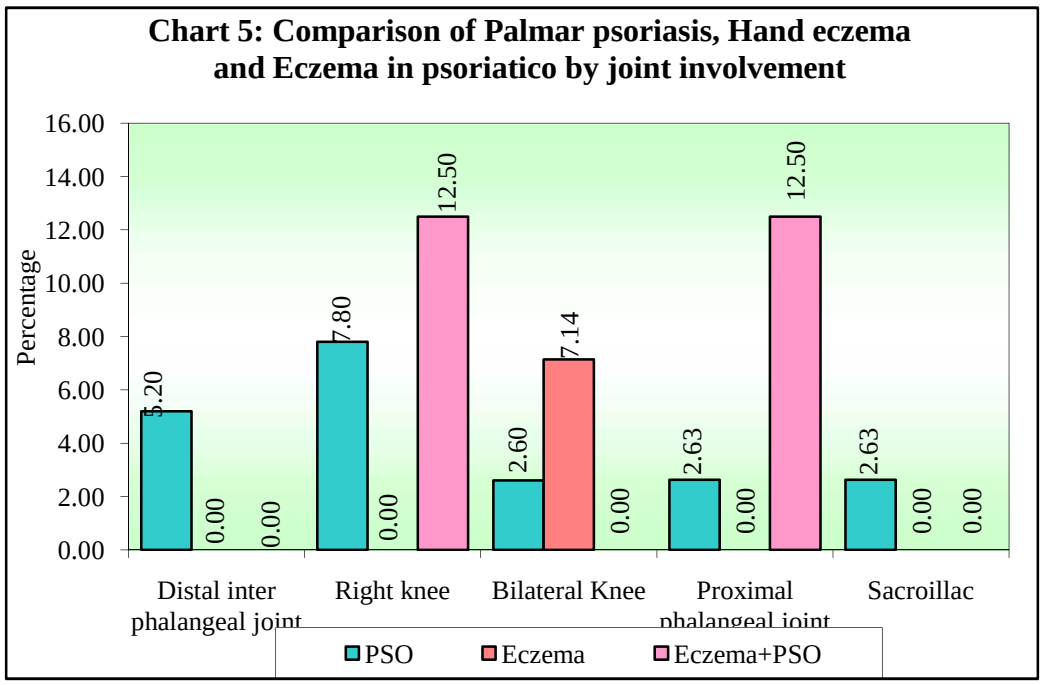


5.Joint involvement wise distribution

We observed right knee was most commonly involved in 7.8% (n=3) followed by Distal inter pharyngeal joint 5.2% (n=2) in palmar psoriasis. In eczema only one case had right knee involvement i.e7.14%

Table 5: Comparison of palmar psoriasis, hand eczema and eczema in psoriatico by joint involvement

Joint involvement	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Distal interphalangeal joint	2	5.2	0	0.00	0	0.00	2	5.2
Right knee	3	7.8	0	0.00	1	12.50	4	20.3
Bilateral Knee	1	2.6	1	7.14	0	0.00	2	9.74
Proximal phalangeal joint	1	2.6	0	0.00	1	12.50	2	15.1
Sacroillac	1	2.6	0	0.00	0	0.00	1	2.6



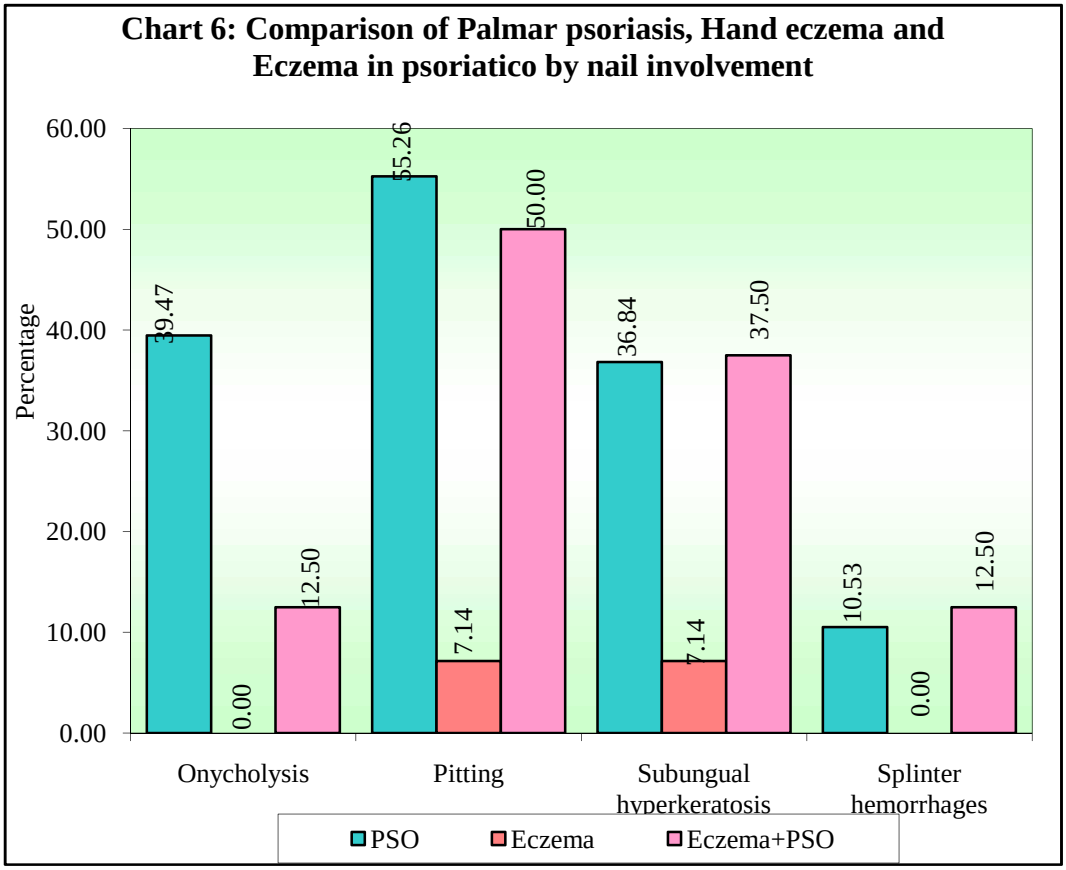
6. Nail involvement

In palmar psoriasis a total of 71% (n=27) had nail involvement. Most of the patients i.e 55 % (n=21) had pitting followed by onycholysis 39.47% (n=15), subungual hyperkeratosis 36.84 % (n= 14). Majority of the patients in hand eczema had pitting ,subungual hyperkeratosis each 7.1% (n=1) , eczema in psoriatico had pitting in 50 % (n=4).

Table 6: Comparison of palmar psoriasis, hand eczema and eczema in psoriatico by nail involvement

Nail involvement	Pso	%	Eczema	%	Eczema+Pso	%
Onycholysis	15	39.47	0	0	1	12.50
Pitting	21	55.2	1	7.14	4	50.00
Subungual hyperkeratosis	14	36.84	1	7.14	3	37.50
Splinter hemorrhages	4	10.5	0	0.00	1	12.50
Chi-square=2.3095, P = 0.889						

Chart 6: Comparison of Palmar psoriasis, Hand eczema and Eczema in psoriatico by nail involvement



7. Contact allergens distribution

In hand eczema out of 14 patients , majority of the patients according to history had allergy towards detergents and pesticides showing each of 35% (n= 5), followed by allergy towards cement in 21.4 % (n=3), chalk powder in 7% (n=1). In palmar psoriasis out of 38 patients, only 2 patients (7.1%) had allergy towards detergents , 1 each (2.6 %) had allergy towards gloves and pesticides. In eczema in psoriatico 2 each (25 %) had allergy towards oil and pesticides.

Table 7: Comparison of palmar psoriasis, hand eczema and eczema in psoriatico by Contact allergens

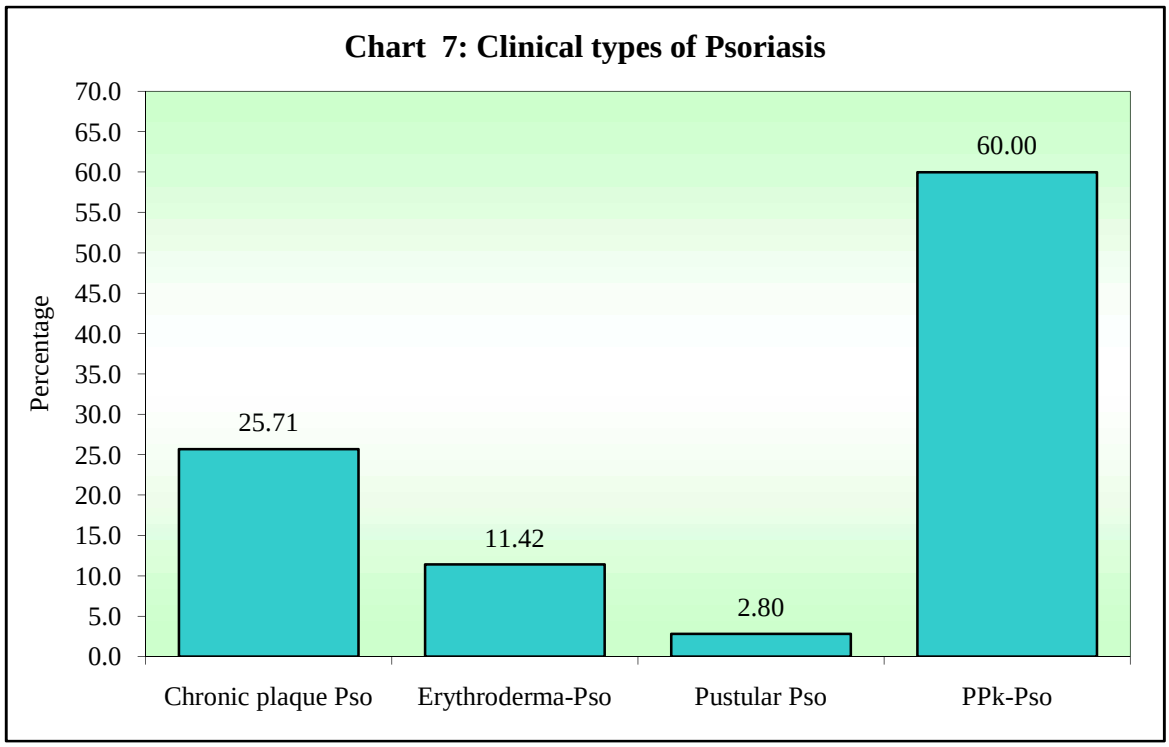
Contact allergens	Pso	%	Eczema	%	Eczema+Pso	%
Cement	0	0.00	3	21.4	0	0.00
Chalk powder	0	0.00	1	7.14	0	0.00
Detergents	2	7.1	5	35	1	12.5
Gloves	1	2.6	0	0.00	0	0.00
Oil	0	0.00	0	0.00	2	25
Pesticides	1	2.6	5	35	2	25

8. Clinical types of psoriasis with palmar involvement

In our study, out of the 35 clinically suspected cases of psoriasis, most common type was palmoplantar psoriasis i.e 60 % (n=21) followed by chronic plaque psoriasis 25% (n=9) , Erythroderma secondary to psoriasis 11.4 % (n=4) , Pustular psoriasis 2.8 % (n=1) with palmar involvement.

Table 8: Clinical types of psoriasis

Types of Psoriasis	Diagnosis of PSO	%
Chronic plaque Pso	9	25.71
Erythroderma-Pso	4	11.42
PustularPso	1	2.8
Palmo-plantar Pso	21	60



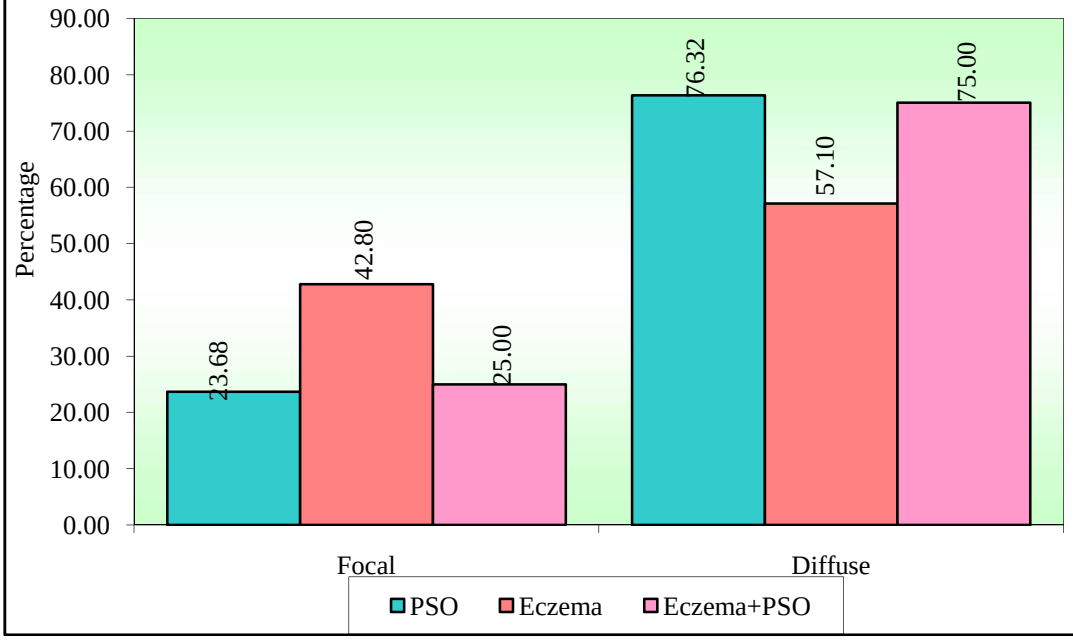
9.Distribution of scales on dermoscopy

We observed that in majority of cases, 29 out of 38 (76.3%) in palmar psoriasis, 8 out of 14 (57.1%) in hand eczema,6 out of 8 (75%) in eczema in psoriatico there was diffuse scaling.

Table 9: Comparison of distribution of scales in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Scales	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Focal	9	23.68	6	42.8	2	25.00	17	28.3
Diffuse	29	76.32	8	57.1	6	75.00	43	71.6
Total	38	100.00	14	100.00	8	100.00	60	100
Chi-square=1.9026, P = 0.3862								

Chart 8: Comparison of distribution of scales in biopsy proven cases of Palmar psoriasis, Hand eczema and Eczema in psoriatico



10.Color of scales on dermoscopy

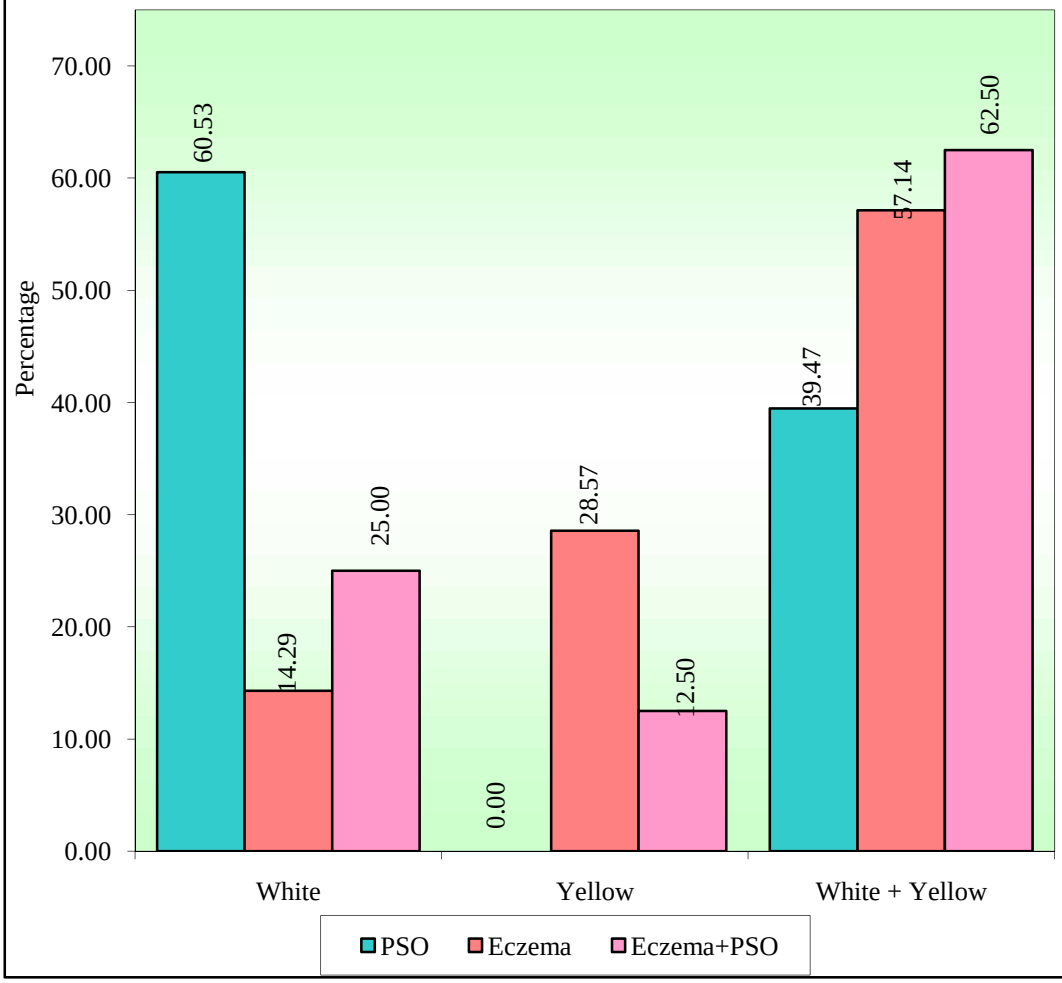
The association of white color of scales is statistically significant (p = 0.0097) in palmar psoriasis i.e 60.5% (n=23) patients with absence of yellow scales and combination of white and yellow scales are seen in 39.5% (n=15). In hand eczema most of the patients have a combination of white and yellow scales i.e in 57% (n=8) followed by yellow scales in 28.5 % (n= 4). Whereas in eczema in psoriatico majority showed a combination of white and yellow i.e 62.5 % (n=5).

Table 10:Comparision of scales colour in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Scale: colour	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
White	23	60.53	2	14.29	2	25.00	27	45.00
Yellow	0	0.00	4	28.57	1	12.50	5	8.33
White + Yellow	15	39.47	8	57.14	5	62.50	28	46.67
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=13.3454, p=0.0097*								

*p<0.05 is considered to be statistically significant

Chart 9 : Comparision of scales colour in biopsy proven cases of Palmar psoriasis, Hand eczema and Eczema in psoriatico



11.Types of vessels on dermoscopy

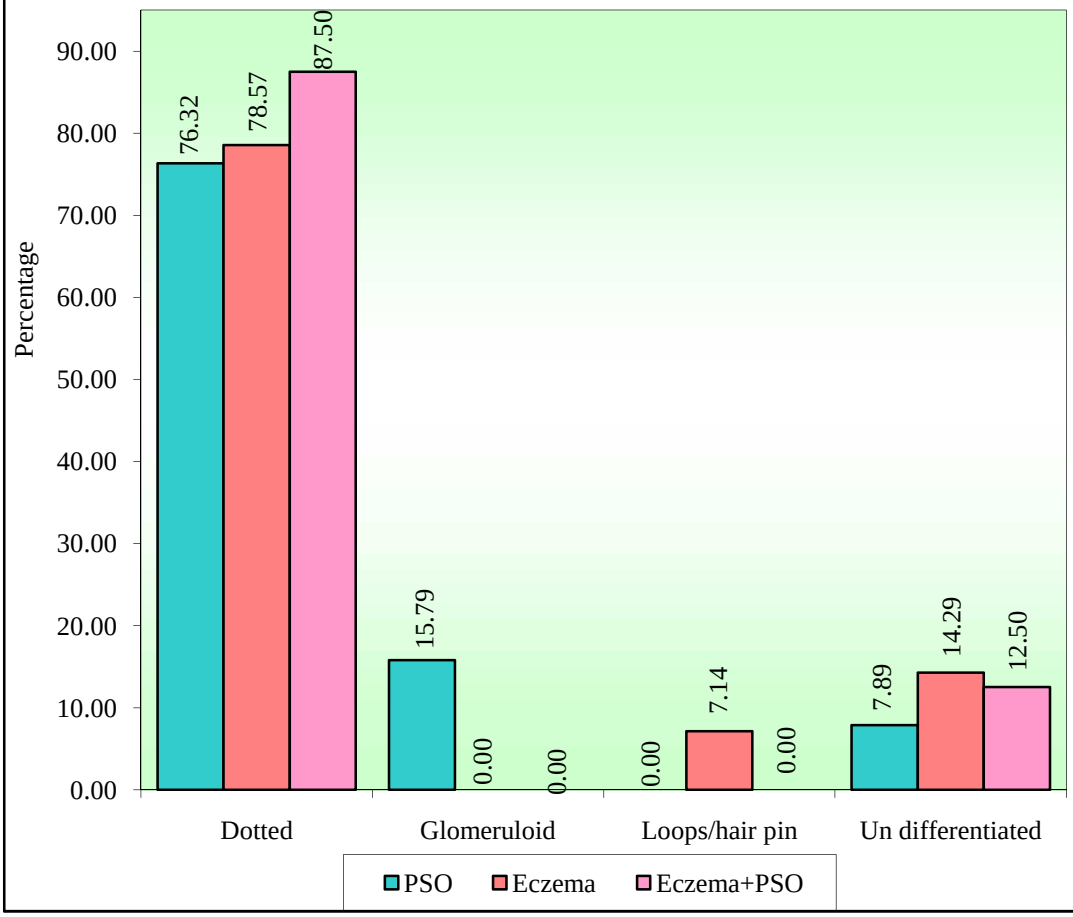
Majority of the subjects showed **statistically significant dotted type**i.e29 out of 38 (76.3%) in palmar psoriasis, 11 out of 14 (78.5%) in hand eczema,7 out of 8 (87.5%) in eczema in psoriatico. Next to dotted commonest was glomeruloidi.e 15.7 % (n= 6) in palmar psoriasis, undifferentiated 14.2% (n=2) in hand eczema and 12.5% (n=1) in eczema in psoriatico.

Table 11:Comparision of types of vessels in biopsy proven cases palmar psoriasis, hand eczema and eczema in psoriatico

Type of Vessels	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Dotted	29	76.32	11	78.57	7	87.50	47	78.33
Glomeruloid	6	15.79	0	0.00	0	0.00	6	10.00
Loops/hair pin	0	0.00	1	7.14	0	0.00	1	1.67
Undifferentiated	3	7.89	2	14.29	1	12.50	6	10.00
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=15.1439, p=0.0191*								

*p<0.05 is considered to be statistically significant

Chart 10: Comparision of types of vessels in biopsy proven cases of Palmar psoriasis, Hand eczema and Eczema in psoriatico



12.Distribution of vessels on dermoscopy

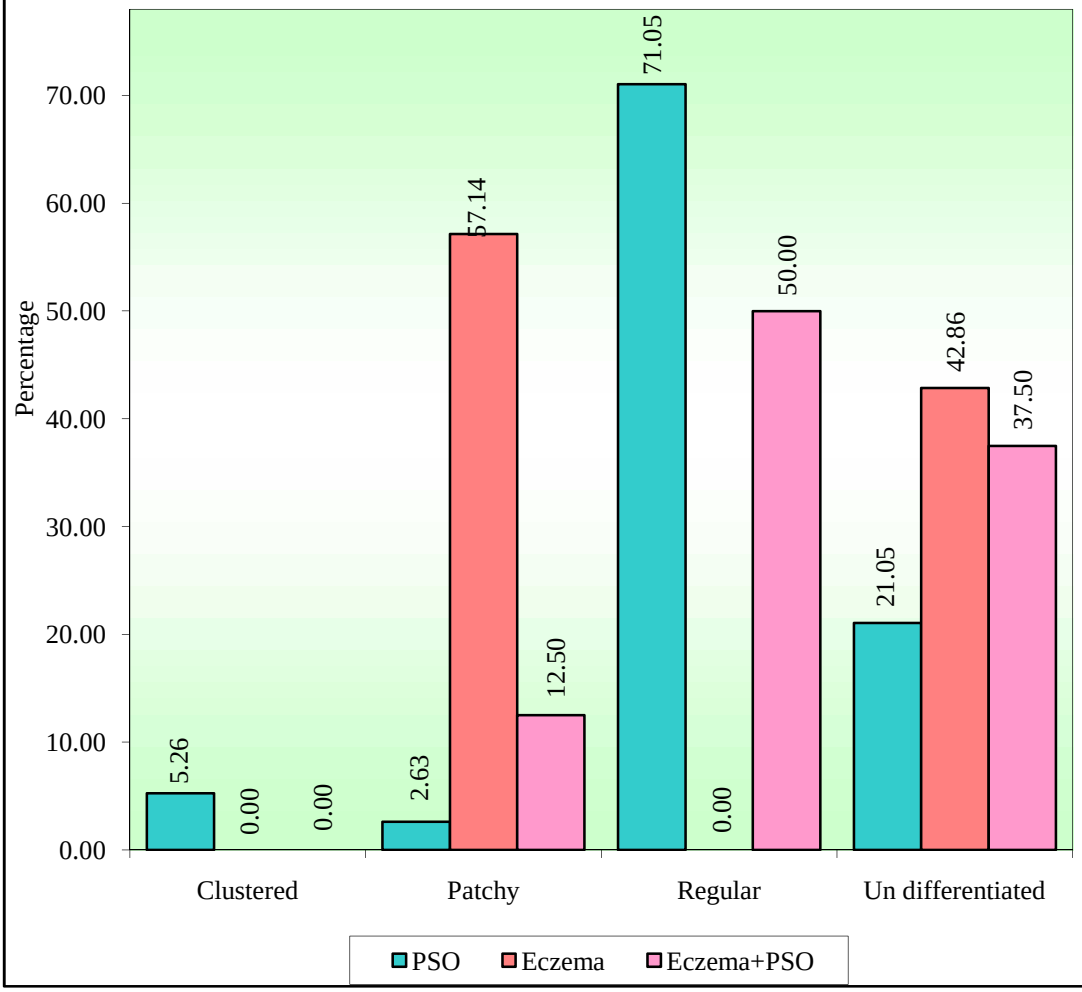
Majority i.e 71.05% (27 out of 38) palmar psoriasis patients and 50% (4 out of 8) eczema in psoriatico patients showed regular array of vessels. Indicating **regular distribution of vessels was significantly associated with psoriasis (p = 0.0087)**. Patchy type of vessel distribution was the commonest in hand eczema i.e 57.1% , n=8, followed by undifferentiated 42.8%.

