CLINICAL STUDY OF PROFILE OF ADOLESCENT DERMATOSES AND THEIR EFFECT ON QUALITY OF LIFE IN ADOLESCENTS – PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA

Dissertation Submitted to

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IN

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DEPARTMENT OF DERMATOLOGY VENEREOLOGY & LEPROSY

TIRUNELVELI MEDICAL COLLEGE

TIRUNELVELI -11

BONAFIDE CERTIFICATE

This is to certify that this dissertation entitled "**CLINICAL STUDY OF PROFILE OF ADOLESCENT DERMATOSES AND THEIR EFFECT ON QUALITY OF LIFE IN ADOLESCENTS – PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA**" is a bonafide research work done by **Dr.ARAVIND BASKAR.M**, Postgraduate student of Department of Dermatology, Venereology and Leprosy, Tirunelveli Medical College during the academic year 2017 – 2020 for the award of degree of M.D. Dermatology, Venereology and Leprosy – Branch XX. This work has not previously formed the basis for the award of any Degree or Diploma.

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DECLARATION

I solemnly hereby declare that the dissertation entitled **"CLINICAL STUDY OF PROFILE OF ADOLESCENT DERMATOSES AND THEIR EFFECT ON QUALITY OF LIFE IN ADOLESCENTS – PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA"** was done by me at the Department of Dermatology, Venereology & Leprosy, Tirunelveli Medical College under the guidance and supervision of my Professor **Dr.P.Nirmaladevi**. The dissertation is submitted for the Degree of Doctor of Medicine in M.D., Degree Examination, Branch XX in DEPARTMENT OF DERMATOLOGY, VENEREOLOGY AND LEPROSY.

This is my original work and the dissertation has not formed the basis for the award of any degree, diploma, associate ship, fellowship or similar other titles. It had not been submitted to any other university or Institution for the award of any degree or diploma.

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PROTOCOL TITLE: CLINICAL STUDY OF PROFILE OF ADOLESCENT DERMATOSES AND THEIR EFFECT ON QUALITY OF LIFE IN ADOLESCENTS – PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA

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Dear Dr.ARAVIND BASKAR.M, MBBS, The Tirunelveli Medical College Institutional Ethics Committee (TIREC) reviewed and discussed your application during The IEC meeting held on 27.10.2017.

THE FOLLOWING DOCUMENTS WERE REVIEWED AND APPROVED

1.	TIREC Application Form	☐
2.	Study Protocol	☐
3.	Department Research Committee Approval	☐
4.	Patient Information Document and Consent Form in English and Vernacular Language	☐
5.	Investigator's Brochure	☐
6.	Proposed Methods for Patient Accrual Proposed	☐
7.	Curriculum Vitae of The Principal Investigator	☐
8.	Insurance /Compensation Policy	☐
9.	Investigator's Agreement with Sponsor	☐
10.	Investigator's Undertaking	☐
11.	DCGI/DGFT approval	☐
12.	Clinical Trial Agreement (CTA)	☐
13.	Memorandum of Understanding (MOU)/Material Transfer Agreement (MTA)	☐
14.	Clinical Trials Registry-India (CTRI) Registration	☐

THE PROTOCOL IS APPROVED IN ITS PRESENTED FORM ON THE FOLLOWING CONDITIONS

1. The approval is valid for a period of 2 year/s or duration of project whichever is later
2. The date of commencement of study should be informed
3. A written request should be submitted 3weeks before for renewal / extension of the validity
4. An annual status report should be submitted.
5. The TIREC will monitor The study
6. At The time of PI's retirement/leaving the institute, The study responsibility should be transferred to a person cleared by HOD
7. The PI should report to TIREC within 7 days of the occurrence of the SAE. If the SAE is Death, the Bioethics Cell should receive the SAE reporting form within 24 hours of the occurrence.
8. In the events of any protocol amendments, TIREC must be informed and the amendments should be highlighted in clear terms as follows:
   a. The exact alteration/amendment should be specified and indicated where the amendment occurred in the original project. (Page no. Clause no. etc.)
   b. The PI must comment how proposed amendment will affect the ongoing trial. Alteration in the budgetary status, staff requirement should be clearly indicated and The revised budget form should be submitted.
   c. If the amendments require a change in the consent form, the copy of revised Consent Form should be submitted to Ethics Committee for approval. If the amendment demands a re-look at the toxicity or side effects to patients, the same should be documented.
   d. If there are any amendments in the trial design, these must be incorporated in the protocol, and other study documents. These revised documents should be submitted for approval of The IEC, only then can they be implemented.
   e. Approval for amendment changes must be obtained prior to implementation of changes.
   f. The amendment is unlikely to be approved by the IEC unless all the above information is provided.
   g. Any deviation/violation/waiver in The protocol must be informed.