Table 12:Comparision of distribution of vessels in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Array of vessels	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Clustered	2	5.26	0	0.00	0	0.00	2	3.33
Patchy	1	2.63	8	57.14	1	12.50	10	16.67
Regular	27	71.05	0	0.00	4	50.00	31	51.67
Un differentiated	8	21.05	6	42.86	3	37.50	17	28.33
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=17.1431, p=0.0087*								

*p<0.05 is considered to be statistically significant

Chart 11: Comparision of distribution of vessels in biopsy proven cases of Palmar psoriasis, Hand eczema and Eczema in psoriatico



13.Background erythema on dermoscopy

We observed **light red background erythema was significant associated with palmar psoriasis (p = 0.0001)**, i.e 65.7% (n=25) . Majority of hand eczema 57.14% (n=8) had yellowish with dull red background , eczema in psoriatico each of 37.5% (n=3) had light red and yellowish with dull red background.

Table 13:Comparision of background erythema in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Background Erythema	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Dull red	3	7.89	2	14.29	0	0.00	5	8.33
Light red	25	65.79	1	7.14	3	37.50	29	48.33
Bright red	5	13.16	0	0.00	1	12.50	6	10.00
Y + Dull red	0	0.00	8	57.14	3	37.50	11	18.33
Y+ Bright red	1	2.63	0	0.00	0	0.00	1	1.67
Yellowish	0	0.00	3	21.43	0	0.00	3	5.00
Y+ Light red	4	10.53	0	0.00	1	12.50	5	8.33
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=42.66, p=0.0001*								

*p<0.05 is considered to be statistically significant

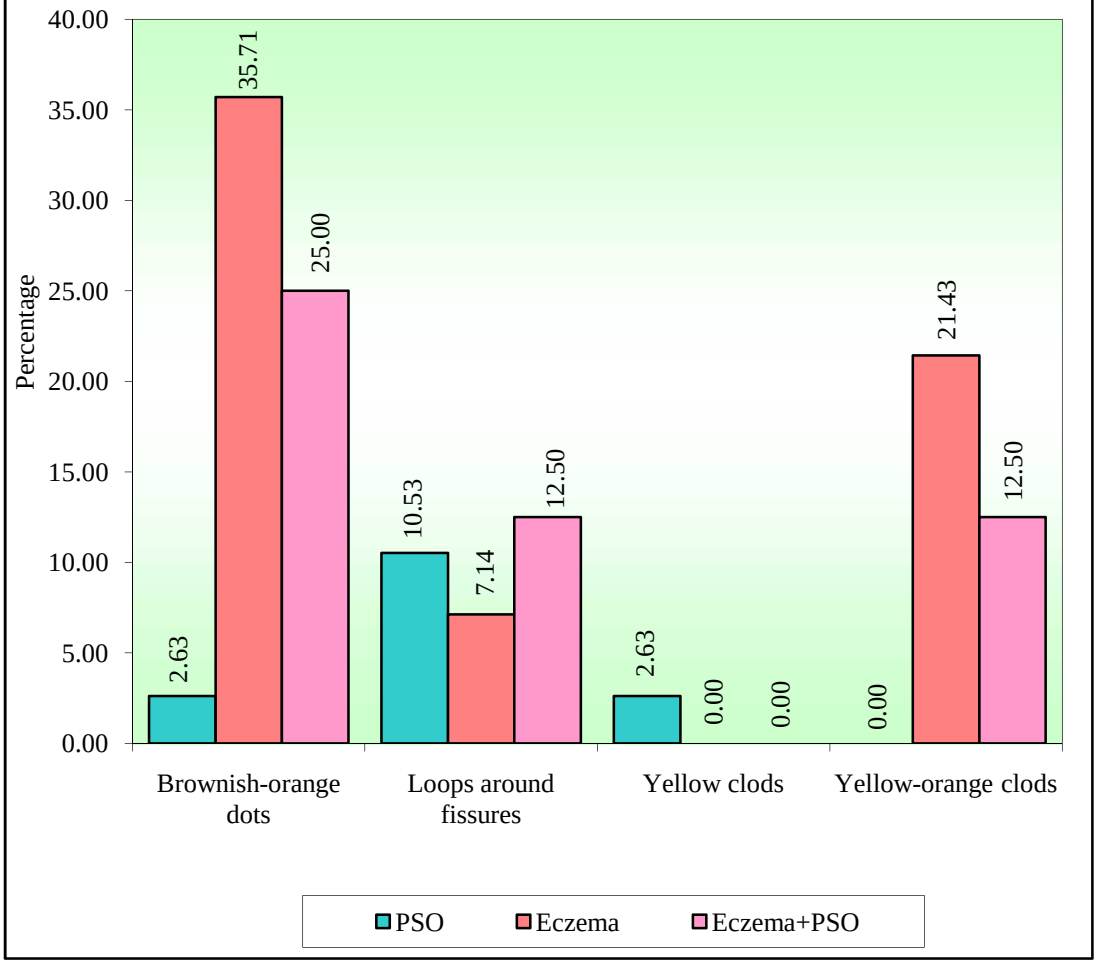
14.Additional features on dermoscopy

We observed brownish orange dots in 35% of hand eczema , 25% in eczema in psoriatico and yellow orange clods in 21% of cases of hand eczema give a clue to its diagnosis. Whereas loops of vessels / capillaries around / in fissures in 10% of palmar psoriasis were observed.

Table 14:Comparision of additional features in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Others	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Brownish-orange dots	1	2.63	5	35.71	2	25.00	8	13.33
Loops of vessels in fissures	4	10.53	1	7.14	1	12.50	6	10.00
Yellow clods	1	2.63	0	0.00	0	0.00	1	1.67
Yellow-orange clods	0	0.00	3	21.43	1	12.50	4	6.67

Chart 12: Comparision of additional features in biopsy proven cases of Palmar psoriasis, Hand eczema and Eczema in psoriatico

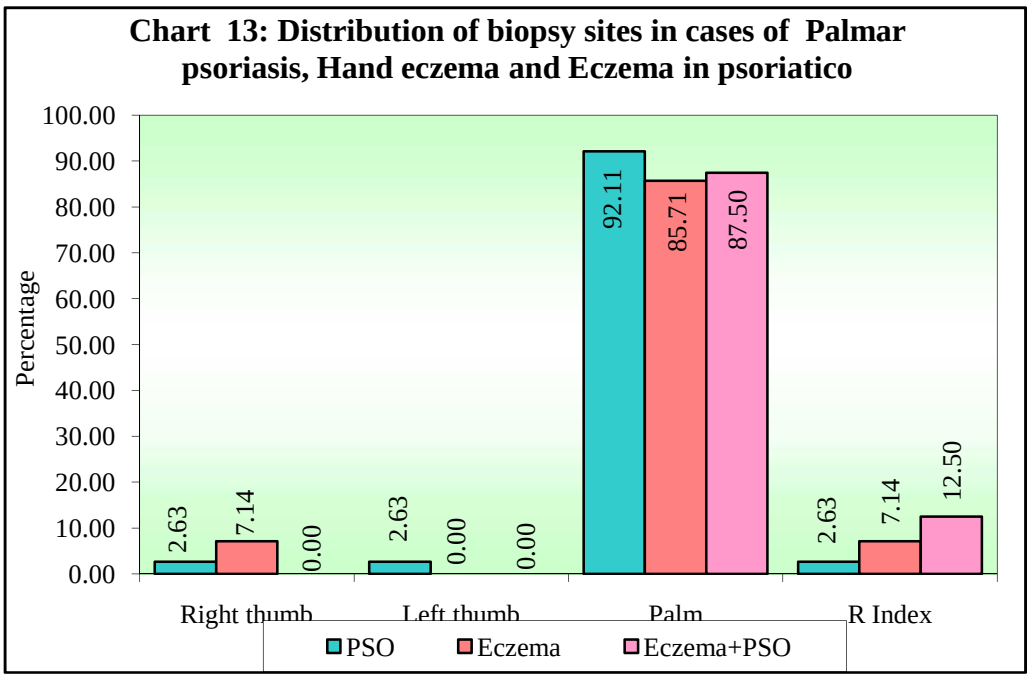


15.Site of biopsy

Maximum number of biopsies were taken from palm i.e 90% (n=54). When there were no lesions on palm , other sites were choosen, such as the sides of fingers in 10% (n=10)

Table 15: Distribution of biopsy sites in cases of palmar psoriasis, hand eczema and eczema in psoriatico

Sites	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Right thumb	1	2.63	1	7.14	0	0.00	2	3.33
Left thumb	1	2.63	0	0.00	0	0.00	1	1.67
Palm	35	92.11	12	85.71	7	87.50	54	90.00
R Index	1	2.63	1	7.14	1	12.50	3	5.00
Total	38	100.00	14	100.00	8	100.00	60	100.00

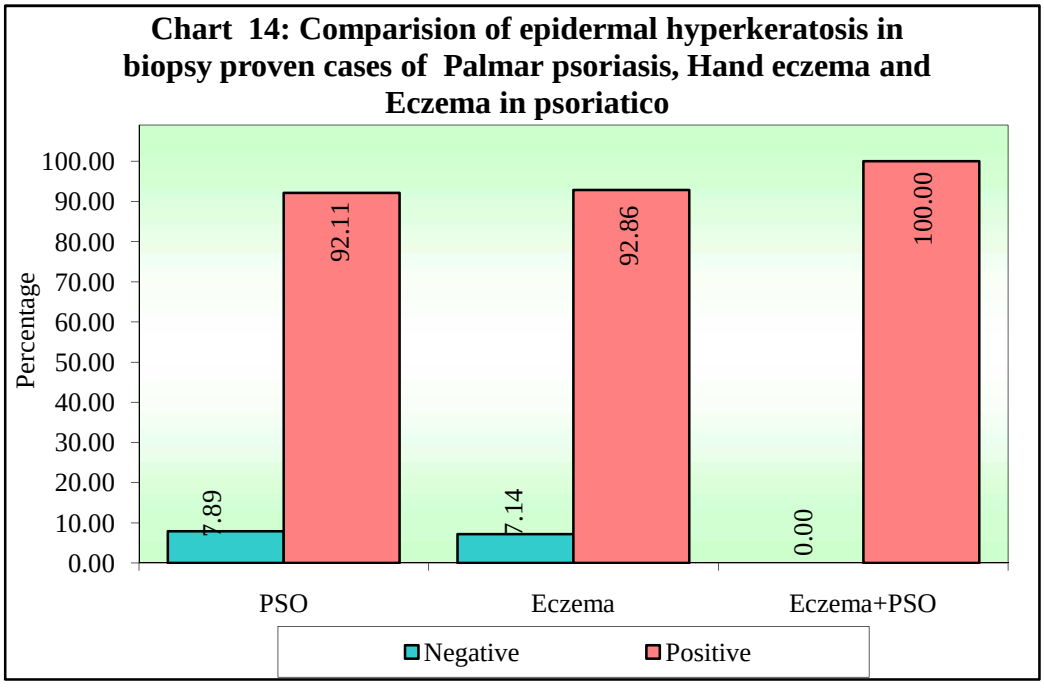


16. Hyperkeratosis on biopsy

Majority of cases of palmar psoriasis i.e 92.1 % (n= 35), 92.8% (n=13) of hand eczema and all cases of eczema in psoriatico had hyperkeratosis.

Table 16:Comparision of epidermal hyperkeratosis in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Hyperkeratosis	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Absent	3	7.89	1	7.14	0	0.00	4	6.67
Present	35	92.11	13	92.86	8	100.00	56	93.33
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=0.6690, P = 0.7160								

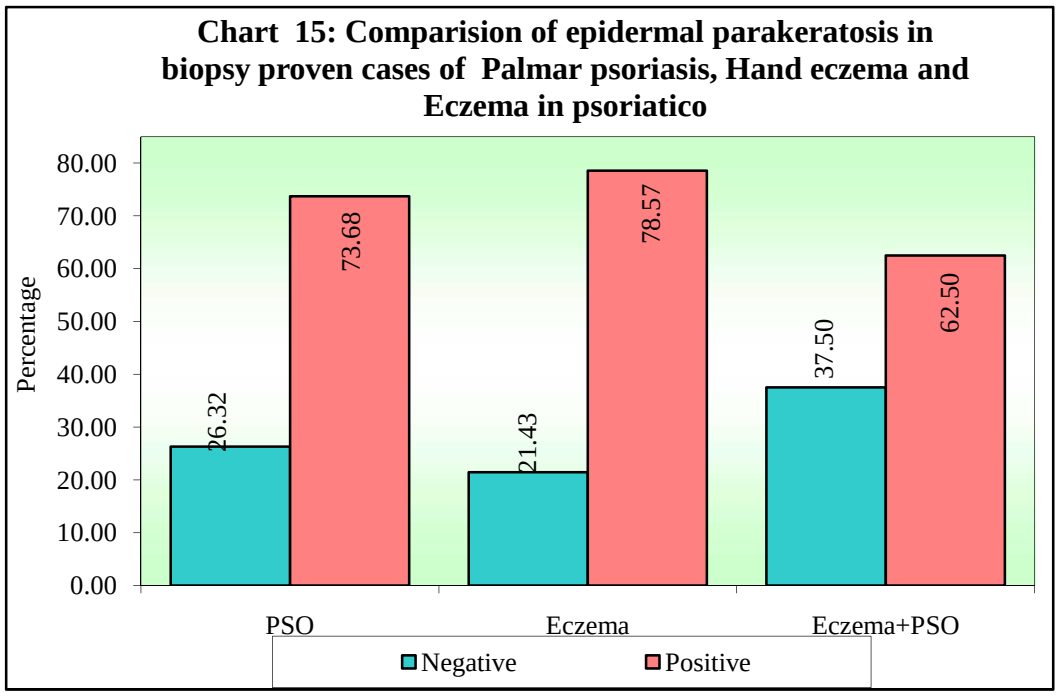


17. Parakeratosis on biopsy

Majority of cases of palmar psoriasis i.e 73.6 % (n= 28), 78.5% (n=11) of hand eczema and 62.5% (n=5) of eczema in psoriatico had parakeratosis.

Table 17:Comparision of epidermal parakeratosis in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Parakeratosis	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Absent	10	26.32	3	21.43	3	37.50	16	26.67
Present	28	73.68	11	78.57	5	62.50	44	73.33
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=0.6790, P = 0.7120								

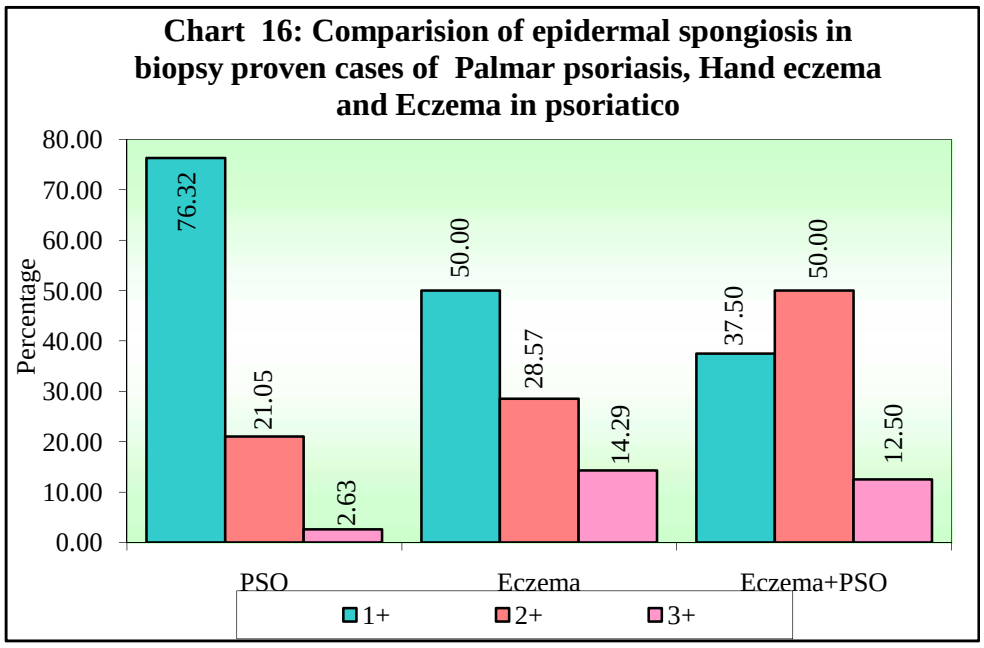


18. Spongiosis on biopsy

Majority of cases showed mild spongiosis(1+) i.e 76.3 % (n= 29) in palmar psoriasis, 50% (n=7) in hand eczema and 37.5% (n=3) in eczema in psoriatico. But both moderate (2+) and severe (3+) spongiosis were seen more in hand eczema with 28.5 % and 14.2% , eczema in psoriatico with 50% and 12.5% respectively.

Table 18:Comparision of epidermal spongiosis in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Spongiosis	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
1+	29	76.32	7	50.00	3	37.50	39	65.00
2+	8	21.05	4	28.57	4	50.00	16	26.67
3+	1	2.63	2	14.29	1	12.50	4	6.67
Chi-square=6.6639, p=0.1547								



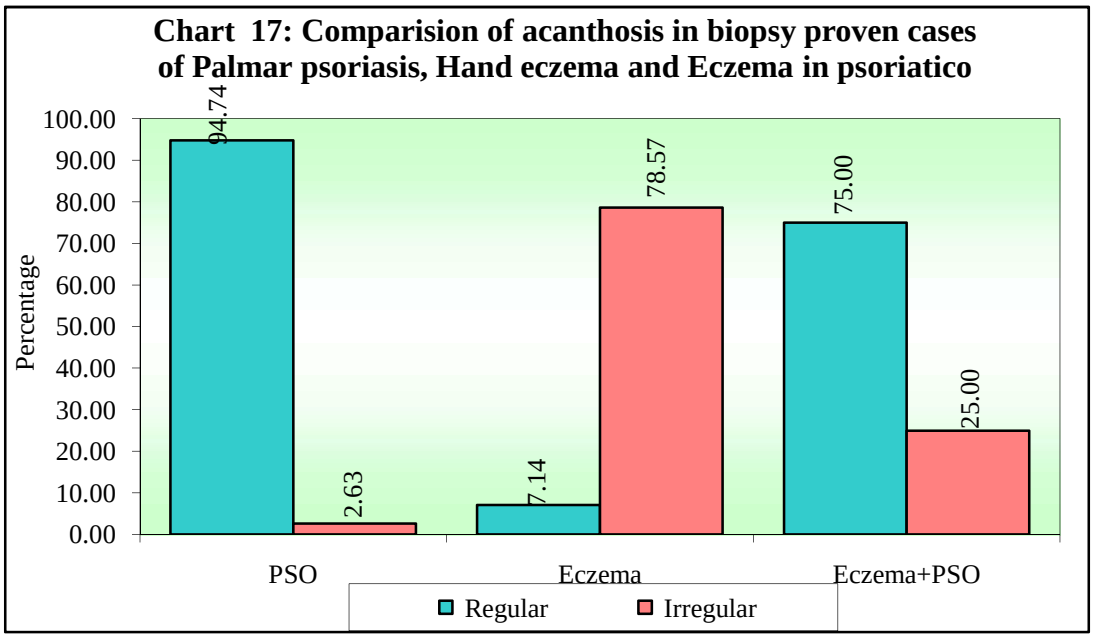
19. Acanthosis on biopsy

Regular acanthosis in palmar psoriasis was statistically significant (p = 0.0001) , was seen in 94.7 % (n=36) cases of. Irregular acanthosis in 78.5% (n= 11) cases of hand eczema. In eczema in psoriatico more of regular acanthosis (75%) than of irregular acanthosis (25%).

Table 19:Comparision of acanthosis in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Acanthosis	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Regular	36	94.74	1	7.14	6	75.00	43	71.67
Irregular	1	2.63	11	78.57	2	25.00	14	23.33
Chi-square=38.7062 P = 0.0001*								

*p<0.05 is considered to be statistically significant

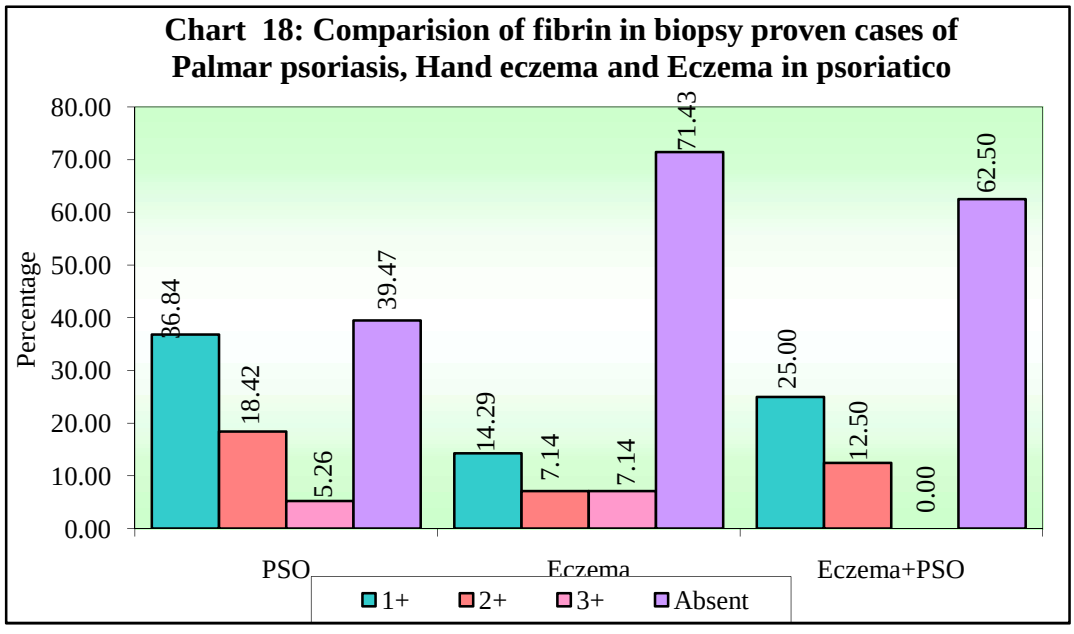


20. Fibrin on biopsy

We observed a total presence of 60.4 % fibrin in palmar psoriasis, Whereas fibrin globules are absent in 71.4% of hand eczema and in 62.5% of eczema in psoriatico.

Table 20:Comparision of fibrin in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Fibrin	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
1+	14	36.84	2	14.29	2	25.00	18	30.00
2+	7	18.42	1	7.14	1	12.50	9	15.00
3+	2	5.26	1	7.14	0	0.00	3	5.00
Absent	15	39.47	10	71.43	5	62.50	30	50.00
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=5.6297, p=0.4659								

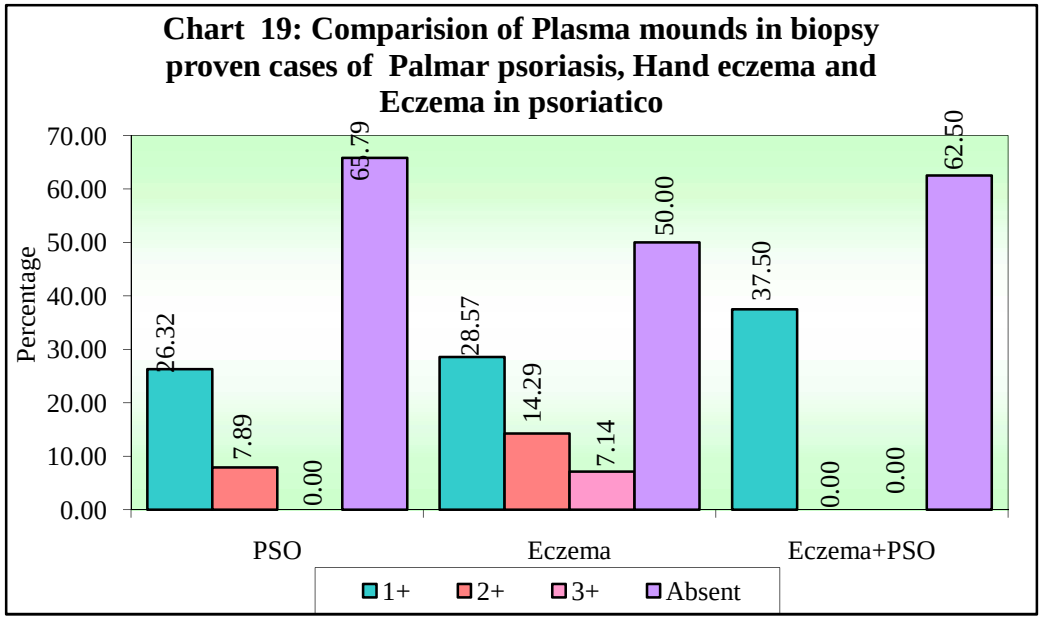


21. Plasma mounds on biopsy

In palmar psoriasis and in eczema in psoriatico, in total plasma mounds accounts to 34.21% (n=13) and 37.5%(n=3) respectively. Majority is seen in hand eczema i.e 50% (n=7)

Table 21:Comparision of plasma in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Plasma	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
1+	10	26.32	4	28.57	3	37.50	17	28.33
2+	3	7.89	2	14.29	0	0.00	5	8.33
3+	0	0.00	1	7.14	0	0.00	1	1.67
Absent	25	65.79	7	50.00	5	62.50	37	61.67
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=5.2632, P = 0.5105								



22. Granular layer on biopsy

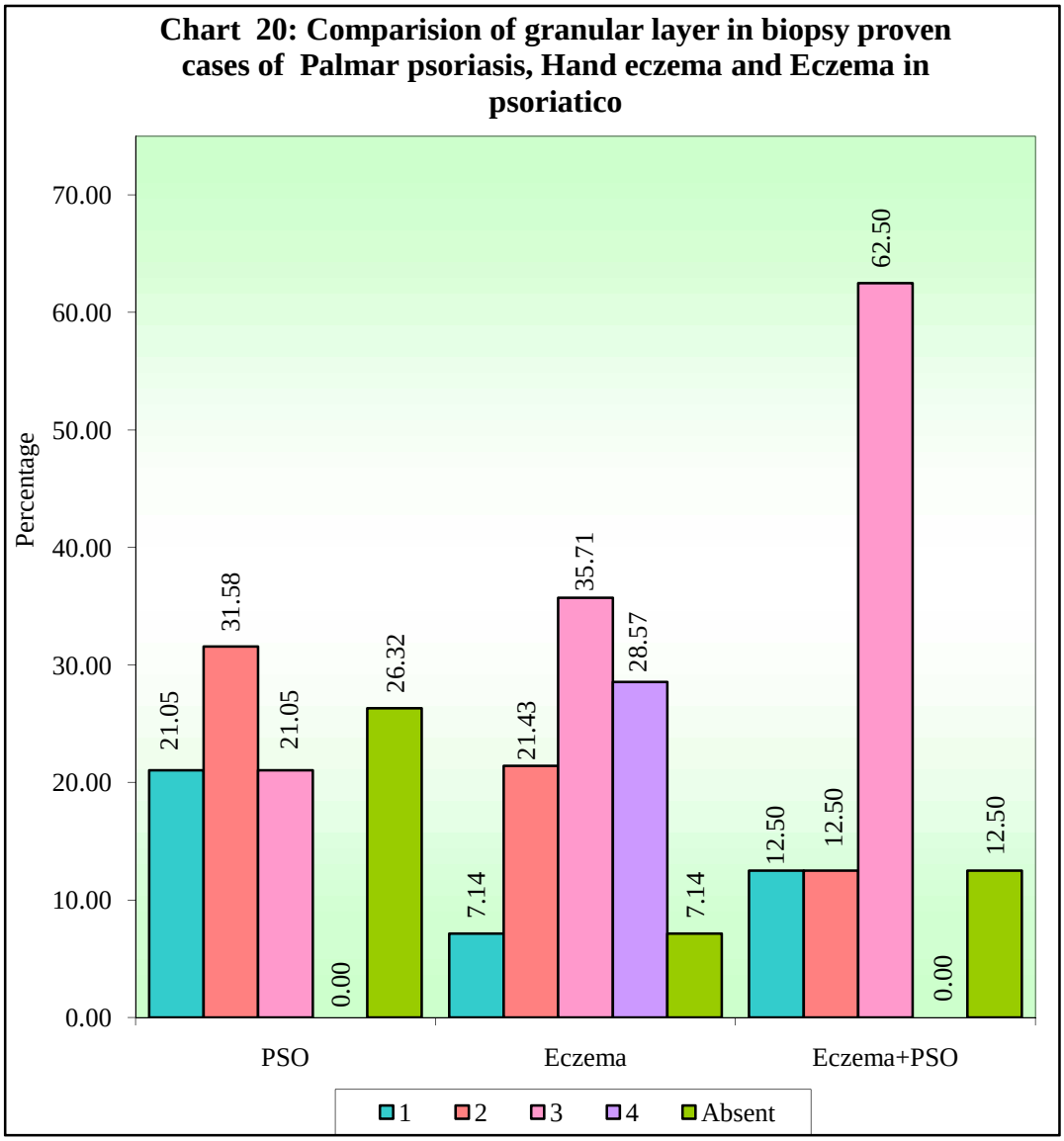
We observed that granular layer was ≤ 2 cell thick in total of 30 out of 38 cases of palmar psoriasis (78.9%) . Whereas granular layer was ≥ 3 cell thick in total of 9 out of 14 cases of hand eczema (64.2%). In eczema in psoriatico , majority i.e n=5 (62.5%) showed significant 3 cell thick granular layer.

Table 22:Comparision of granular layer in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Granular layer	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
1	8	21.05	1	7.14	1	12.50	10	16.67
2	12	31.58	3	21.43	1	12.50	16	26.67
3	8	21.05	5	35.71	5	62.50	18	30.00
4	0	0.00	4	28.57	0	0.00	4	6.67
Absent	10	26.32	1	7.14	1	12.50	12	20.00
Total	38	100	14	100.00	8	100.00	60	100.00
Chi-square=21.6398, P = 0.0056*								

*p<0.05 is considered to be statistically significant

Chart 20: Comparision of granular layer in biopsy proven cases of Palmar psoriasis, Hand eczema and Eczema in psoriatico



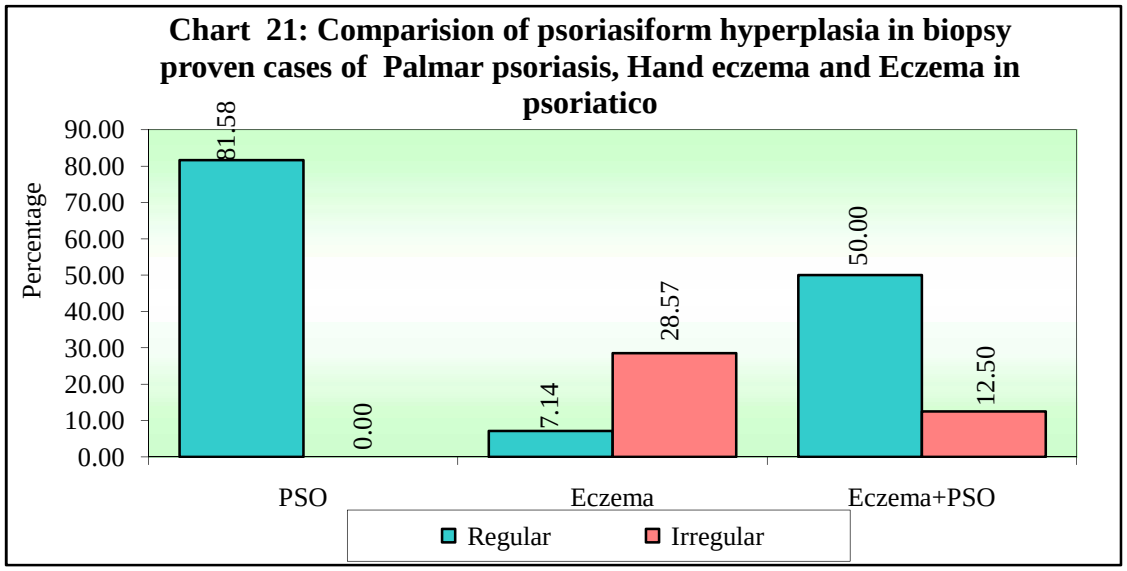
23. Psoriasiform hyperplasia on biopsy

Majority of **palmarpsoriasis cases showed statistically significant (p=0.0001) psoriasiform hyperplasia** in 81% cases (n=31). Absent in 64.2% (n=9) cases of hand eczema and 37.5% (n=3) in eczema in psoriatico. Irregular hyperplasia in 28.5% (n=4) cases of hand eczema.

Table 23:Comparision of psoriasiform hyperplasia in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Psoriasiform hyperplasia	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Regular	31	81.58	1	7.14	4	50.00	36	60.00
Irregular	0	0.00	4	28.57	1	12.50	5	8.33
Absent	7	18.42	9	64.29	3	37.50	19	31.67
Total	38	100	14	100.0	8	100.0	60	100.0
Chi-square=26.2111, P = 0.0001*								

*p<0.05 is considered to be statistically significant



24. Epidermal inflammatory cells on biopsy

Majority of palmar psoriasis patients had significant (p=0.0288) neutrophils i.e 63% (n=24) followed by 5.2% (n=2) each of a combination of lymphocytes+neutrophils and neutrophils+eosinophils. In hand eczema 14.2% (n=2) each of eosinophils and neutrophils were observed. In eczema in psoriatico a maximum of neutrophils i.e 37% (n=3) was noted.

Table 24:Comparision of epidermal inflammatory cells in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Cells	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
E	1	2.63	2	14.29	0	0.00	3	5.00
L/E	0	0.00	0	0.00	1	12.50	1	1.67
L/N	2	5.26	0	0.00	1	12.50	3	5.00
L/N/E	1	2.63	0	0.00	0	0.00	1	1.67
N	24	63.16	2	14.29	3	37.50	29	48.33
N/E	2	5.26	0	0.00	0	0.00	2	3.33
Chi-square=20.05, P = 0.0288*								

*p<0.05 is considered to be statistically significant

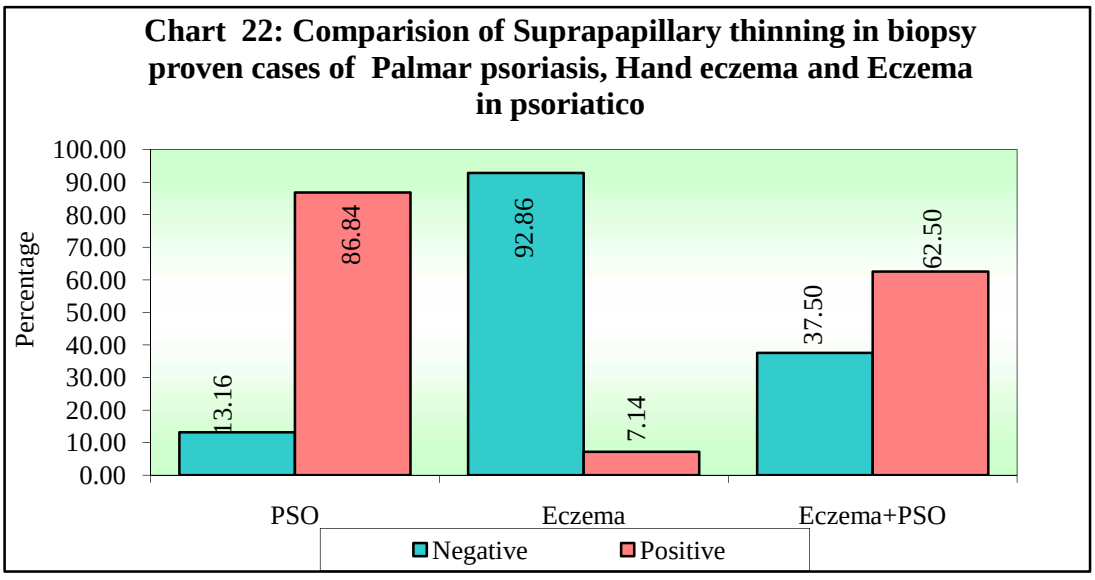
25. Suprapapillary thinning on biopsy

Presence of **suprapapillary thinning was statistically significant (p=0.0001) in palmar psoriasis**i.e 86.8% (n=33). Also present in 62.5% (n=5) cases of eczema in psoriatico.Whereas in hand eczema there was no thinning of suprapapillary dermis in 92.8% (n=13) cases.

Table 25:Comparision of Suprapapillary thinning in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Supra-papillary thinning	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Absent	5	13.16	13	92.86	3	37.50	21	35.00
Present	33	86.84	1	7.14	5	62.50	39	65.00
Total	38	100.00	14	100.00	8	100.00	60	100.00
Chi-square=28.5901, P = 0.0001*								

*p<0.05 is considered to be statistically significant



26. Mitotic figures on biopsy

In total 30 out of 38 patients (78.9%) of palmar psoriasis patients, 7 out of 14 patients (50%) of hand eczema patients, 6 out of 8 patients (75%) of eczema in psoriatico had mitotic figures in their basal layer.

Table 26:Comparision of mitotic figures in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Mitotic figures	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
1	4	10.53	4	28.57	1	12.50	9	15.00
2	11	28.95	1	7.14	3	37.50	15	25.00
3	1	2.63	2	14.29	2	25.00	5	8.33
4	6	15.79	0	0.00	0	0.00	6	10.00
5	5	13.16	0	0.00	0	0.00	5	8.33
6	3	7.89	0	0.00	0	0.00	3	5.00

27.Additional features in epidermis on biopsy

Majority of palmar psoriasis cases i.e 26.3% (n=10) , hand eczema cases i.e 28.5% (n=4) had extravasation of RBC in epidermis along with bacterial colonies, necrotic keratinicytes. Only necrotic keratinocytes were seen in 13.16% (n=5) of palmar psoriasis, 21.43% (n=3) of hand eczema, 50% (n=4) of eczema in psoriatico cases.

Table 27:Comparision of Additional features in epidermis of biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

In stratum corneum	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
RBC	8	21.05	3	21.43	0	0.00	11	18.33
Bacterial colonies	0	0.00	1	7.14	0	0.00	1	1.67
Bacterial colonies, RBC	1	2.63	1	7.14	0	0.00	2	3.33
Necrotic keratinocytes	5	13.16	3	21.43	4	50.00	12	20.00
Necrotic keratinocytes, RBC	1	2.63	0	0.00	1	12.50	2	3.33
Spongiotic vesicles	1	2.63	0	0.00	1	12.50	2	3.33

28. Dilated capillaries on biopsy

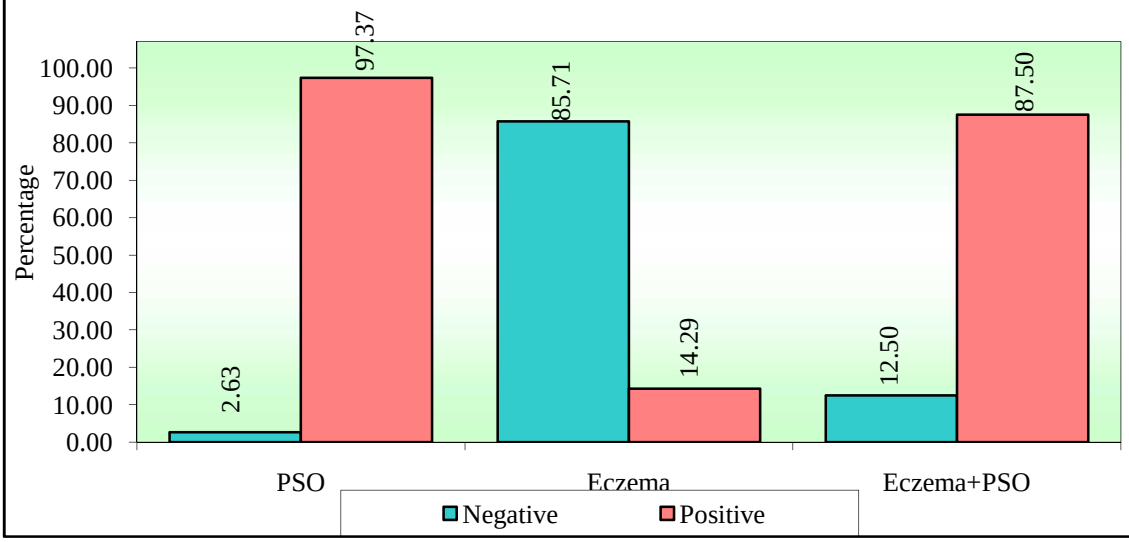
Presence of **Dilated capillaries was statistically significant (p=0.0001) in palmar psoriasis**i.e 97.3% (n=37). Also present in 87.5% (n=7) cases of eczema in psoriatico. Whereas in hand eczema there was an absence of dilated capillaries in 85.7% (n=12) cases.

Table 28:Comparision of Dilated capillaries in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Dilated capillaries	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
Absent	1	2.63	12	85.7	1	12.50	14	23.33
Present	37	97.37	2	14.29	7	87.50	46	76.67
Total	38	100.00	14	100.00	8	13.33	60	100.00
Chi-square=40.0832 P = 0.0001*								

*p<0.05 is considered to be statistically significant

Chart 23: Comparision of Dilated capillaries in biopsy proven cases of Palmar psoriasis, Hand eczema and Eczema in psoriatico



29. Perivascular dermal infiltrate on biopsy

In palmar psoriasis 78.9% (n=30) had highly significant mixed infiltrate of lymphocytes+neutrophils (p<0.0001) followed by 16.6% (n=5) with only neutrophils. In hand eczema 28.5% each (n=4) had only lymphocytes and lymphocytes+eosinophils followed by 14.2% each (n=2) with lymphocytes+neutrophils and all 3 types of cells. Whereas in eczema in psoriatico majority i.e 87.5% (n=7) showed the presence of all 3 inflammatory cells.

Table 29:Comparision of perivascular dermal infiltrate in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

Peri-vascular infiltration	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
L +	0	0.00	4	28.57	0	0.00	4	6.67
N+	5	13.16	1	7.14	0	0.00	6	10.00
L/E +	2	5.26	4	28.57	1	12.50	7	11.67
L/N +	30	78.95	2	14.29	0	0.00	32	53.33
N/E+	1	2.63	0	0.00	0	0.00	1	1.67
L/N/E +	0	0.00	2	14.29	7	87.50	9	15.00
Chi-square=66.65 P<0.0001*								

*p<0.05 is considered to be statistically significant

30. Deep dermal infiltrate (DI) on biopsy

In majority of palmar psoriasis cases 10% (n=4) of lymphocytic infiltrate , in hand eczema cases 14.2% (n=2) of lymphocyte+eosinophilic infiltrate , in eczema in psoriatico 12.5% (n=1) of eosinophilic infiltrate was noted.

Table 30:Comparision of deep dermal infiltrate in biopsy proven cases of palmar psoriasis, hand eczema and eczema in psoriatico

DI	Pso	%	Eczema	%	Eczema+Pso	%	Total	%
E	0	0.00	1	7.14	1	12.50	2	3.33
L	4	10.53	1	7.14	0	0.00	5	8.33
N	1	2.63	0	0.00	0	0.00	1	1.67
E/N	0	0.00	1	7.14	0	0.00	1	1.67
L/E	0	0.00	2	14.29	0	0.00	2	3.33
L/E/N	0	0.00	1	7.14	0	0.00	1	1.67
L/N	1	2.63	0	0.00	0	0.00	1	1.67

31. Agreement between dermoscopic diagnosis and histopathological diagnosis

Both dermoscopic provisional diagnosis and confirmatory histopathological diagnosis were the same in 35 palmar psoriasis cases. Whereas 3 cases were given a provisional diagnosis by dermoscopy as eczema but turned out to be psoriasis. All the 14 cases of hand eczema were predicted by dermoscopy and were confirmed by biopsy. 3 cases of palmar psoriasis, 5 cases of hand eczema by dermoscopy were confirmed to be eczema in psoriatico by biopsy.

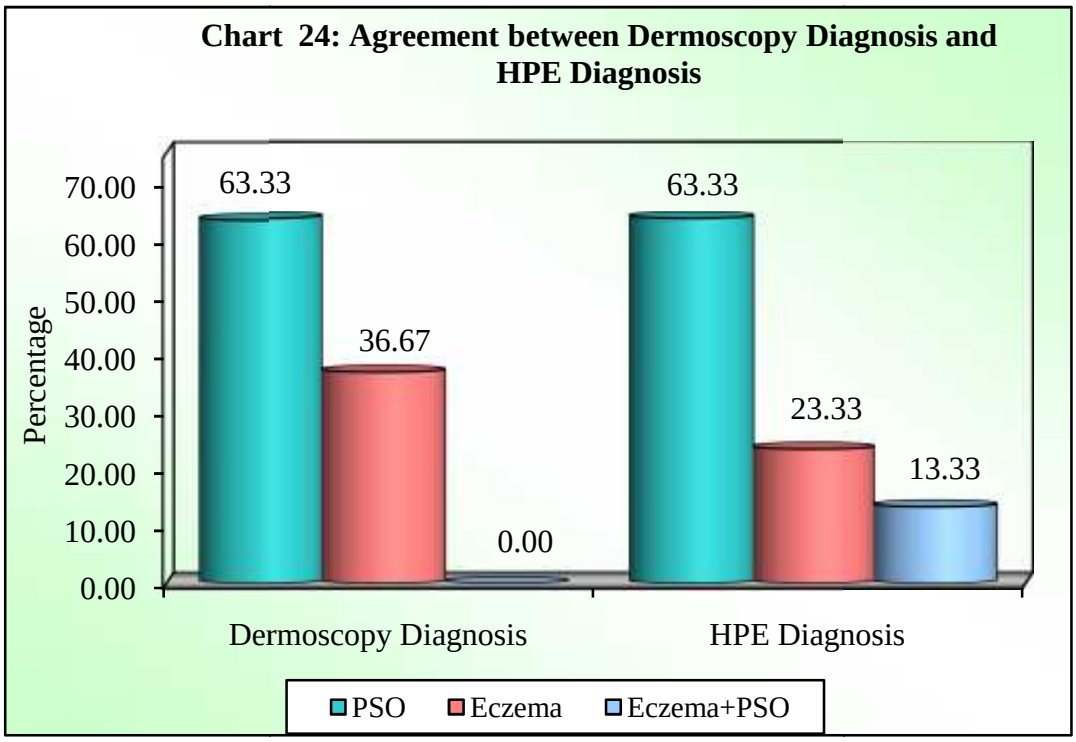
Table 31: Correlation between dermoscopic diagnosis and histopathological diagnosis

Dermoscopy	**Histopathology**				
	Pso	Eczema	Eczema+Pso	Total	%
Pso	35	0	3	38	63.33
Eczema	3	14	5	22	36.67
Total	38	14	8	60	100.00
%	63.33	23.33	13.33	100.00	

Table 32: Kappa agreement between dermoscopic diagnosis and histopathological (HPE) Diagnosis :

Statistically significant (p=0.0001) agreement exists between dermoscopy and histopathology

Agreement	Kappa	Std. Err.	Z-value	Prob>Z
81.69%	0.6382	0.1022	6.2501	0.0001*



32. Sensitivity and specificity of dermoscopic diagnosis versushistopathological diagnosis

We observed 92% sensitivity with 82% specificity with dermoscopy in order to predict palmar psoriasis. Whereas it has 100% sensitivity and 85% specificity in order to predict hand eczema.