STANDS APPROVED UNDER SEAL

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CERTIFICATE-II

This is to certify that this dissertation titled **"CLINICAL STUDY OF PROFILE OF ADOLESCENT DERMATOSES AND THEIR EFFECT ON QUALITY OF LIFE IN ADOLESCENTS – PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA"** of the candidate **Dr.ARAVIND BASKAR.M** with registration number **201730251** for the award of degree of M.D. Dermatology, Venereology and Leprosy. I personally verified the urkund.com website for the purpose of plagiarism check. I found that the uploaded file contents from introduction to conclusion page shows **1% percentage** of plagiarism in the dissertation.

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Sources included in the report:

https://worldwidescience.org/topicpages/f/facial+seborrheic+dermatitis.html

Instances where selected sources appear:

5

LIST OF ABBREVIATIONS USED

TRH – Thyrotropin releasing hormone

SRIF – Somatotropin release inhibiting factor

GnRH – Gonadotropin releasing hormone

LHRH- Luteinizing hormone releasing hormone

HPA – Hypothalamus- pituitary – adrenal axis

SSRI – Selective serotonin reuptake inhibitor

SD- Seborrheic dermatitis

DLQI – Dermatology Life Quality Index

NK cell – Natural killer cell

PMLE – Polymorphic light eruption

LCE- Late cornified envelope

URI – Upper respiratory tract infection

TNF – Tumour necrosis factor

LGV – Lymphogranuloma venereum

KOH – Potassium hydroxide

MCV – Molluscum contagiosum virus

HSV- Herpes simplex virus

VZV – Varicella zoster virus

PR – Pityriasis rosea

HHV – Human herpes virus

ACD – Allergic contact dermatitis

ICD – Irritant contact dermatitis

LP – Lichen planus

PRP – Pityriasis rubra pilaris

CU – Chronic urticarial

CSU – Chronic spontaneous urticarial

SLE – Systemic lupus erythematosus

QoL – Quality of Life

KP – Keratosis pilaris

CONTENTS

INTRODUCTION

Adolescence – An age of opportunity

The term adolescence comes from Latin word meaning" to grow to maturity". The world is home to 1.2 billion individuals aged 10–19 years equal to 1/5th of world population. Currently, one in every five person on the earth is an adolescent and 85% of these adolescents live in developing countries. In India, 20.07% of the total population is adolescents i.e. more than 200 million. [1] Adolescence is an age of opportunity for children, and a pivotal time for us to build on their development.

Physical changes in adolescence:

Growth is the increase in the body size and mass as a result of the increase in the number and size of cells. Development is the differentiation and maturation of biological functions of organs.[2] Physical changes include general increase in growth rate of skeleton, muscles and viscera, gonadal growth and development, changes in body composition, sexual development, and growth spurt.[3]

Hormonal changes in adolescence

Most noticeable change during adolescence is increased secretion of sebum due to a surge in sex hormones like androgen, progesterone and estrogen which stimulate sebaceous glands. Small peptide hormones are synthesized and stored in hypothalamic nuclei which regulate secretion of pituitary hormones like Thyrotropin releasing hormone (TRH), somatotropin release inhibiting factor (SRIF, somatostatin), and gonadotropin releasing hormone (GnRH) (also referred to as luteinizing hormone releasing hormone, LHRH). [4] Hypothalamus secretes GnRH which in turn stimulates pituitary gland to secrete LH and FSH. Estrogen and progesterone decreases the level of LH and FSH in females and males respectively. Inhibin which is a product of spermatogenic tubules is considered to play an important role in FSH regulation.