With a positive and negative predictive value of 90% and 86% respectively in palmar psoriasis, 67% and 100% in hand eczema.

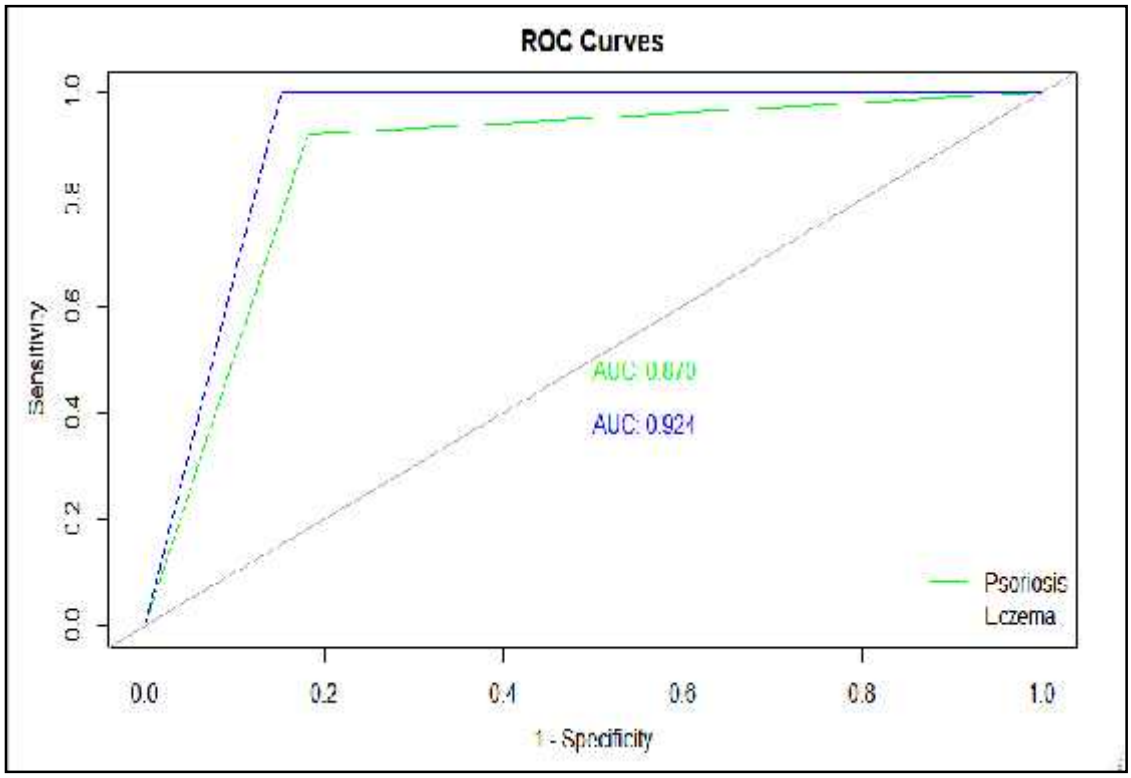
Table 33: Sensitivity and specificity analysis of dermoscopic diagnosis versushistopathological diagnosis

		Histopathology					
		Pso		Eczema		Eczema+Pso	
		Present	Absent	Present	Absent	Present	Absent
Dermoscopy	Present	35	4	14	7	0	0
	Absent	3	18	0	39	8	52
Sensitivity		0.92		1		0	
Specificity		0.82		0.85		1	
PPV		0.90		0.67		NA	
NPV		0.86		1		0.87	

33. Roc curve of palmar psoriasis and hand eczema

Area under the curve in palmar psoriasis and hand eczema were 0.87 and 0.92 respectively.

Chart 25: ROC curve between dermoscopic and histopathological features of psoriasis and eczema



DISCUSSION

A total of 60 patients were recruited in our study. The diagnosis of palmar psoriasis, hand eczema , eczema in psoriatico was reached upon by clinico-pathologic correlation.

In our study the age range was 20- 60+ years with a mean age of 43.92 ± 14.3 years in palmar psoriasis, age range was 20-60+ years with a mean age of 41.14 ± 13.6 years in hand eczema which is similar to a study done by Cetinarslan T et al.[173] showing an age range with a mean age in palmar psoriasis and hand eczema to be 18-73 years, 44.60 ± 13.9 years ; 18-75 years ; 45.60 ± 16.2 years respectively.

There is a male predominance i.e 55 % (21/38) males, 44% (17/38) females in palmar psoriasis ; 71.4% (10/14) males, 28.5% (4/14) females in hand eczema in our study. Near similar to the other 2 studies done by Chopra A et al. [4] i.e 56.25% males, 43.7% females in palmar psoriasis ; 60.9% males, 39% females in hand eczema and by Cetinarslan T et al.[173] i.e 51.4% males, 48.6% females in palmar psoriasis ; 56% males, 43.6% females in hand eczema.

Majority of the palmar psoriasis patients i.e 42.1% (16/38) in our study had a duration of less than one year , and 21% (8/38) are between 1-2 years , which is near similar to a study done by Chopra A et al.[4] showing 37.5% and 26% respectively. Whereas hand eczema patients in our study with a duration of around 2 years account to 28.5% (4/14) having a high incidence compared to 21.8% by Chopra A et al. [4]

In our study significant winter exacerbation of psoriatic lesions were observed in 89% (34/38) with a high frequency in comparison to a similar study done by Khandpur S et al.[25] showing 70% (44/62).

In our study, associated joint involvement with psoriasis was present in 20.8% (8/38) of the cases slightly similar to the study done by Ferrandiz C et al.[174] described joint involvement in 17%.

A total of 71% (27/38) of palmar psoriasis had nail involvement, among them predominantly were pitting 55% (21/38) followed by 39.5% (15/38) had onycholysis, 36.8% (14/38) had subungual hyperkeratosis in comparision to the study done by Khandpur S et al.[25] observed nail changes in 41.5% (64/154), having pitting in 46.8% , subungual hyperkeratosis 37%. Whereas in our study hand eczema cases had 7% (1/14) each of pitting, subungual hyperkeratosis comparable to 6.36% by Chopra A et al.[4] indicating insignificant nail involvement.

In our study history of allergy towards detergents was seen in 35% (5/14) of cases of hand eczema , which was similar to a study conducted by Suman M et al.[175] were 37% are secondary to detergents, household work. Also an allergy towards cement in our study accounted to 21.4% (3/14) compared to a study by Kishore NB et al. [132] was 26% (13/50).

Dermoscopy features :

In our study, predominantly diffuse scales was observed i.e 76.3% (29/38) in palmar psoriasis , 57.1% (8/14) in hand eczema similar to 74.3% (26/35) in palmar psoriasis , 56.4% in hand eczema in the study by Cetinarslan T et al.[173] Whereas the remaining percentage of scales were focally distributed i.e 23% (9/38) in palmar

psoriasis , 42.8% (6/14) in hand eczema in our study similar to 22.8% (8/35) in palmar psoriasis, 43.6% in hand eczema by Cetinarslan T et al.[173]

Color of scales in palmar psoriasis in our study were predominantly white 60.5% (23/38) , yellow 0%, both white and yellow 39.47% (15/38) similar to the findings of 65.7% (23/35) , 0% (0/35) , 34.3% (12/35) respectively by Cetinarslan T et al.[173]

Whereas in case of hand eczema , our study had majority of both white and yellow scales 57.14% (8/14) followed by yellow scales 28.5% (4/14) , white 14.2% (2/14) which varied significantly from a study done by Cetinarslan T et al.[173] which show predominantly yellow scales 85.5% followed by both 12.7% , white 1.8%. Also a study done by Errichetti E et al [8] showed a majority of yellow scales 90.9% (10/11) in eczema. Hence more studies with larger sample size are required to verify the significance of these findings.

On dermoscopy dotted type of vessels was the most common type in both palmar psoriasis and hand eczema with 76.3% (29/38) and 78.5% (11/14) respectively in our study, but on comparision with Cetinarslan T et al.[173] the values varied i.e 51.4% (18/35) and 58.2% in palmar psoriasis and hand eczema respectively.

In our study, glomeruloid variant 15.7% (6/38) was seen over palms of the psoriatic patients having established erythroderma or chronic plaque psoriasis who evolved into erythroderma and absent in those with eczema. This is in contrast with the study by Cetinarslan T et al.[173] who reported presence of glomeruloid variant 7.3% in hand eczema and absent in palmar psoriasis. Thereby a need of more studies to observe this variation.

The hair pin/loop type of vessels in hand eczema was seen in 7.1% (1/14) in our study which varies with 1.8% by Cetinarslan T et al.[173] This feature was not observed in palmar psoriasis in both our and the study by Cetinarslan T et al. [173]

Undifferentiable vessels in our study were seen in 7.89% (3/38) of palmar psoriasis, 14.2% (2/14) in hand eczema which was lesser in numbers compared to 31.4% (11/35) and 16% respectively by Cetinarslan T et al.[173]

Regular distribution of vessels with statistical significance seen in 71.05% (27/38) cases of palmar psoriasis in our study with a high incidence compared to 40% (14/35) by Cetinarslan T et al.[173] Whereas patchy distribution in palmar psoriasis was 2.63% (1/38) in our study, similar to 2.9% (1/35) by Cetinarslan T et al.[173]

Patchy distribution of vessels was more common in hand eczema i.e 57.14% (8/14) by our study slightly similar to 47.3% by Cetinarslan T et al.[173], while regular array is 0% in our study but 3.6% by Cetinarslan T et al.[173]

Most common in palmar psoriasis was light red background erythema 65.7% (25/38) which was nearly similar to the study by Cetinarslan T et al.[173] 48.6% (17/35). Light red background erythema showed statistical significance with diagnosis of palmar psoriasis in our study. Whereas yellowish+dull red background in hand eczema, in our study a high incidence compared to Cetinarslan T et al.[173] was in the form of 57% (8/14) vs 36.4% respectively.

Additional features in the form of brownish orange dots in our study was 35.7% (5/14) similar to 34.5% in study by Cetinarslan T et al.[173], and it greatly varied with the study by Errichetti E et al[8] 72% (8/11). Presence of yellow orange clods in our study showed lower occurrence i.e 21% (3/14) compared to the high incidence

values of 43% by Cetinarslan T et al.[173] and 63% (7/11) by Errichetti E et al. [8] These features give a clue to diagnose hand eczema , hence need to be further studied.

Biopsy features :

Parakeratosis : In palmar psoriasis and hand eczema were found to be 73.6% (28/38) and 78.5% (11/14) in our study which varies from the study by Rao A et al.[92] showing 90.3% and 62.5% respectively. Eczema in psoriatico had 62.5% (5/8) in our study which differed from study by Kolesnik M et al.[149] who had high incidence of 100% (33/33).

Spongiosis : In our study mild , moderate , severe spongiosis in palmar psoriasis were found to be 76.3% (28/38) , 21.05% (8/38) , 2.63% (1/38) whose values are not similar to a study by Rao A et al.[92] showing 35.5% , 16.1% , 9.7% respectively. But both the studies showed the presence of mild spongiosis to a greater portion.

In hand eczema mild , moderate , severe spongiosis in our study was 50% (7/14) , 28.5% (4/14) , 14.2% (2/14) in comparision to a study by Rao A et al.[92] i.e 29.2% , 20.8% , 20.8% respectively. Indicating severe spongiosis was seen more commonly in hand eczema than palmar psoriasis.

Severe spongiosis with spongiotic vesicles in eczema in psoriatico was 12.5% (1/8) in our study with a less incidence compared to a study by Kolesnik M et al.[149] showing 36% (12/33) due to more sample size.

Acanthosis : Regular acanthosis in palmar psoriasis was significant in our study and also by Caesinaro et al.[94] with values of 94.7% (36/38) and 68.5% respectively. But it greatly varies from the studies conducted by Rao A et al.[92] 27.6%

and Hesari K et al.[95]30.5% (11/36). Whereas rest were irregular acanthosis i.e 2.6% (1/38) in our study which greatly varies with 69.4% (25/36) by Hesari K et al.[95] , 31.5% by Caesinaro et al[94] , 72.4% by Rao A et al.[92]

Irregular acanthosis was prominent in hand eczema with 78.5% (11/14) in our study near similar to 75% (12/16) by Hesari K et al.[95] and varies with 69% (9/13) by Kolesnik M et al.[149] , 65% by Caesinaro et al[94], 90.9% by Rao A et al.[92] Regular acanthosis were 7.14% (1/14) in our study near similar to 9.1% by Rao A et al.[92] and varies with 35% by Caesinaro et al[94] , 25% (4/16) by Hesari K et al.[95]

In eczema in psoriatico, regular and irregular acanthosis in our study and by Kolesnik M et al.[149] were 75% (6/8), 25% (2/8) and 52% (17/33), 0% respectively. Remaining cases in the study by Kolesnik M et al.[149] observed a mixed variant i.e both regular and irregular in 48% (16/33). Hence in need of more studies to observe the findings.

Fibrin globules : In palmar psoriasis and hand eczema, observed in our study showed a higher incidence of values i.e 60.5% (23/38) and 28.4% (4/14) in comparision with 38.7% , 33.3% by Rao A et al.[92] and 11.8% and 4% by Aydin et al.[93] respectively. And varies with 81% , 95% by Caesinaro et al.[94] ; 72.2% (26/36) ,100% (16/16) by Hesari K et al.[95] respectively.

Plasma mounds : In palmar psoriasis and hand eczema, values observed in our study were 34.2% (13/38) , 50% (7/14) showing a low incidence in comparision to 72.2% (26/36), 100% (16/16) by Hesari K et al.[95] In eczema in psoriatico we observed 37% (3/8) in our study depecting a higher incidence comparable to 21% (7/33) by Kolesnik M et al.[149].

Neutrophils in stratum corneum : Observed in palmar psoriasis and hand eczema by our study was 76% (29/38) , 14.2% (2/14) which was near similar to 72.2% (26/36) , 0% (0/16) by Hesari K et al.[95] But 45.5%, 35% by Caesinaro et al.[94] and 6.9% , 0% by Rao A et al.[92] showed lesser values of neutrophils in stratum corneum in palmar psoriasis and hand eczema compared to our study. In eczema in psoriatico, our study had 50% (4/8) neutrophils, whereas by Kolesnik M et al.[149] was 76% (25/33) depecting a higher incidence.

Hypogranulosis : In palmar psoriasis and hand eczema, hypogranulosis in our study was 78% (30/38), 35.7% (5/14) which varies with 75% (27/36) ,18.8% (3/16) by Hesari K et al.[95] and 22.6% , 4.2% by Rao A et al.[92] Eczema in psoriatico had 37.5% (3/8) in our study comparable to 33% (11/33) by Kolesnik M et al.[149]

Psoriasiform hyperplasia : In palmar psoriasis, significant regular hyperplasia showed high incidence in our study i.e 81.5% (31/38) compared to 50% by Park et al.[176] Irregular hyperplasia is absent in our cases but seen in 43% by Park et al.[176]

Regular and irregular hyperplasia in hand eczema was 7.14% (1/14), 28.5% (4/14) in our study which was much lesser than a study by Park et al.[176] i.e 35%, 50% respectively.

Suprapapillary thinning : In palmar psoriasis there was a significant thinning of 86.8% (33/38) in our study near similar to a study by Hesari K et al.[95] i.e 72.2% (26/36). It varies from a study by Rao A et al.[92] 51.7%.Whereas in hand eczema the values are 7.14% (1/14) in our study similar to 8% (1/13) by Kolesnik M et al.[149] and varies with Hesari K et al.[95] 25% (4/16) , Rao A et al.[92] 22.7%. In eczema in

psoriatico had 62.5% (5/8) in our study comparable to a higher incidence study i.e 85% (28/33) by Kolesnik M et al.[149]

Mitotic figures : Our study showed a high incidence of mitosis in basal layer i.e 78.9% (30/38), 50% (7/14) in palmar psoriasis and hand eczema varies with 30.6% (11/36) , 25% (2/16) by Hesari K et al.[95]

Rbc extravasation : Our study showed lesser values of extravasation i.e 26.3% (10/38) , 28.5% (4/14) in palmar psoriasis and hand eczema in comparision to 72.2% (26/36) , 50% (8/16) by Hesari K et al.[95]

Dilated capillaries : In palmar psoriasis and hand eczema, in our study it is statistically significant with higher frequency i.e 97.3% (37/38), 14.2% (2/14) in comparision to 63.9% (23/36) , 6.3% (1/16) by Hesari K et al.[95] But studies by Rao A et al.[92] showed 38.7%, 50% and Aydin et al.[93] showed 76.5%, 72% values which are not in agreement with our study. In eczema in psoriatico, our study had 87.5% (7/8) near similar to 99% (33/33) by Kolesnik M et al.[149]

Dermal infiltrate : Dermal inflammatory infiltrate in palmar psoriasis and hand eczema, in our study accounts to 100% (38/38) and 92.8% (13/14) with a high incidence in comparision to a study by Rao A et al.[92] showing 84% , 75% respectively.

CONCLUSION

The study included a total of 60 patients with diagnosis of either psoriasis/ eczema/eczema in psoriatico over palms on clinico-histopathological correlation, and their dermoscopic features were noted to aid in differentiating the conditions.

Our study showed a male predominance. The common age group affected in palmar psoriasis was 60 years and above, in hand eczema between 20-29 years and in eczema in psoriatico between 40-49 years. Mean duration of the onset of the lesions were 1.73 years. In palmar psoriasis , there was a significant aggrevation of disease in winters. Predominantly pitting followed by onycholysis and subungual hyperkeratosis were the nail changes observed in patients of psoriasis. There was insignificant nail involvement in those with eczema. Commonest allergen causing hand eczema, according to history were detergents and pesticides followed by cement.

On dermoscopy, characteristic features of palmar psoriasis were diffuse white scales , dotted vessels followed by glomeruloid vessels in a regular distribution over a light red background. In hand eczema, a combination of diffusely distributed white and yellow scales with dotted vessels in a patchy vascular arrangement over a yellowish dull red background was noted along with additional features of brownish-orange dots/globules and yellow-orange clods, whereas in eczema in psoriatico we noted a overlapping features of the two i.e diffuse white and yellow scaling with regular dotted to undifferentiated vessels over a background erythema of light red to yellowish dull red.

On biopsy of lesions, characteristic features noted in palmar psoriasis were presence of regular acanthosis, mild spongiosis, few fibrin globules with neutrophils in epidermis, hypogranulosis, psoriasiform hyperplasia and suprapapillary thinning with presence of dilated capillaries in dermis. In hand eczema characteristic features were moderate to severe spongiosis, irregular acanthosis, few plasma mounds, preserved granular layer, absent psoriasiform hyperplasia. Eczema in psoriatico showed mixture of the two.

Dermoscopy acts as a accurate tool to study the specific features and hence should be used as a routine method. It would aid in diagnosing doubtful cases and also in differential diagnosis which may evade the need for biopsy in most instances.

However, more studies with larger sample size will help to standardize the specific features in each of these condition.

SUMMARY

This was a hospital based cross sectional study carried out from 1st January 2019 to 31st December 2019. The source of the data were patients who on history and clinical examination having palmar psoriasis or hand eczema attending the Dermatology Opd, at KLE'S Dr. Prabhakar Kore Hospital, Belagavi. The objective of the study was to study the dermoscopic features in biopsy proven cases of palmar psoriasis and chronic hand eczema.

Those with hyperkeratotic lesions over palms other than psoriasis/ eczema were excluded. After fulfilling the criteria , these patients were recruited by taking an informed and written consent.

The sample size was 60 patients. A detailed history was asked followed by a dermatological and systemic examination .Of the clinically recruited patients, photographs of the lesions were taken. Dermoscopic examination of the lesions over palms was performed using a videodermatoscope- dinolite premier AM4113ZT model and the dermoscopic images were recorded and a provisional diagnosis was given. A biopsy over a palmar lesion was performed under aseptic conditions and sent for histopathological examination to confirm, and a diagnosis was made upon clinico-histopathological correlation into either palmar psoriasis /hand eczema/ eczema in psoriatico. The data was noted in a pre-designed proforma. The results were tabulated and analysed using appropriate statistical method.

All three conditions were more common in males (63.3%). The mean duration of presentation of the lesions was 1.73 years.

On dermoscopy, characteristic features of palmar psoriasis were diffuse white scales , dotted vessels followed by glomeruloid vessels in a regular distribution over a light red background.

In dermoscopy of hand eczema, a combination of diffusely distributed white and yellow scales with dotted vessels in a patchy vascular arrangement over a yellowish dull red background were noted along with additional features of brownish-orange dots/globules and yellow-orange clods.

Whereas in eczema in psoriatico we noted overlapping dermoscopic features of the two i.e diffuse white and yellow scaling with regular dotted to undifferentiated vessels over a background erythema of light red to yellowish dull red.

With dermoscopy there was 92% sensitivity, 82% specificity for diagnosing palmar psoriasis and 100% sensitivity, 85% specificity for diagnosing hand eczema. Hence dermoscopy is helpful in differentiating the two in doubtful cases.

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ANNEXURE-I-ETHICAL CLEARANCE LETTER

K.L.E. ACADEMY OF HIGHER EDUCATION AND RESEARCH
(Deemed – to- be- University)
Accredited 'A' Grade by NAAC (2nd Cycle) Placed in Category 'A' by MHRD (GoI)
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
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Ref: MDC/DOME/76 **Date: 24/11/2018**

To,

REG NO. : BT0118001

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"A CROSS SECTIONAL STUDY TO ASSESS THE ROLE OF DERMOSCOPY IN DIFFERENTIATING PALMAR PSORIASIS AND CHRONIC HAND ECZEMA IN PATIENTS ATTENDING A TERTIARY CARE HOSPITAL"**, is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Arathi Darshan)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Roopa M Bellad)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

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ANNEXURE - II

INFORMED CONSENT FORM

I.D.NO. | | | |

Title of the study:A cross sectional study to assess the role of dermoscopy in differentiating palmar psoriasis and chronic hand eczema in patients attending a tertiary care hospital

The study is conducted by _____, Post Graduate (M.D) student in Dermatology under the guidance of _____**,** Associate Professor , Department of Dermatology, Venereology and Leprosy, JNMC, BELAGAVI.

Respected Sir/Madam,

We invite you to participate in our study as, you are eligible for the same. During the study you will be asked some questions in detail regarding your present complaints.

Purpose of the study:

Clinical differentiation between Palmar psoriasis and chronic hand eczema may sometimes be a difficult task and as they are associated with certian findings which can be seen using an instrument called dermoscope.Hence the study intends to observe those changes/findings using the dermoscope.Following which confirmation of the diagnosis will be done using biopsy.You are being requested to participate in this

research because you have been diagnosed to have either palmar psoriasis or chronic hand eczema.

Procedure:

Should you choose to participate, you will be asked to give a detailed history of your disease , undergo a physical examination. Following which over both the palms clinical photography, dermoscopic examination will be done and over a specified lesion skin biopsy is performed which requires local anesthesia and 4mm of skin will be taken for the purpose of this study after which it will be studied under a light microscope for the confirmation of the diagnosis.

Risks and benefits:

While doing skin biopsy, you may experience slight pain due to the procedure. However all necessary steps and precautions will be taken to ensure your safety. The result of you taking part in this research would help health care providers towards a better understanding of this disease, and thus we will be able to provide improved patient care.

Alternatives:

If you decide not to participate in this study, you will still be receiving the usual standard care for your disease.

Privacy and confidentiality:

Your privacy will be respected and all information collected about you during the course of this study will be kept confidential. Your identity will remain undisclosed.

Relations with the Institutional policy:

The J N Medical College will provide, within the limitations of the laws of the State of Karnataka, facilities and medical attention to patients who suffer injuries as a result of participating in this project.

Financial incentives:

You shall not be receiving any payment or any financial incentives for participating in this study.

Authorization to publish results:

The results of this study may be published for scientific purpose or presented to a scientific group. Your identity, however, will be maintained confidential at all times.

Voluntary participation:

In case you need further information regarding your rights as a study participant, you may please contact Dr.ROOPA BELLAD, Telephone No:9448113403 Chairman of the ethical committee, J N Medical College, Belagavi.

STATEMENT OF CONSENT

I.D.NO: | | | |

I Mr/Ms/Mrs ---------- volunteer and consent to participate in this study. I have read the consent document orit has been read to me in my vernacular language. I accept to participate in the study. All the information regarding this study is provided to me and I have understood the same. I have been given the opportunity to ask questions and obtain appropriate answers.

Participant's name:

Signature or left thumb print of participant:

Witness name:

Signature of witness

Signature of the investigator :

ANNEXURE-III

PROFORMA

Case no- OP No-

Date- IP No-

Name-

Age-

Gender-

Occupation-

Address with phone number-

PRESENTINGCOMPLAINTS:

HISTORY OF PRESENTING ILLNESS:

1. Onset: □ Sudden □ Gradual
2. Progression: □ Progressive □ Stationary
3. H/o Erythema: □ Present □ Absent
4. H/o Joint pains: □ Present □ Absent
5. H/o Remissions & exacerbations: □ Present □ Absent
6. H/o Fever/ pus filled lesions: □ Present □ Absent
7. H/o Fissure formation: □ Present □ Absent
8. H/o Oozing: □ Present □ Absent
9. H/o Lesions elsewhere on the body: □ Present □ Absent
10. H/o Use of medication prior to the visit: Topical Present □ Absent □

Systemic Present □ Absent □

11. H/o Nail involvement: Present Absent

12. H/o Contact with allergens: Present Absent

13. H/o Atopy: Self ☐ Present ☐ Absent

Family members Present ☐ Absent ☐

Triggering & modifying factors:

A. Local factors: Trauma ☐ Present ☐ Absent

B. Seasonal variation(Exacerabation): Winter: ☐ Present ☐ Absent

Summer: Present Absent ☐ ☐

C. Drugs ☐ Present ☐ Absent

Initial Lesion : Erythema Scaling Fissuring Oozing

Associated factors: Itching Pain Asymptomatic

PAST HISTORY:

K/c/o DM ☐ Present ☐ Absent

K/c/o HTN ☐ Present ☐ Absent

FAMILY HISTORY:

H/o similar complaints in the family (First blood relatives): ☐ Present ☐ Absent

PERSONAL HISTORY:

Diet: ☐ Vegetarian ☐ Mixed

Alcohol: ☐ Present ☐ Absent

Smoking: ☐ Present ☐ Absent

Stress: ☐ Present ☐ Absent

LESIONS ELSEWHERE ON THE BODY:

CUTANEOUS EXAMINATION OF PALMS:

A)**Types of lesions**-

1)Papules: ☐ Present ☐ Absent

2)Plaques: ☐ Present ☐ Absent

3)Pustules: ☐ Present ☐ Absent

4)Erythema: ☐ Present ☐ Absent

5)Scaling: ☐ Present ☐ Absent

6) Fissuring: ☐ Present ☐ Absent

7)Oozing: ☐ Present ☐ Absent

B)**Distribution**-

☐ Symmetrical ☐ Asymmetrical ☐ Localised ☐ Generalised

C)**Size of lesion**: ☐ Small(0.5-1cm) ☐ Large(2-5cm) ☐ Larger

D)**Sites involved :**

E)**Types of scaling**: ☐ Firmly adherent ☐ Loosely adherent

F)**Margins:** ☐ Sharply defined ☐ Ill defined

F)**Auspitz sign** ☐ Present ☐ Absent

I)**Koebner's phenomenon** ☐ Present ☐ Absent

J)**Nail lesions:**

1)Pitting ☐ Present ☐ Absent

2)Subungual hyperkeratosis ☐ Present ☐ Absent

3)Onycholysis ☐ Present ☐ Absent

4)Splinterhaemorrhages ☐ Present ☐ Absent

5)Beau's lines ☐ Present ☐ Absent

K)**Joint involvement**: ☐ Present ☐ Absent

If present, involved joint(s)-

Distal interphalangeal Proximal interphalangeal Sacroiliac Metatarsophalangeal

Knee joint Elbow joint Wrist joint

CLINICAL DIAGNOSIS-

DERMOSCOPIC FINDINGS

Scales: Distribution- ☐ Focal ☐ Diffuse

Colour- White ☐ Yellow Both ☐

Vessels: Type- ☐ Dotted glomerular(tufted) loops/ hairpin U☐differentiated

Distribution- ☐ Regular ☐ Patchy ☐ Clustered ☐ Undifferentiated

Background erythema- ☐ Dull red ☐ Light red ☐ Bright red ☐ Yellowish (Y) ☐ Y+Dull red

Y+Light red Y+Bright red ☐

Brownish-orange dots/ globules - ☐ Present ☐ Absent

Yellow-orange clods- ☐ Present ☐ Absent

Yellow clods- ☐ Present ☐ Absent

Loops around fissures- ☐ Present ☐ Absent

PROVISONAL DIAGNOSIS-

SKIN BIOPSY NUMBER-

Site of biopsy :

EPIDERMIS :

Hyperkeratosis- ☐ Present ☐ Absent

Parakeratosis- ☐ Present ☐ Absent

Spongiosis- ☐ Absent ☐ 1+ ☐ 2+ ☐ 3+

Acanthosis- ☐ Absent ☐ Regular ☐ Irregular

Fibrin- ☐ Absent ☐ 1+ ☐ 2+ ☐ 3+

Plasma mounds- ☐ Absent ☐ 1+ ☐ 2+ ☐ 3+

Granular layer- thickness ☐ Absent ☐1+ ☐2+ ☐3+ ☐4+

Psoriasiform hyperplasia ☐Absent ☐Regular ☐ Irregular

Epidermal inflammatory cells- Type :

Suprapapillary thinning- ☐ Absent ☐ Present

Mitotic figures- Number:

Additional features:

DERMIS :

Dilated capillaries- ☐ Absent ☐ Present

Perivascular dermal infiltrate :

Deep dermal infiltrate :

SKIN BIOPSY REPORT :

Signature:

ANNEXURE IV – PHOTOGRAPHS

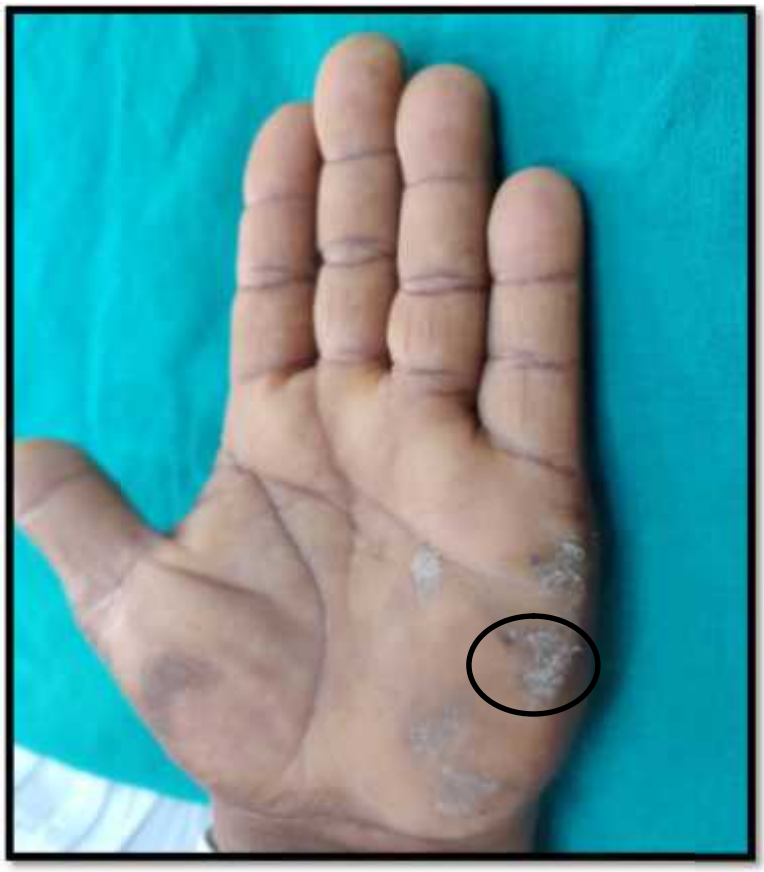


Figure 1a

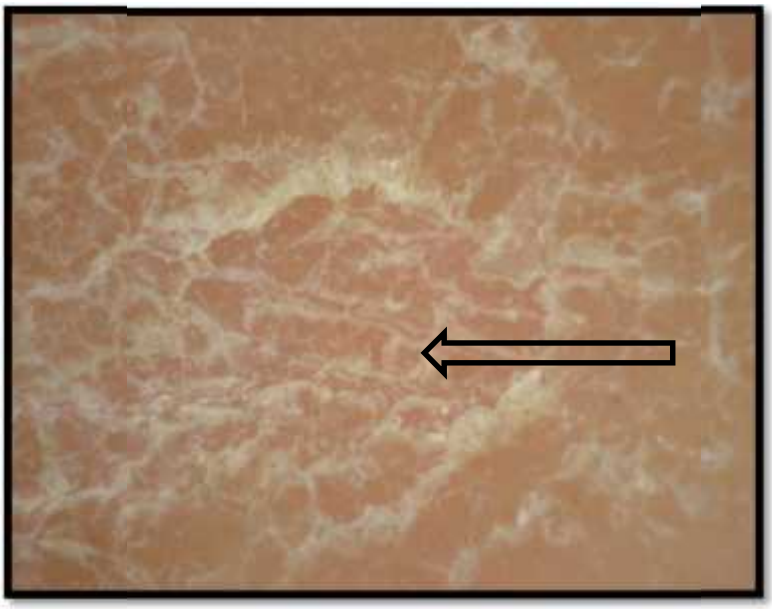


Figure 1b

Figure 1a and 1b – Clinical and dermoscopic (50x) images showing white scales

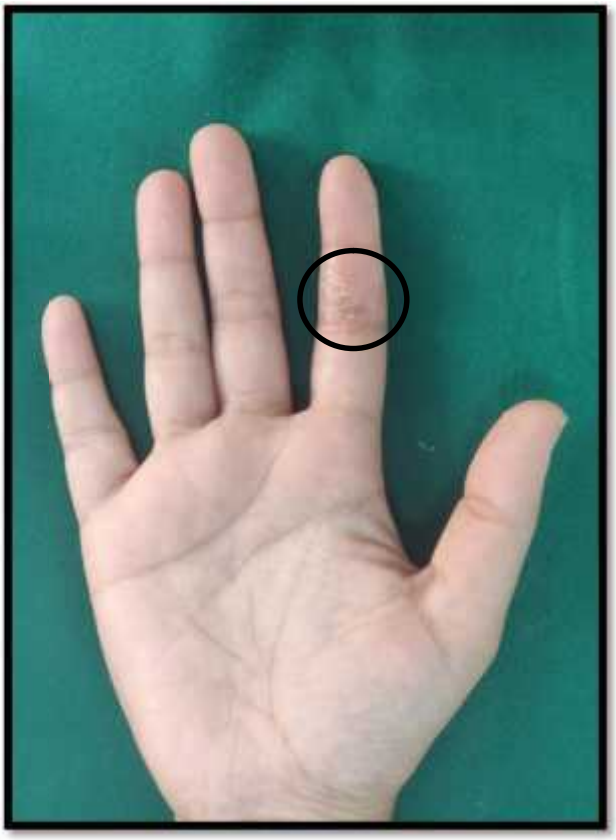


Figure 2a

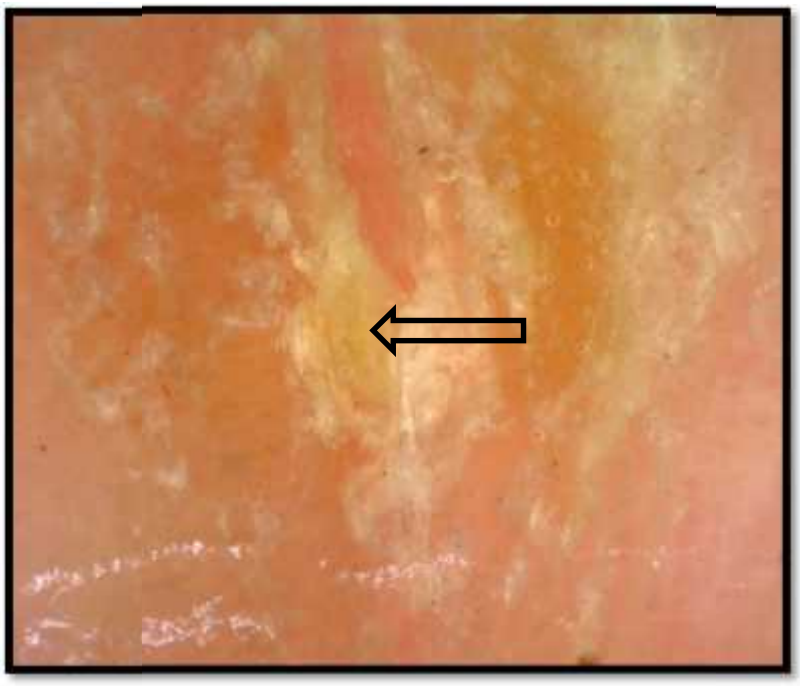


Figure 2b

Figure 2a and 2b – Clinical and dermoscopic (50x) images showing yellow scales

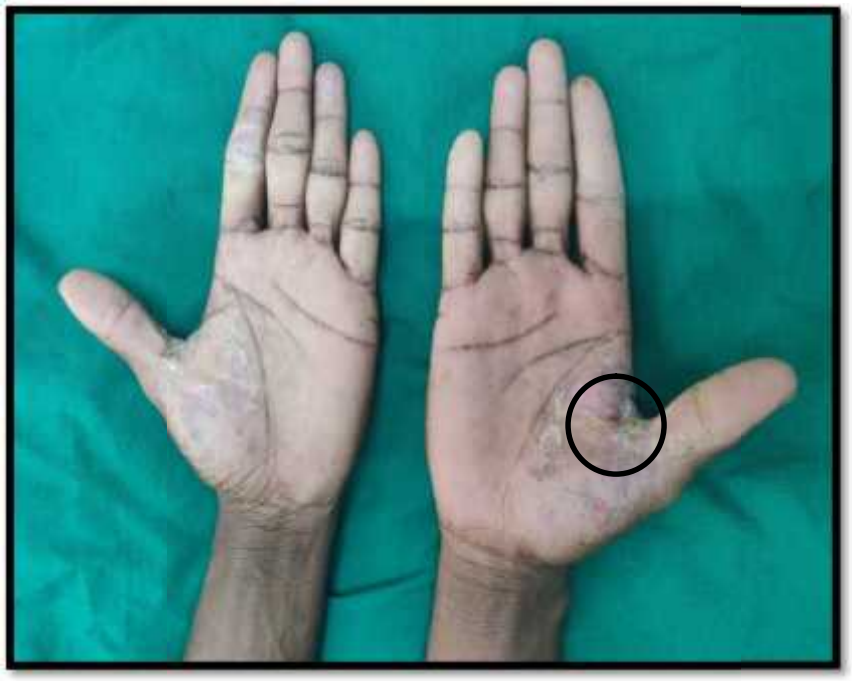


Figure 3a

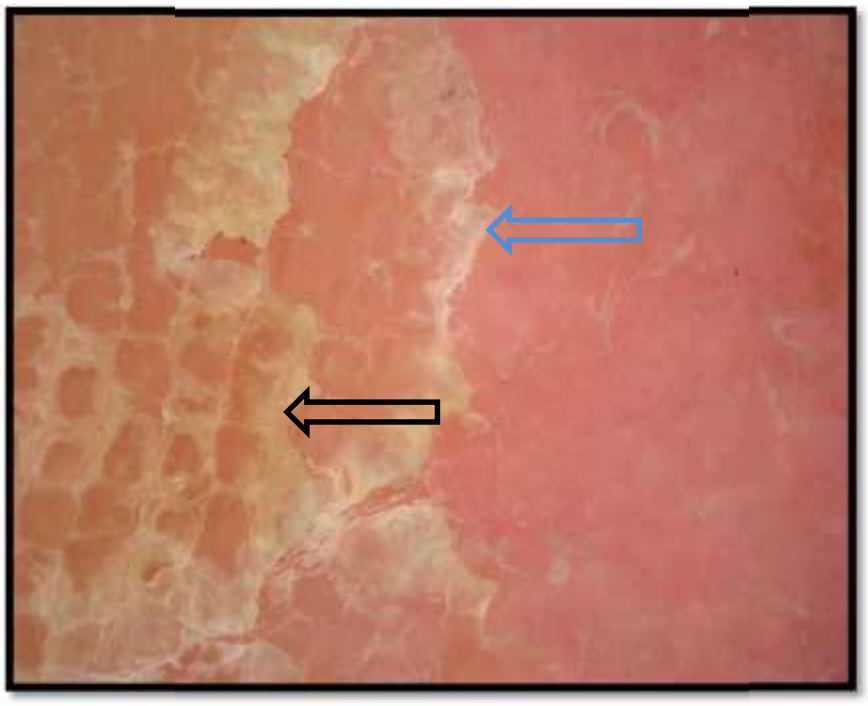


Figure 3a

Figure 3a and 3b – Clinical and dermoscopic (50x) images showing white scales (blue arrow) and yellow scales (black arrow)

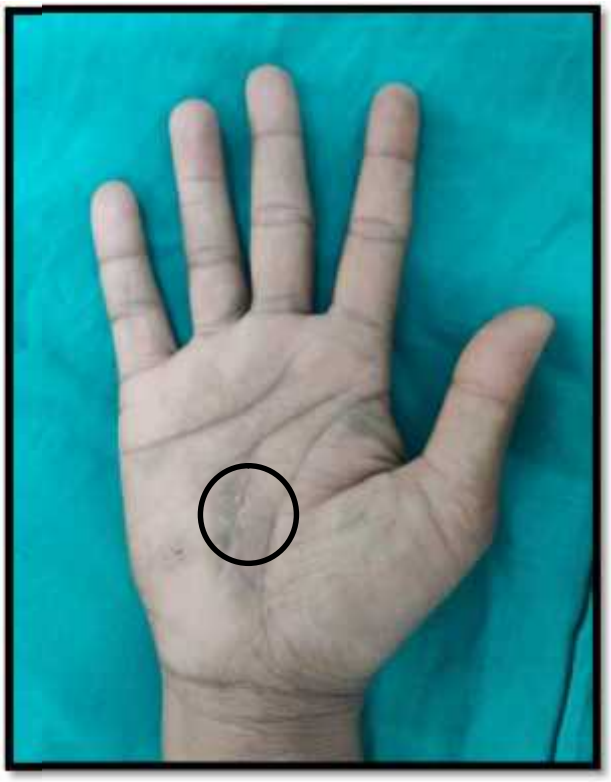


Figure 4a

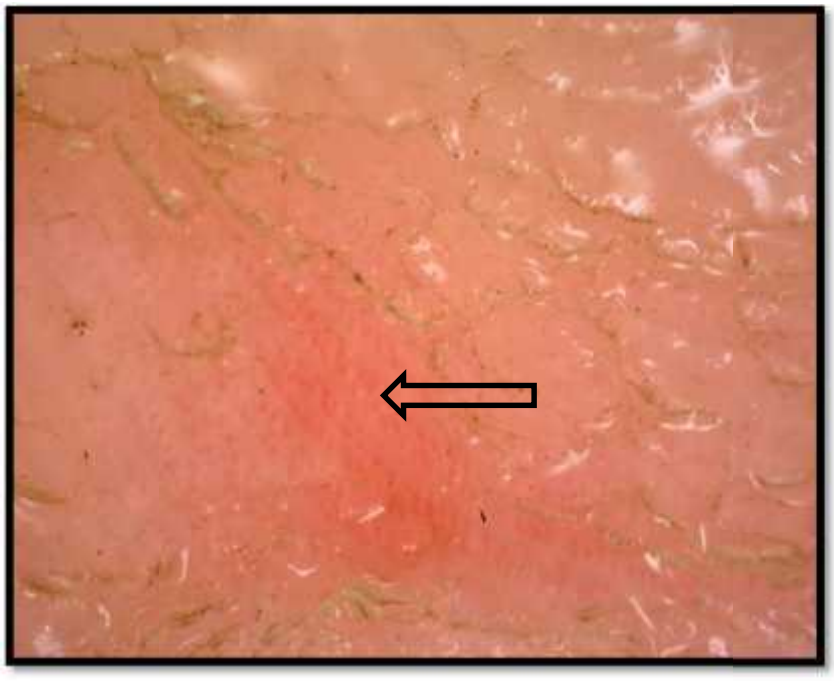


Figure 4b

Figure 4a and 4b – Clinical and dermoscopic (50x) images showing dotted type of vessels in a patchy vascular distribution

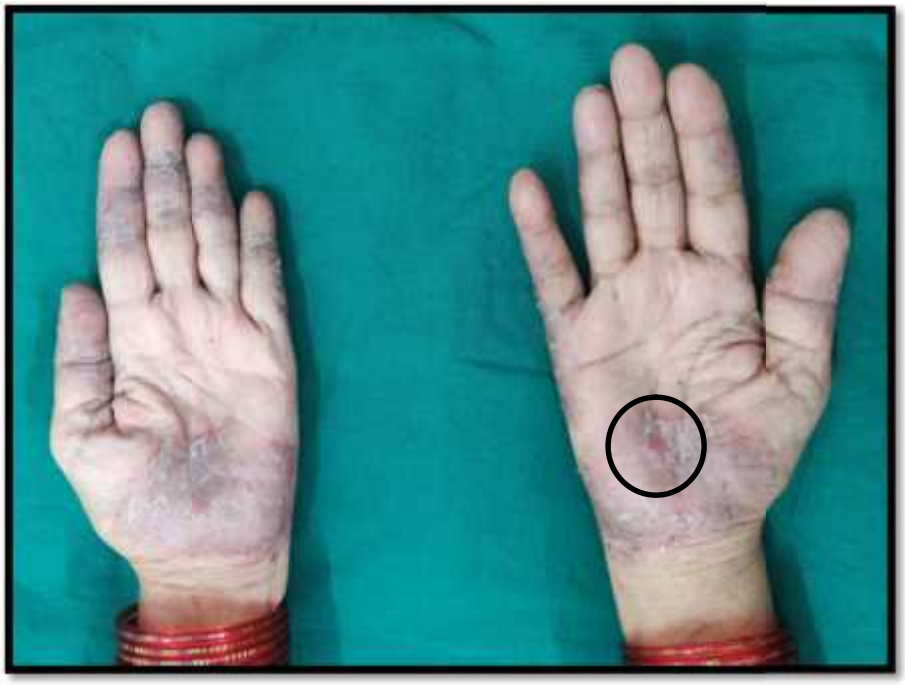


Figure 5a

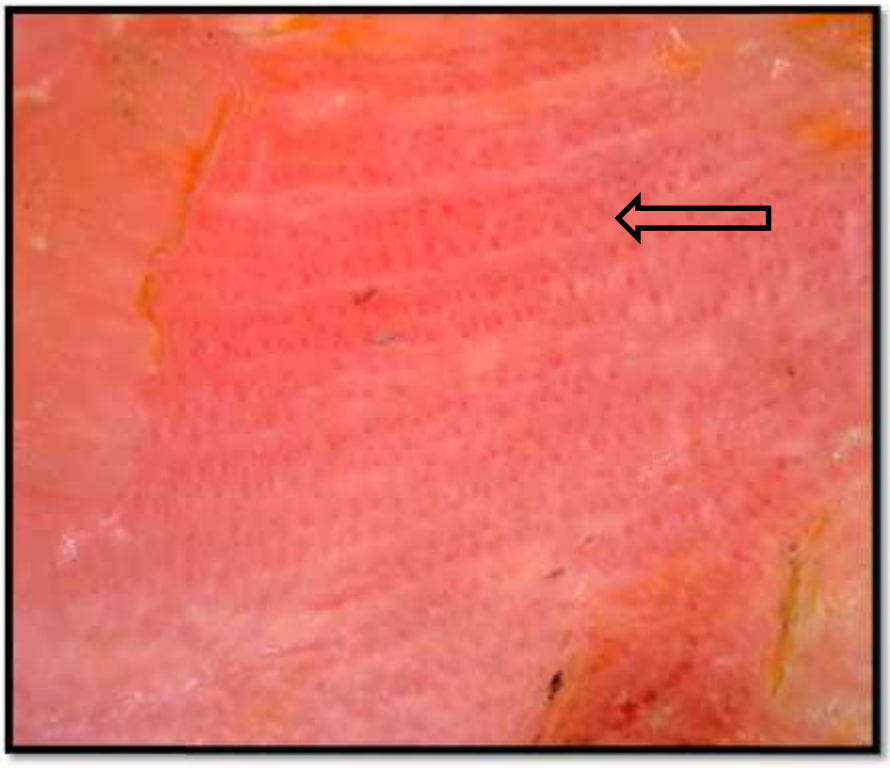


Figure 5b

Figure 5a and 5b – Clinical and dermoscopic (50x) images showing diffuse regularly distributed dotted type of vessels

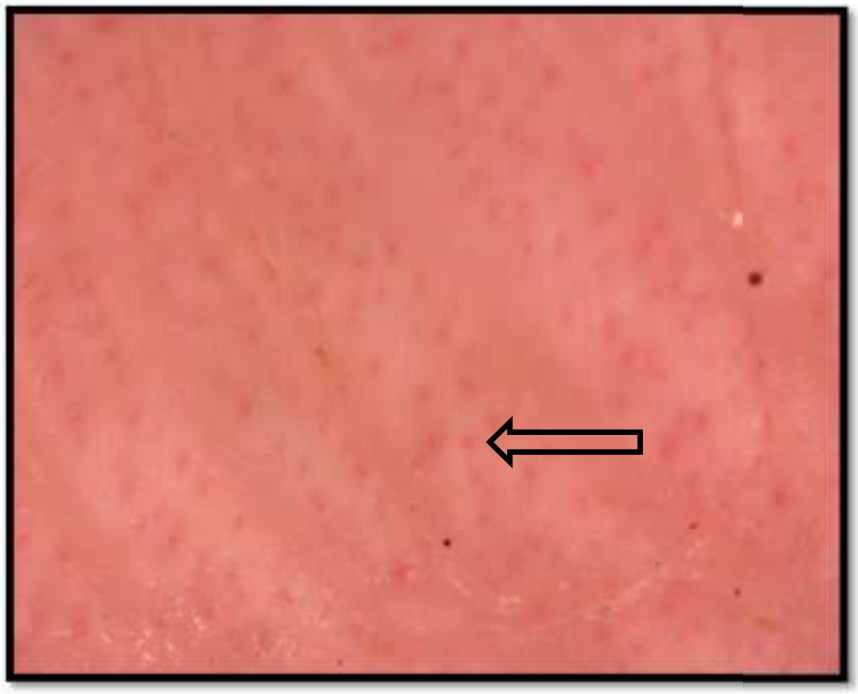


Figure 6a

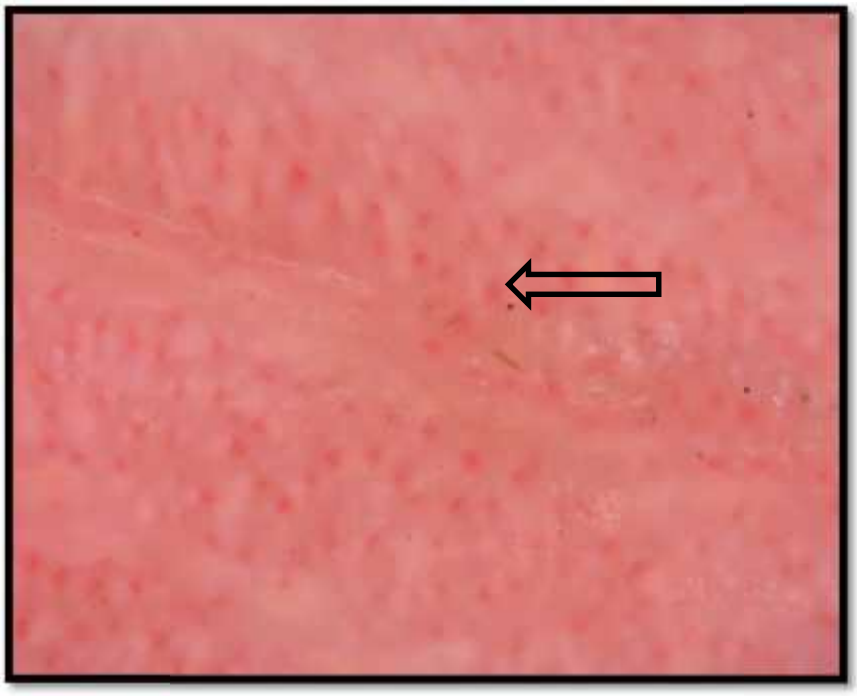


Figure 6b

Figure 6a and 6b – Dermoscopic (200x) images showing diffuse regularly distributed dotted type of vessels

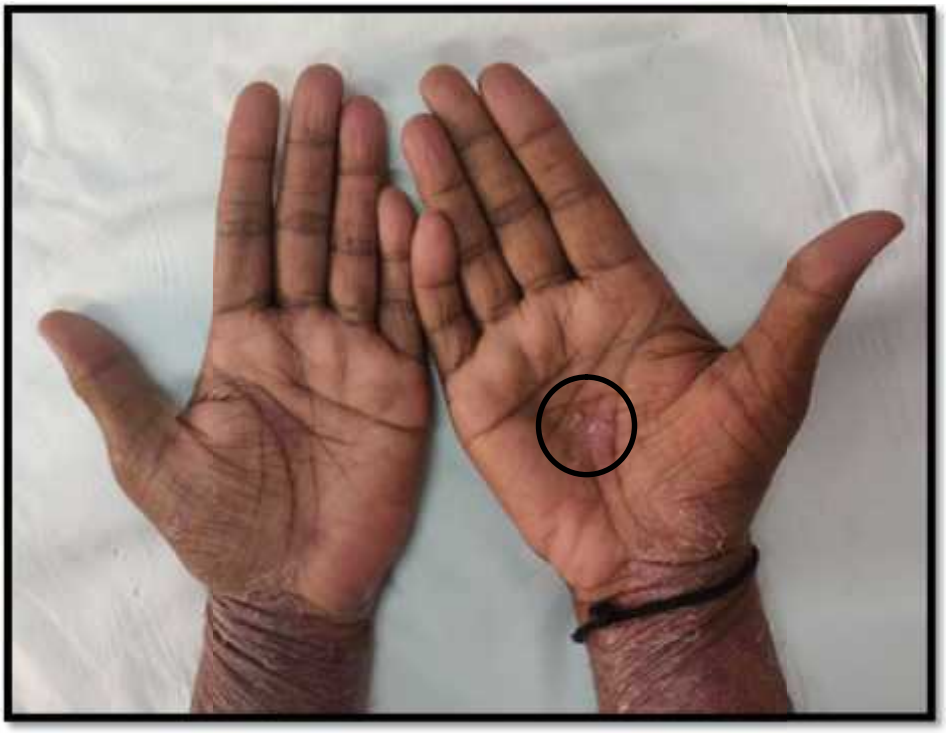


Figure 7a

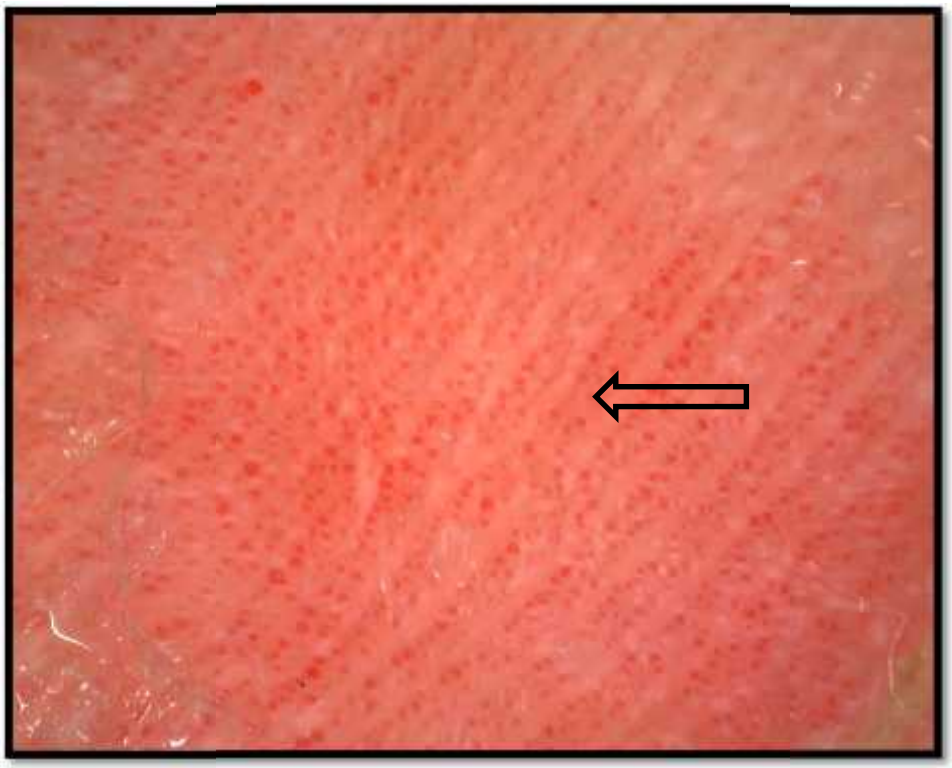


Figure 7b

Figure 7a and 7b – Clinical and dermoscopic (50x) images showing diffuse regularly distributed glomeruloid type of vessels

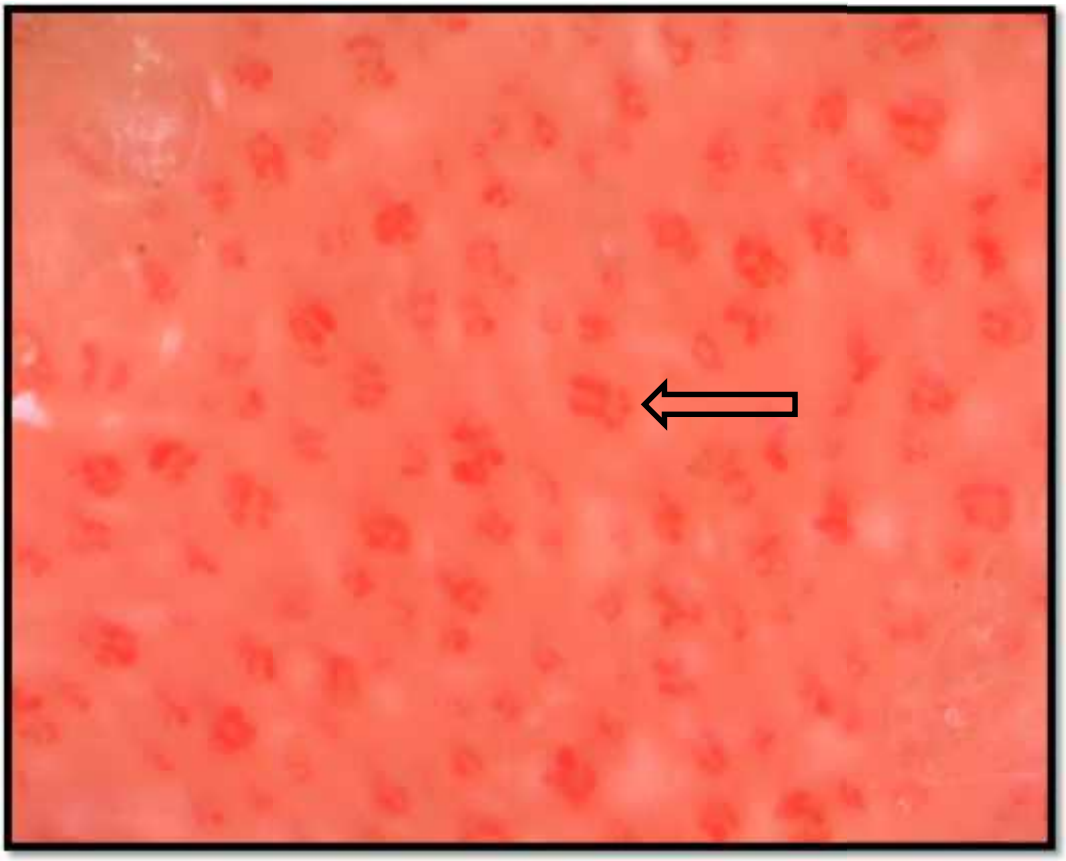


Figure 8 - Dermoscopic (200x) image showing diffuse regularly distributed glomeruloid type of vessels

Figure 9a

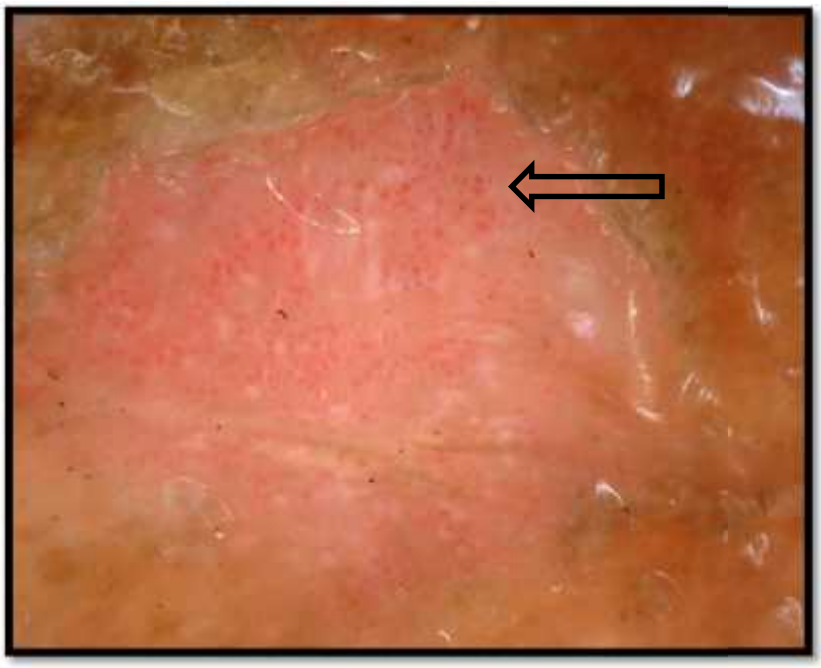


Figure 9b

Figure 9a and 9b – Clinical and dermoscopic (50x) images showing glomeruloid type of vessels in a patchy vascular distribution

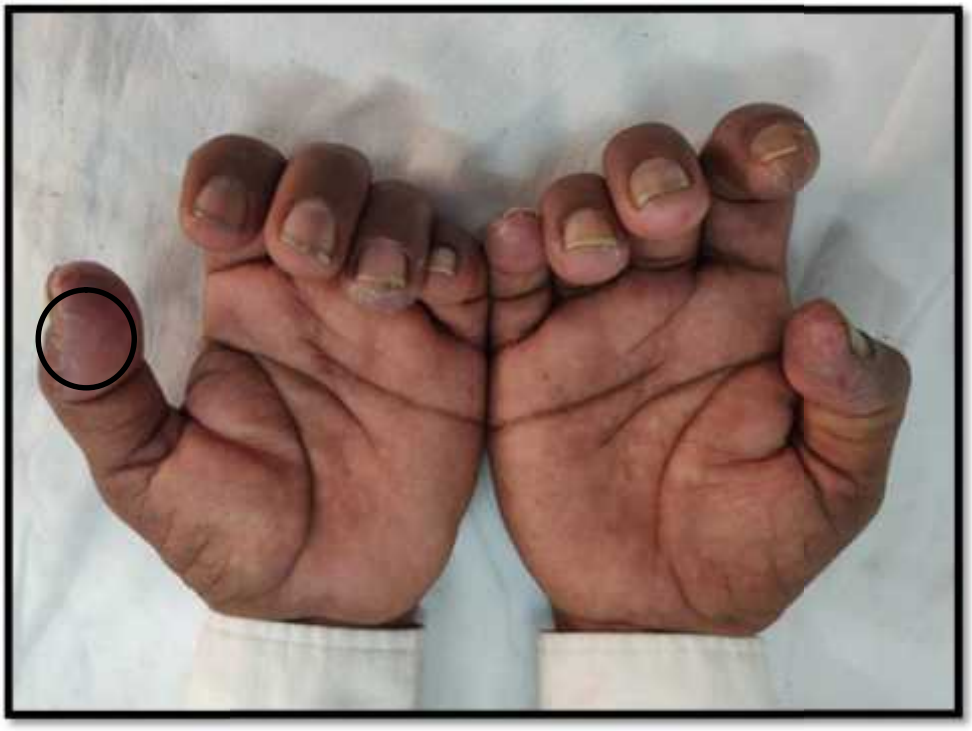


Figure 10a

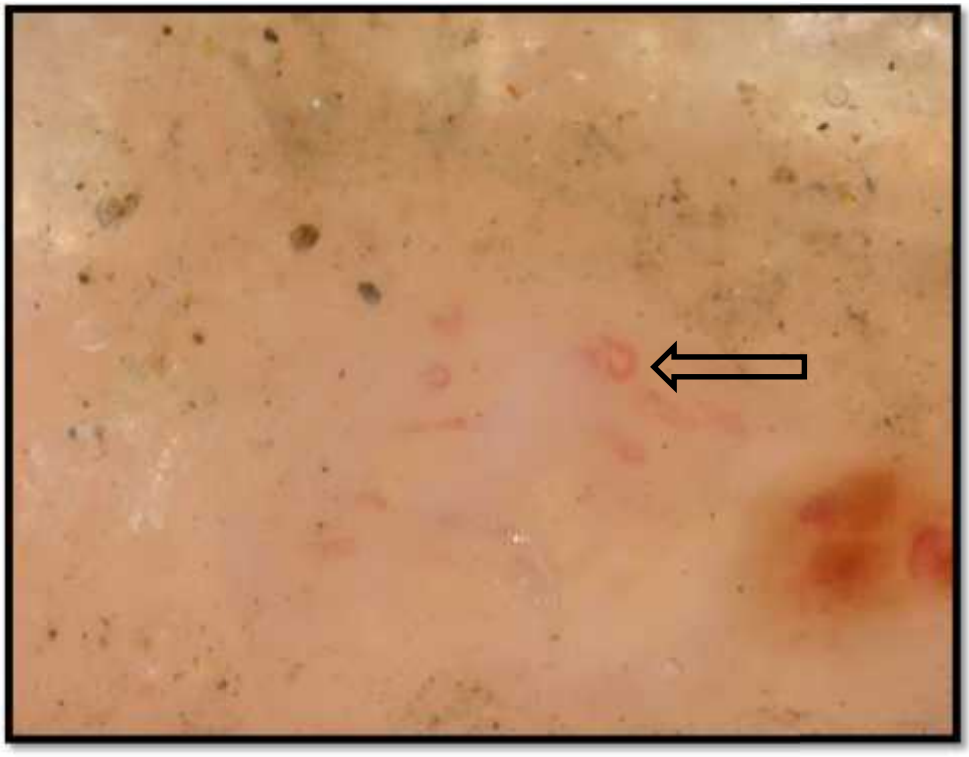


Figure 10b

Figure 10a and 10b – Clinical and dermoscopic (50x) images showing loop type of blood vessels

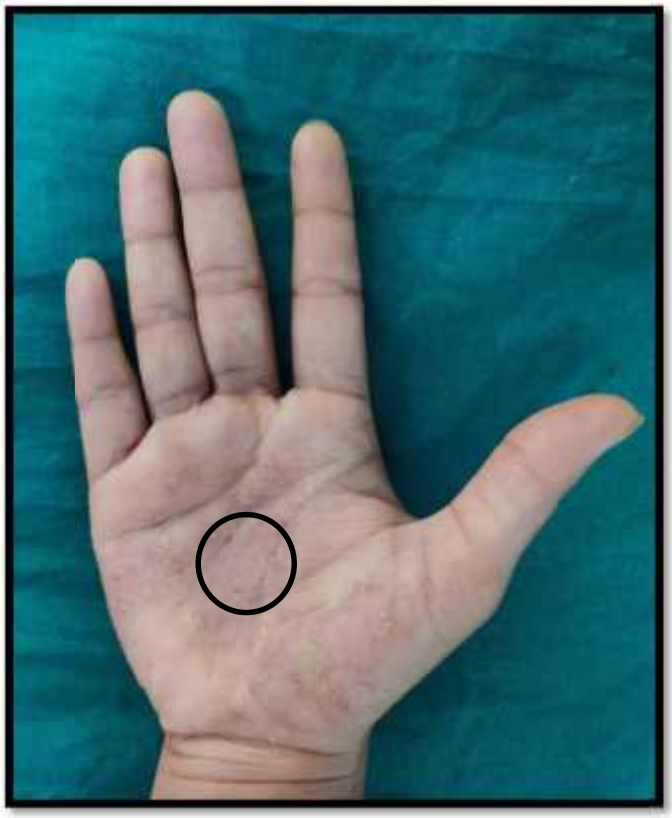


Figure 11a

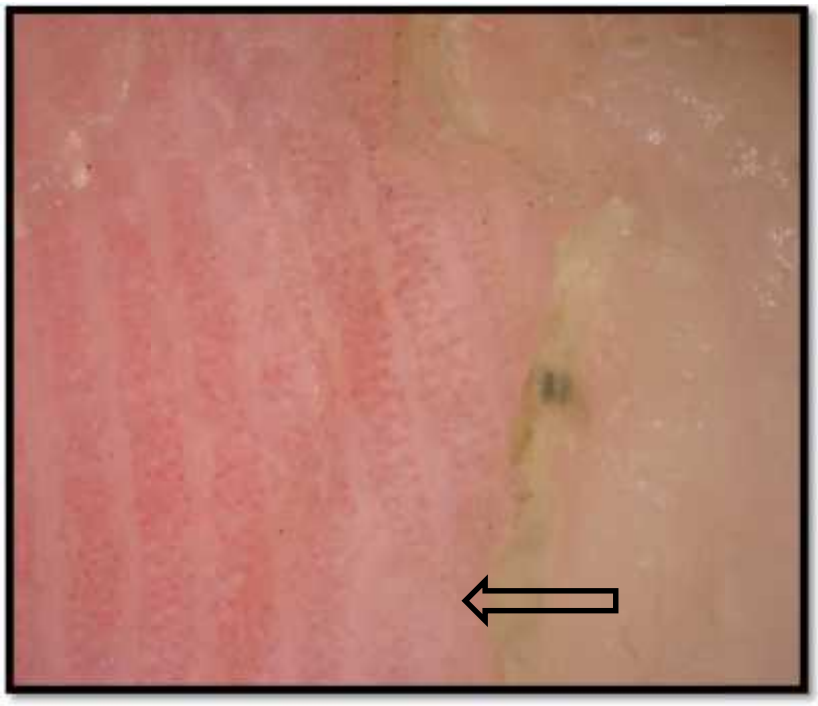


Figure 11b

Figure 11a and 11b – Clinical and dermoscopic (50x) images showing light red background erythema

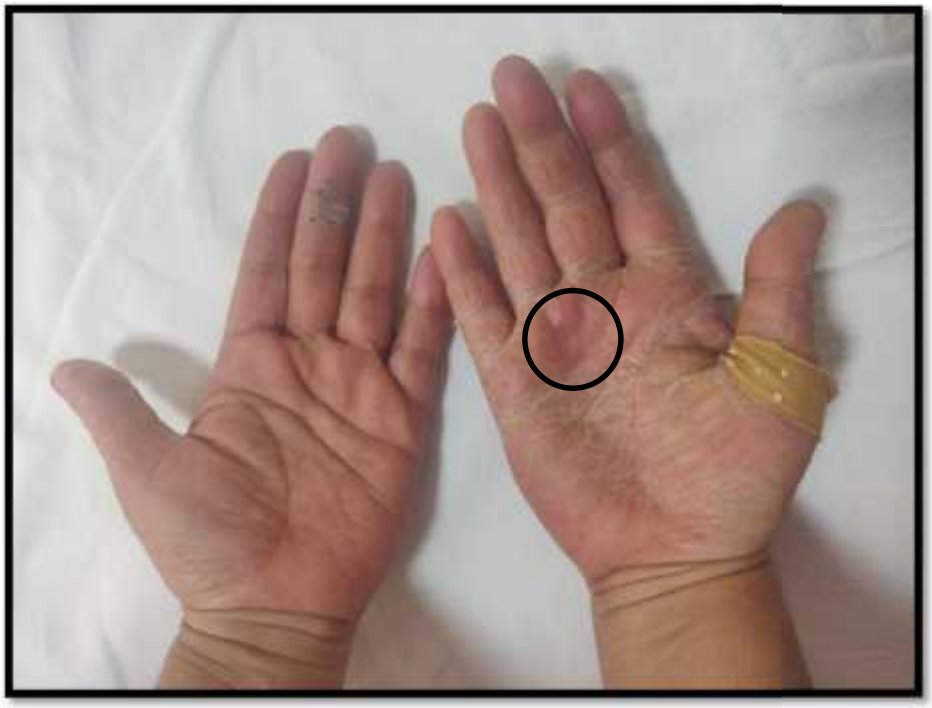


Figure 12a

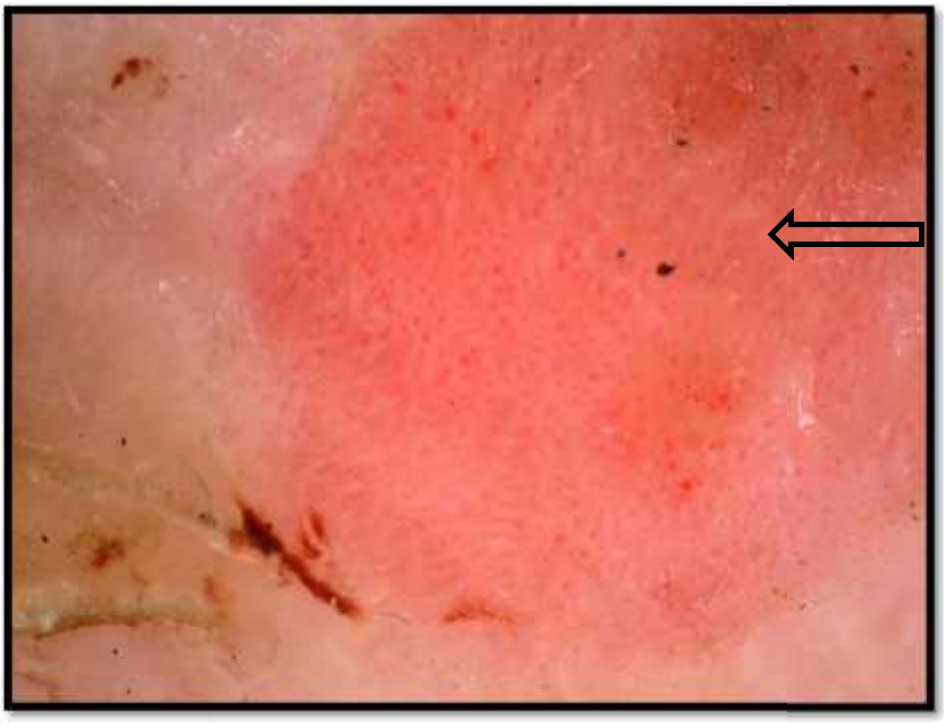


Figure 12b

Figure 12a and 12b – Clinical and dermoscopic (50x) images showing bright red background erythema

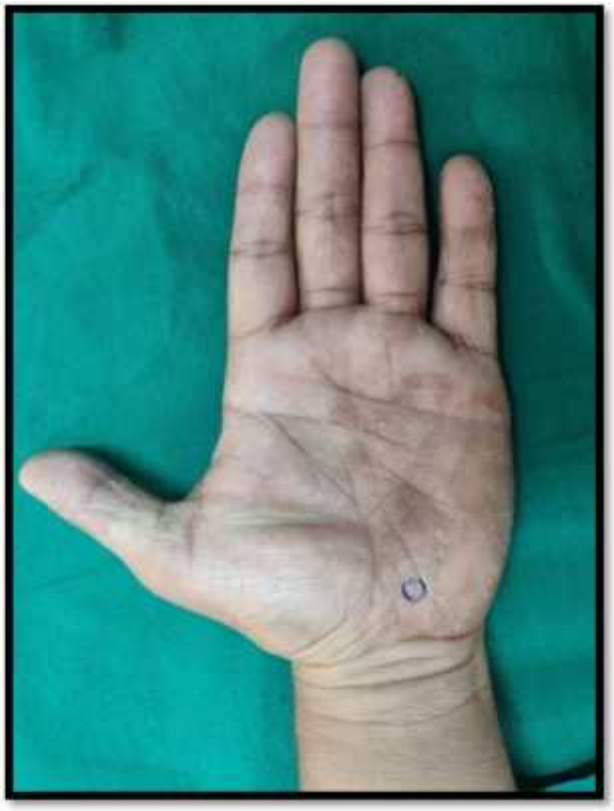


Figure 13a

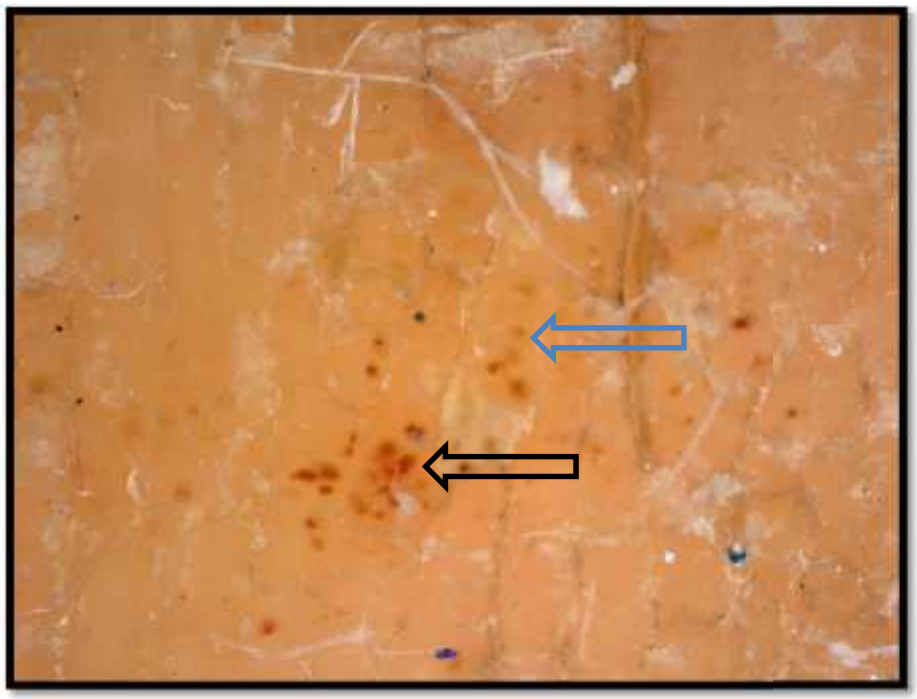


Figure 13b

Figure 13a and 13b – Clinical and dermoscopic (50x) images showing brownish-orange globules (black arrow) and yellow-orange globules (blue arrow)

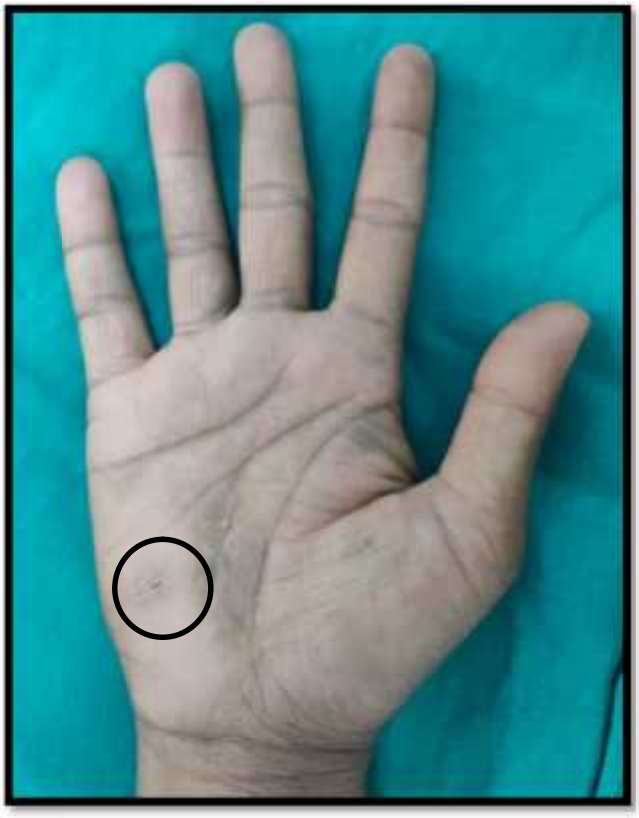


Figure 14a

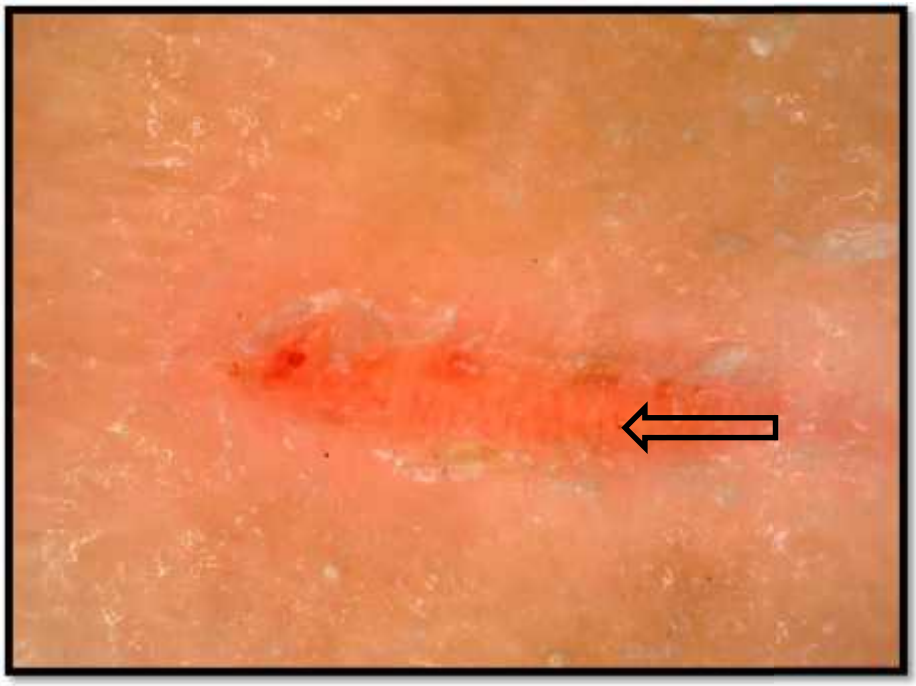


Figure 14b

Figure 14a and 14b – Clinical and dermoscopic (50x) images showing loops in fissures

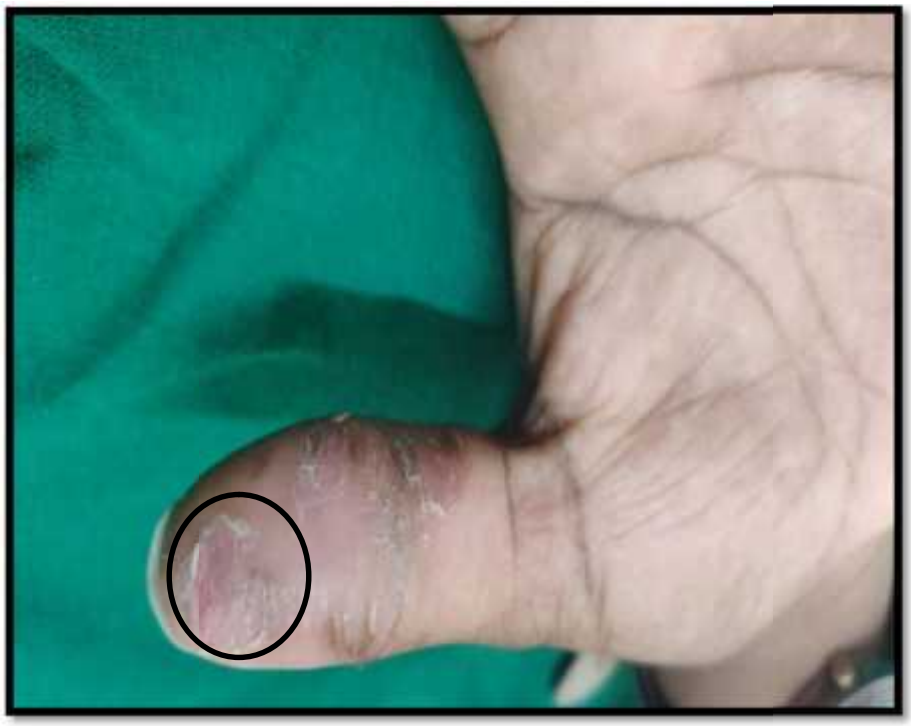


Figure 15a

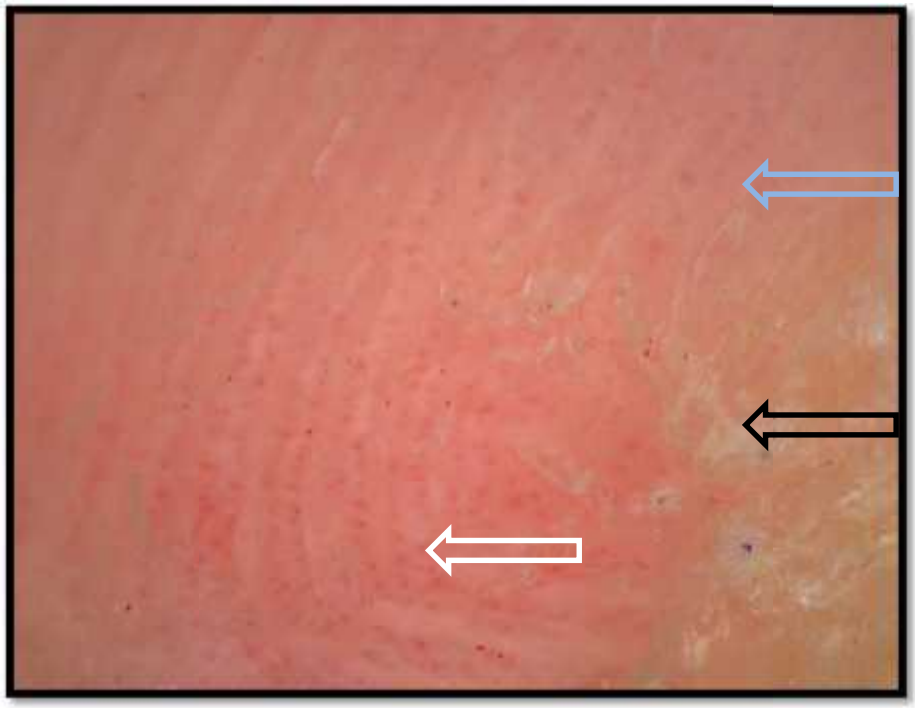


Figure 15b

Figure 15a and 15b – Clinical and dermoscopic (50x) images of palmar psoriasis showing white scales (black arrow) , diffuse regularly distributed dotted type of vessels (white arrow) , light red background erythema (blue arrow)

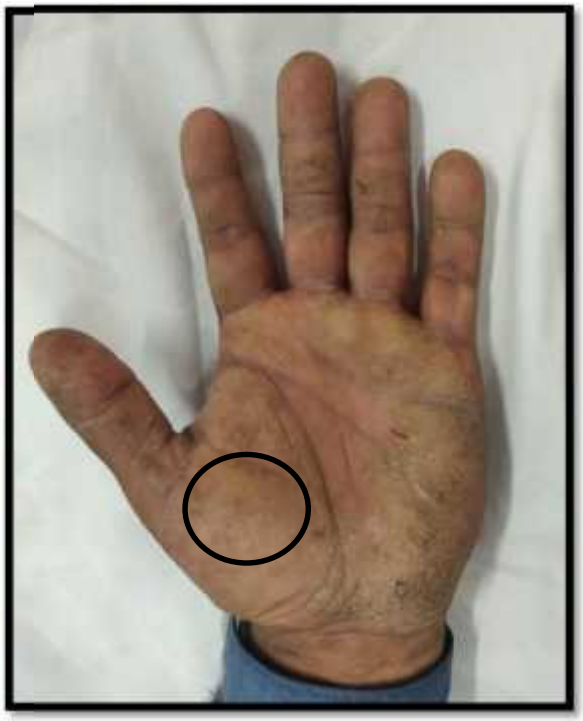


Figure 16a

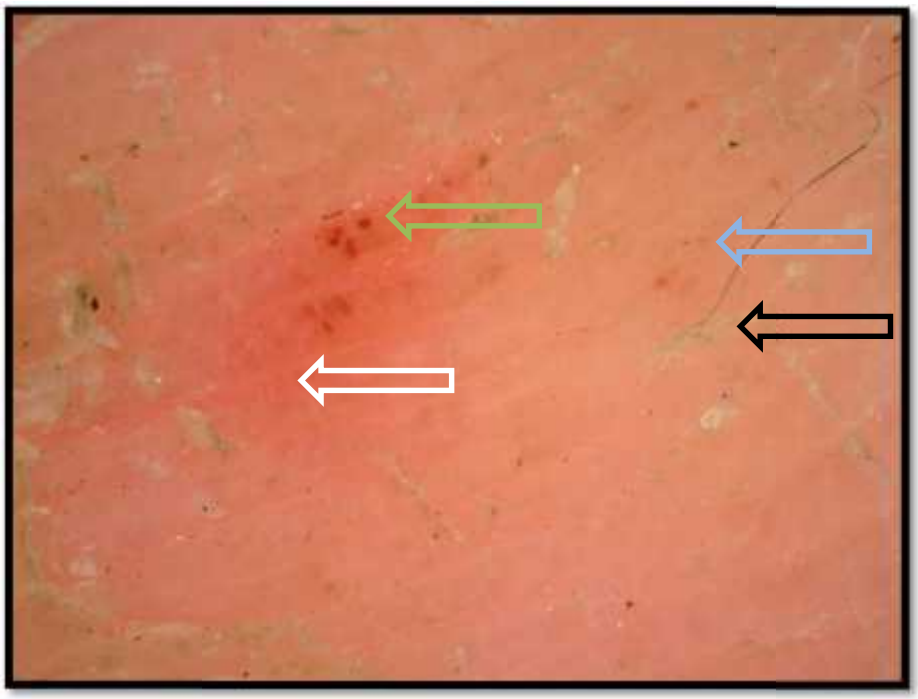


Figure 16b

Figure 16a and 16b – Clinical and dermoscopic (50x) images of hand eczema showing yellow scales (black arrow) , dotted type of vessels in patchy distribution (white arrow) , brownish-orange globules (green arrow) , yellow-orange clods (blue arrow)

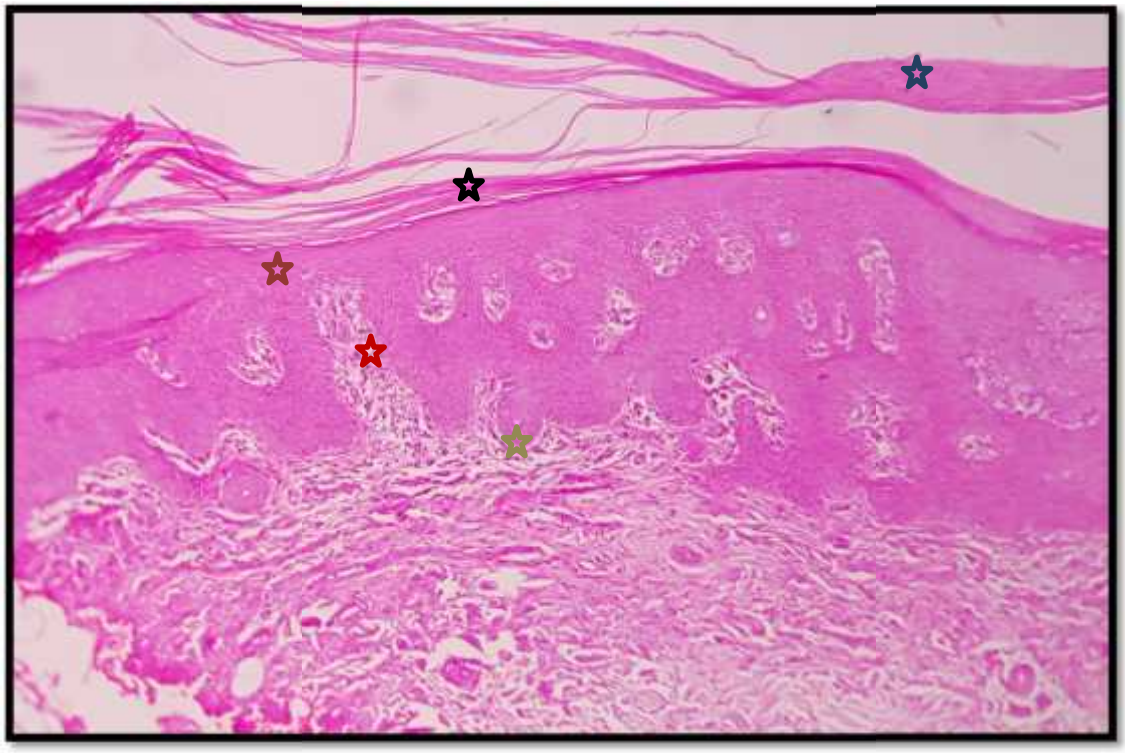


Figure 17: Histopathology of palmar psoriasis showing :

Parakeratosis

Orthokeratosis

Hypogranulosis

Suprapapillary thinning with dilated capillaries

Regular psoriasiform hyperplasia

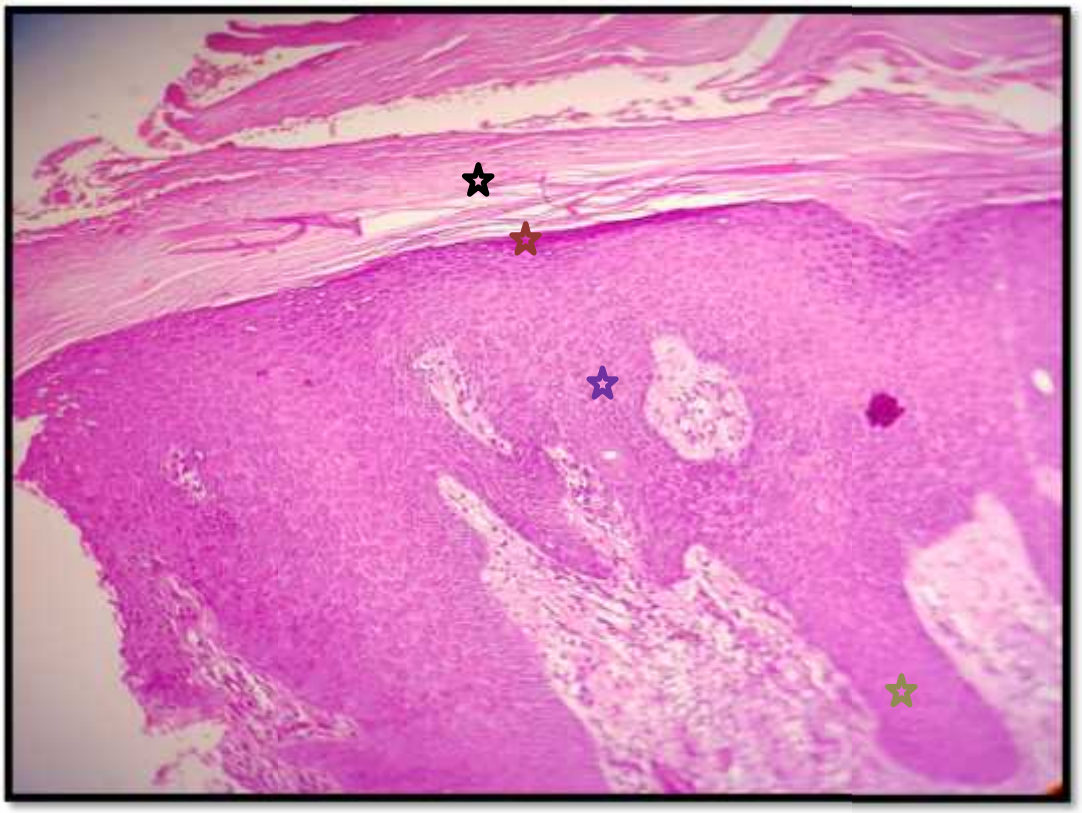


Figure 18- Histopathology of hand eczema showing :

- **Compact hyperkeratosis**
- **Preserved granular layer**
- **Mild spongiosis with irregular acanthosis**
- **Irregular psoriasiform hyperplasia**

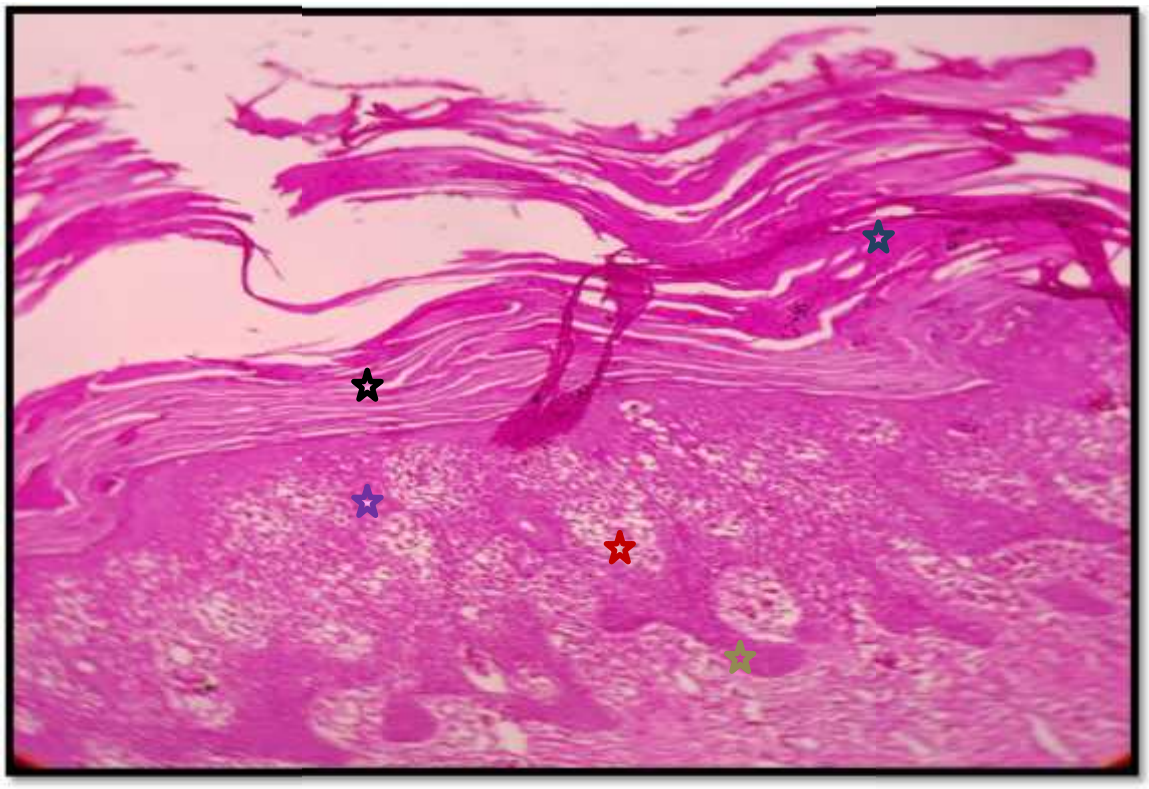


Figure 19- Histopathology of eczema in psoriaticoshowing :

Parakeratosis

Compact orthohyperkeratosis

Moderate to severe spongiosis

Dilated capillaries

Regular psoriasiform hyperplasia

										Dermoscopy							HPE																		
										Scales		Vessels		Back ground				EPIDERMIS												DERMIS					
Serial No	Age-Years	Sex	Duration	Site	Winter Excerbation	Contact Allergens	Joint Invol	Nail Invol	Clinical Diagnosis	Distribution	Color	Type	Array	Erythema	Others	Dermoscopy Diagnosis	Site	HK	PK	S	A	F	P	GL	PH	Cells in sc	SPT	MF	Others	DC	PVI	DI	HPE DIAGNOSIS	Final Diagnosis	Correlation
1	35	M	1 Year	B/l palms	+	-	-	P,O	PP-Pso	Diffuse	W,Y	D	R	Bright red	-	Pso	Palm	+	-	1+	Regular	-	1+	3	Regular	N	-	2	RBC+ in sc	+	L/N +	-	Pso	Pso	P-P-P
2	60	M	6 months	B/l palms, legs	-	Pesticides	-	-	Eczema	Diffuse	W,Y	D	P	Y + Dull red	Yellow-orange clods	Eczema	Palm	+	+	3+	-	3+	3+	2	-	-	-	-	-	-	L +	-	Eczema	Eczema	E-E-E
3	21	F	6 months	left thumb,index	+	Gloves	-	-	Eczema	Diffuse	W	D	R	Light red	-	Pso	left thumb	+	+	1+	Regular	1+	1+	-	Regular	N/E	+	2	-	+	L/N +	-	Pso	Pso	E-P-P
4	60	M	1 month	left palm,trunk,legs	+	-	-	P	Pustular Pso	Diffuse	W	D	R	Light red	Yellow clods	Pso	Palm	+	-	1+	Regular	-	-	2	-	E	-	-	Spongiotic vesicle in sc	-	L/E +	-	Pso	Pso	P-P-P
5	22	M	1 Year	B/l palms,soles,elbow	+	-	-	P	Chronic plaque Pso	Diffuse	W	G	R	Light red	-	Pso	Palm	+	-	1+	Regular	-	-	1	Regular	-	+	-	-	+	L/N +	-	Pso	Pso	P-P-P
6	40	M	2 Years	B/l palms	-	Pesticides	-	-	Eczema	Focal	W,Y	D	P	Y + Dull red	Brownish-orange dots	Eczema	Palm	+	+	1+	Irregular	1+	1+	4	Irregular	E	-	3	-	-	L/E +	-	Eczema	Eczema	E-E-E
7	60	M	2 Years	B/l palms,soles	+	-	DIP +	P,SUH	PP-Pso	Diffuse	W	D	R	Light red	-	Pso	Palm	-	+	2+	Regular	3+	-	-	Regular	N	+	6	-	+	L/N +	L	Pso	Pso	P-P-P
8	51	M	6 months	B/l palms,soles	+	Pesticides	B/l Knee	P	PP-Pso	Focal	Y	D	U	Y + Dull red	Brownish-orange dots	Eczema	Palm	+	+	2+	Irregular	-	1+	1	Irregular	E	-	1	-	-	L +	-	Eczema	Eczema	P-E-E
9	48	M	2 Years	B/l palms	-	Cement	-	-	Eczema	Focal	W,Y	D	P	Y + Dull red	-	Eczema	Palm	+	-	1+	Irregular	-	2+	3	-	-	-	-	Bacterial colonies in sc	-	-	-	Eczema	Eczema	E-E-E
10	56	M	1 Year	B/l palms,soles	+	-	-	P,SUH	PP-Pso	Focal	W,Y	U	U	Dull red	-	Pso	Palm	+	+	3+	Regular	1+	2+	-	Regular	N/E	+	2	-	+	N/E+	-	Pso	Pso	P-P-P
11	60	M	1 month	B/l palms, legs	+	Cement	-	SUH	Eczema	Diffuse	W,Y	D	P	Y + Dull red	-	Eczema	Palm	+	+	1+	Irregular	-	-	3	-	-	-	-	RBC in sc	-	L +	-	Eczema	Eczema	E-E-E
12	26	F	3 Years	Right thumb	-	Detergents	-	O	Eczema	Diffuse	W	D	U	Light red	-	Pso	Right thumb	+	+	1+	Regular	-	-	3	Regular	N	+	4	-	+	L/N +	-	Pso	Pso	E-P-P
13	38	M	2 Years	B/l palms,soles	+	-	B/l Knee	-	PP-Pso	Diffuse	W	D	R	Light red	-	Pso	Palm	-	+	1+	Regular	1+	1+	2	-	N	+	4	-	+	L/N +	-	Pso	Pso	P-P-P
14	54	F	3 months	B/l palms	-	Detergents	-	O,SUH	Eczema	Diffuse	W,Y	D	U	Y+ Light red	-	Eczema	Palm	+	+	1+	Regular	1+	-	2/-	Regular	N	+	5	Necrotic keratinocytes	+	L/N +	-	Pso	Pso	E-E-P
15	60	F	1 Year	B/l palms,soles	+	-	-	P,SUH,O	PP-Pso	Focal	W	D	R	Light red	-	Pso	Palm	+	+	1+	-	-	-	3	-	-	-	1	Necrotic keratinocytes,RBC	+	N+	-	Pso	Pso	P-P-P
16	60	M	1 month	BSA > 90%	+	-	-	P,O,SH	Erythroderma-Pso	Diffuse	W	G	R	Bright red	-	Pso	Palm	+	+	1+	Regular	1+	1+	2	Regular	+	+	1	RBC in sc	+	L/N +	-	Pso	Pso	P-P-P
17	60	F	3 months	B/l palms,soles,elbow	+	-	-	O	Chronic plaque Pso	Diffuse	W	D	R	Light red	-	Pso	Palm	+	+	1+	Irregular	-	-	2	Regular	+	+	5	-	+	L/N +	-	Pso	Pso	P-P-P
18	45	F	3 Years	B/l palms,soles	+	-	-	-	PP-Pso	Focal	W,Y	D	P	Light red	-	Pso	Palm	-	+	1+	Regular	1+	-	3	-	N	+	4	-	+	L/N +	-	Pso	Pso	P-P-P
19	60	M	6 Years	BSA > 90%	+	-	DIP +	P,SUH,O,SH	Erythroderma-Pso	Diffuse	W,Y	U	U	Dull red	Loops around fissures	Pso	Palm	+	+	1+	Regular	1+	-	-	Regular	+	-	-	RBC in sc	+	N+	-	Pso	Pso	P-P-P
20	36	M	3 months	B/l palms, legs	+	-	-	P	Chronic plaque Pso	Diffuse	Y	D	U	Y+ Light red	-	Eczema	Palm	+	-	2+	Irregular	-	-	3	-	L/E	-	2	Necrotic keratinocytes	-	L/E +	-	Eczema+Pso	Eczema in psoriatico	P-E-EP
21	47	M	3 Years	B/l palms, legs,trunk	+	-	PIP,R knee	P,SUH,O	Chronic plaque Pso	Focal	W	D	R	Light red	-	Pso	Palm	+	-	1+	Regular	-	1+	3	Regular	N	+	1	RBC in sc	+	L/N +	-	Pso	Pso	P-P-P
22	27	F	6 months	B/l palms,soles	-	Detergents	-	-	Eczema	Focal	W	D	P	Dull red	-	Eczema	Palm	+	+	2+	Regular	-	-	4	Regular	-	-	1	-	-	L/N/E +	-	Eczema	Eczema	E-E-E
23	50	M	6 months	B/l palms,soles	+	-	-	-	PP-Pso	Diffuse	W	D	R	Light red	-	Pso	Palm	+	+	2+	Regular	2+	-	1	Regular	N	+	6	Necrotic keratinocytes	+	L/N +	-	Pso	Pso	P-P-P
24	60	F	1 month	B/l palms,soles	+	-	-	-	PP-Pso	Diffuse	W,Y	D	U	Y+ Light red	-	Pso	Palm	+	-	2+	Regular	2+	-	1	Regular	N	+	4	-	+	N+	L	Pso	Pso	P-P-P
25	60	M	1 Year	B/l palms,soles	+	-	PIP,R knee	P,SUH	PP-Pso	Diffuse	W	D	R	Light red	-	Pso	Palm	+	-	2+	Regular	-	1+	1	Regular	-	+	-	Necrotic keratinocytes	+	L/N/E +	-	Eczema+Pso	Eczema in psoriatico	P-E-EP
26	52	M	4 months	B/l palms	-	Pesticides	-	-	Eczema	Focal	W,Y	L	P	Y + Dull red	Brownish-orange dots	Eczema	Right thumb	-	-	-	-	-	-	-	-	-	-	-	-	-	L/E +	E	Eczema	Eczema	E-E-E
27	42	M	6 months	B/l palms	-	industrial oil	-	-	Eczema	Focal	W,Y	U	U	Y + Dull red	Brownish-orange dots	Eczema	Palm	+	+	1+	Regular	1+	-	3	-	N	+	3	Necrotic keratinocytes	+	L/N/E +	-	Eczema+Pso	Eczema in psoriatico	E-E-EP
28	36	F	2 Years	B/l palms,soles	+	-	-	-	PP-Pso	Diffuse	W	D	R	Light red	-	Pso	Palm	+	-	1+	Regular	-	-	3	Regular	N	+	2	-	+	L/N +	-	Pso	Pso	P-P-P
29	45	M	1 month	B/l palms, legs,trunk	+	-	-	P,SUH,O	Chronic plaque Pso	Diffuse	W	D	R	Bright red	-	Pso	Palm	+	-	1+	Regular	-	-	1	Regular	N	+	2	-	+	L/N +	-	Pso	Pso	P-P-P
30	60	F	3 Years	B/l palms, legs,trunk	+	-	R Knee	P,SUH,O	Chronic plaque Pso	Focal	W	G	R	Light red	-	Pso	Palm	+	+	1+	Regular	-	-	2	Regular	N	+	2	-	+	L/N +	-	Pso	Pso	P-P-P
31	45	F	4 months	B/l palms	+	-	-	-	PP-Pso	Diffuse	W	D	R	Light red	-	Pso	Palm	+	+	1+	Regular	1+	1+	1	Regular	N	+	-	-	+	L/N +	-	Pso	Pso	P-P-P
32	42	M	6 months	B/l palms	-	Pesticides	-	P,SUH,O	Eczema	Focal	W,Y	D	R	Bright red	-	Pso	Palm	+	-	1+	Regular	-	-	3	Regular	-	-	-	-	+	L/N/E +	E	Eczema+Pso	Eczema in psoriatico	E-P-EP
33	60	M	3 Years	B/l palms, legs,trunk	+	-	-	P,SUH	Chronic plaque Pso	Focal	W	D	R	Light red	-	Pso	Palm	+	+	2+	Regular	1+	2+	-	-	L/N/E	+	-	Necrotic keratinocytes	+	L/N +	L	Pso	Pso	P-P-P
34	45	M	3 Years	BSA > 90%	+	-	-	P,O	Erythroderma-Pso	Diffuse	W	G	R	Bright red	-	Pso	Palm	+	+	1+	Regular	-	1+	-	-	N	+	-	RBC in sc	+	L/N +	-	Pso	Pso	P-P-P
35	35	F	1 month	BSA > 90%	+	-	-	P,SUH	Erythroderma-Pso	Diffuse	W	G	R	Light red	-	Pso	Palm	+	+	1+	Regular	1+	-	1	-	-	-	5	RBC in sc	+	L/N +	-	Pso	Pso	P-P-P
36	20	F	5 Years	B/l palms, legs,trunk	+	-	-	-	Chronic plaque Pso	Diffuse	W	G	R	Bright red	-	Pso	Palm	+	-	1+	Regular	2+	-	-	Regular	N	+	1	Necrotic keratinocytes	+	L/N +	-	Pso	Pso	P-P-P
37	32	M	2 Years	B/l palms	-	-	-	P	PP-Pso	Diffuse	W,Y	D	R	Y+ Bright red	-	Pso	Palm	+	+	1+	Regular	-	-	1	Regular	-	+	-	-	+	L/N +	-	Pso	Pso	P-P-P
38	52	M	1 Year	Right palm, B/l soles	-	Varnish oil	-	SUH	Eczema	Focal	W,Y	D	R	Light red	Loops around fissures	Pso	Palm	+	+	2+	Regular	2+	1+	-	Regular	N	+	2	Necrotic keratinocytes	+	L/N/E +	-	Eczema+Pso	Eczema in psoriatico	E-P-EP
39	60	M	2 Years	B/l palms	-	Chalk powder	-	-	Eczema	Focal	Y	D	U	Y + Dull red	Brownish-orange dots	Eczema	Palm	+	+	2+	Irregular	-	2+	2	Irregular	-	-	-	Necrotic keratinocytes	-	L +	L/E/N	Eczema	Eczema	E-E-E
40	51	F	5 months	B/l palms	+	-	R knee	P,SUH	PP-Pso	Diffuse	W,Y	D	R	Light red	Loops around fissures	Pso	Palm	+	+	1+	Regular	3+	2+	-	Regular	N	+	2	Bacteria, RBC in sc	+	L/N +	L/N	Pso	Pso	P-P-P
41	19	F	1 Year	B/l palms, Elbows	+	Detergents	-	-	Chronic plaque Pso	Focal	W,Y	D	P	Y + Dull red	Brownish-orange dots	Eczema	Right Index	+	+	1+	Irregular	-	-	3	Irregular	N	+	2	Necrotic keratinocytes,RBC	+	L/N/E +	-	Eczema+Pso	Eczema in psoriatico	P-E-EP
42	32	M	10 month	B/l palms,Elbows,legs	+	-	-	P	Chronic plaque Pso	Diffuse	W,Y	D	U	Dull red	Brownish-orange dots	Eczema	Palm	+	+	2+	Regular	1+	-	2/-	Regular	N	+	2	RBC in sc	+	L/N +	-	Pso	Pso	P-E-P
43	36	M	3 months	B/l palms	-	-	-	-	PP-Pso	Diffuse	W,Y	D	C	Y+ Light red	-	Pso	Palm	+	+	2+	Regular	-	1+	2/-	Regular	N	+	2	RBC in sc	+	N+	N	Pso	Pso	P-P-P
44	36	F	1 Year	Left palm	+	Pesticides	-	-	Eczema	Diffuse	Y	U	U	Y	Brownish-orange dots	Eczema	Palm	+	+	1+	Irregular	-	1+	2/-	-	-	-	1	Bacterial colonies, RBC	+	L/N +	E/N	Eczema	Eczema	E-E-E
45	49	M	4 months	B/l palms	-	Pesticides	-	-	Eczema	Focal	W,Y	D	U	Y + Dull red	Yellow-orange clods	Eczema	Palm	+	+	3+	Regular	1+	1+	2	Regular	-	+/-	3	Spongiotic vesicle in sc	+	L/N/E +	-	Eczema+Pso	Eczema in psoriatico	E-E-EP
46	25	F	6 months	B/l palms	-	Detergents	-	-	Eczema	Diffuse	W	D	P	Y + Dull red	-	Eczema	Palm	+	+	2+	Irregular	-	-	4	-	-	-	-	RBC in sc	-	L/N +	L/E	Eczema	Eczema	E-E-E
47	44	M	20 Years	B/l palms,UL,LL,Trunk	+	-	-	P,SUH,O,SH	Chronic plaque Pso	Diffuse	W	D	R	Light red	-	Pso	Palm	+	+	1+	Regular	-	-	-	Regular	N	+	4	-	+	L/N +	-	Pso	Pso	P-P-P
48	20	M	4 Years	B/l palms	+	-	-	SUH	PP-Pso	Diffuse	W	D	R	Light red	Loops around fissures	Pso	Palm	+	+	2+	Regular	2+	-	2	Regular	L/N	+	6	-	+	L/N +	L	Pso	Pso	P-P-P
49	28	M	3 Years	Right palm	+	Pesticides	-	-	PP-Pso	Focal	W,Y	U	U	Light red	Loops around fissures	Eczema	Right Index	+	+	1+	Regular	1+	-	1	Regular	N	+	2	-	+	L/N +	-	Pso	Pso	P-E-P
50	20	F	5 Years	Right palm	+	-	-	-	PP-Pso	Focal	W	D	C	Light red	-	Pso	Palm	+	-	1+	Regular	2+	-	-	Regular	-	+	-	-	+	L/N +	-	Pso	Pso	P-P-P
51	32	F	3 months	B/l palms	-	Detergents	-	-	Eczema	Diffuse	W,Y	D	U	Y	-	Eczema	Palm	+	-	1+	Irregular	-	-	3	-	-	-	1	-	-	L/E +	L	Eczema	Eczema	E-E-E
52	55	M	5 Years	B/l palms,soles	+	-	Sacroillac	P	PP-Pso	Diffuse	W	D	R	Light red	-	Pso	Palm	+	-	1+	Regular	1+	1+	3	Regular	N	+	3	-	+	L/N +	-	Pso	Pso	P-P-P
53	29	M	6 months	Right palm	-	Detergents	-	-	Eczema	Diffuse	W,Y	D	P	Dull red	Loops around fissures	Eczema	Right Index	+	+	1+	Irregular	2+	-	3	-	N	-	2	RBC in sc	-	L/N/E +	L/E	Eczema	Eczema	E-E-E

										Dermoscopy							HPE																		
										Scales		Vessels		Back ground				EPIDERMIS												DERMIS					
Serial No	Age-Years	Sex	Duration	Site	Winter Excerbation	Contact Allergens	Joint Invol	Nail Invol	Clinical Diagnosis	Distribution	Color	Type	Array	Erythema	Others	Dermoscopy Diagnosis	Site	HK	PK	S	A	F	P	GL	PH	Cells in sc	SPT	MF	Others	DC	PVI	DI	HPE DIAGNOSIS	Final Diagnosis	Correlation
55	57	M	6 months	B/l palms,soles	+	-	-	P,O	PP-Pso	Diffuse	W,Y	D	R	Light red	-	Pso	Palm	+	+	1+	Regular	-	-	2	Regular	N	+	5	Necrotic keratinocytes	+	L/N +	-	Pso	Pso	P-P-P
56	60	F	3 Years	B/l palms,soles	+	-	-	O,SUH	PP-Pso	Focal	W,Y	D	U	Y+ Light red	-	Pso	Palm	+	+	1+	Regular	2+	-	3	Regular	N	+	4	-	+	L/E +	-	Pso	Pso	P-P-P
57	24	M	3 months	B/l palms,soles	-	Detergents	-	-	Eczema	Diffuse	Y	U	U	Y	Yellow-orange clods	Eczema	Palm	+	+	3+	Irregular	-	-	3	-	N	-	-	Necrotic keratinocytes	-	N+	-	Eczema	Eczema	E-E-E
58	21	M	1 month	B/l palms,soles	+	+	-	P,SH	PP-Pso	Focal	W	D	R	Light red	-	Pso	Palm	+	+	2+	Regular	-	-	3	-	L/N	-	1	-	-/+	L/N/E +	-	Eczema+Pso	Eczema in psoriatico	P-P-EP
59	51	F	6 months	B/l palms	+	+	-	-	PP-Pso	Diffuse	W,Y	D	R	Light red	-	Pso	Palm	+	+	2+	Regular	2+	-	2	Regular	N	+	5	-	+	L/N +	-	Pso	Pso	P-P-P
60	23	F	1 month	B/l palms,soles	+	-	-	P,O,SH	PP-Pso	Diffuse	W,Y	D	R	Light red	-	Pso	Palm	+	+	1+	Regular	1+	1+	2	Regular	L/N	+	2	-	+	N+	-	Pso	Pso	P-P-P

ANNEXURE-VI

KEY TO MASTER CHART

SEX :

- M – Male
- F – Female

SITES INVOLVED :

- B/l- Bilateral
- BSA- Body surface area

Present: +

Absent: -

JOINT INVOLVEMENT :

- DIP- Distal interphalangeal joint
- PIP- Proximal interphalangeal joint

NAIL INVOLVEMENT :

- P- Pitting
- O- Onycholysis
- SUH- Subungual hyperkeratosis
- SH- Splinter haemorrhages

CLINICAL DIAGNOSIS :

- PP-Pso- Palmoplantar psoriasis
- Pso- Psoriasis

DERMOSCOPY :

SCALES- COLOR :

- W- White
- Y- Yellow

VESSELS- TYPE:

- D- Dotted
- G- Glomeruloid
- L- Loops
- U- Undifferentiated

VESSELS-ARRAY :

- R- Regular
- P- Patchy
- C- Clustered
- U- Undifferentiated

BACKGROUND ERYTHEMA :

- Y- Yellow

BIOPSY ;HPE- Histopathological examination

- + : Present
- - : Absent

EPIDERMIS

HK- HYPERKERATOSIS

PK- PARAKERATOSIS

S- SPONGIOSIS

- 1+ : Mild
- 2+ : Moderate
- 3+ : Severe

A- ACANTHOSIS

F- FIBRIN

P- PLASMA MOULDS

GL- GRANULAR LAYER: cell thickness

PH- PSORIASIFORM HYPERPLASIA

Cells in SC- Cells in stratum corneum

- N- Neutrophils
- E- Eosinophils
- L- Lymphocytes

SPT- SUPRAPAPILLARY THINNING

MF- MITOTIC FIGURES : cell count

DERMIS

DC- DILATED CAPILLARIES

PVI- PERI VASCULAR INFILTRATE

- N- Neutrophils
- E- Eosinophils
- L- Lymphocytes

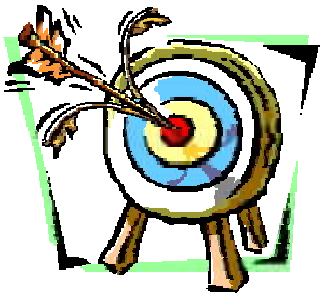
DI- DEEP INFILTRATE

- N- Neutrophils
- E- Eosinophils
- L- Lymphocytes

CORRELATION

- P- Psoriasis
- E- Eczema
- EP- Eczema in psoriatico

Introduction



Objectives

Review of Literature

Methodology

Results

Discussion

Conclusion

Summary

Bibliography

Annexure-I

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Annexure-II

Annexure-III

Annexure-IV

Annexure-V

Annexure-VI