Adolescents and mental health

The most common mental illnesses encountered in adolescents are anxiety, mood, attention, and behavior disorders. At least one in five adolescent aged 9–17 years has a diagnosable mental health disorder that causes some degree of impairment; one in 10 has a disorder that causes significant impairment, and only one third of these adolescents receive the necessary treatment.[5] About one half of all serious adult psychiatric disorders start by 14 years of age, but treatment usually does not begin for 6–23 years after onset of the illness.[6]

IMPACT OF SKIN DISORDERS IN EDUCATION AND OCCUPATIONS:

Adolescents are usually unaware of the negative consequences of certain skin diseases in their occupations. Students with palmar hyperhidrosis may complain of difficulty in writing or holding pen and other objects. Adolescents with acne vulgaris are affected the most mentally. The consequences range from low mood to even suicidal tendencies. The prevalence of active suicidal ideation among the psoriasis and acne patients was found to be 5.6 to 7.2 % which was higher than the prevalence reported among general medical patients(2.4 – 3.3%).[7]

Hence for such individuals prompt treatment is required and for whom treatment does not work well, it is better to change the profession instead of working hard to achieve unobtainable educational and vocational goals.

REVIEW OF LITERATURE

The adolescent period is considered very critical, as many skin diseases which presented first during childhood begin to exert most damaging effects after the onset of puberty and many diseases manifest first during adolescent period like acne vulgaris. There is immense pressure on young girls to cope up with maturing skin who are persuaded by advertisers that having plenty of hair on head, none on face, under arms or legs is ideal for a girl which is virtually impossible to achieve. Adolescents also present with skin disorders involving self-inflicted injury as a major component, ranging from mild excoriated acne to severe habitual mutilation. The mental state can range from mild anxiety to personality disorders and psychotic instability. Adolescent dermatoses can be classified as below:

CLASSIFICATION OF ADOLESCENT DERMATOSES:

Sl no	Diseases		
1.	**Infections** a) Bacterial b) Viral c) Fungal **Infestations (parasitic)** a) Scabies b) Pediculosis	7.	**Keratinisation disorder** a) Ichthyosis b) Palmoplantar keratoderma c) Phrynoderma d) Porokeratosis e) Keratosis pilaris
2.	**Dermatitis** a) Irritant contact dermatitis b) Allergic contact dematitis c) Seborrheic dermatitis d) Atopic dermatitis e) Nummular eczema f) Dyshidrotic eczema g) Pityriasis alba	8	**Connective tissue disorder** a) Systemic lupus erythematosus b) Morphoea c) Rheumatoid arthritis d) Scleroderma e) Discoid lupus erythematosus
3.	**Pigmentary disorders** a) Disorders of hyperpigmentation (i) Freckles/ Lentigenes (ii) Inherited disorders of hyperpigmentation (iii) Ashy dermatosis b) Disorders of hypopigmentation (i) Vitiligo (ii) Inherited disorders of hypopigmentation	9. 10. 11.	**Hamartoneoplastic disorders** a) Neurofibromatosis b) Tuberous sclerosis **Cutaneous adverse drug reactions** a) Benign CADR b) Severe CADR **Skin tumours** a) Benign b) Malignant

4.	**Appendageal disorders** a) Acne b)Nail disorders c) Hair disorders d) Sweat disorders	12.	**Bullous disorders** a) Linear IgA disease b) Epidermolysis bullosa c) Dermatitis herpetiformis d) Pemphigus and pemphigoid disorders
5.	**Naevi** a) Congenital naevi b)Acquired naevi	13. 14. 15.	**Urticaria** **Cutaneous photosensitivity disorders** **Metabolic disorders**
6.	**Papulosquamous disorders** a) Psoriasis b) Lichen planus c) Pityriasis rubra pilaris d) Lichen planus e) Lichen nitidus	16.	**Disorders of dermal connective tissue** a) Cutis laxa b) Pseudoxanthoma elasticum c) Anetoderma d) Keloids and hypertrophic scars

DISEASES WITH HIGH IMPACT ON QUALITY OF LIFE OF ADOLESCENTS:

The diseses with high impact on quality of life of adolescents include acne vulgaris, seborrheic dermatitis, hyperhidrosis, dermatophytosis, scabies, pediculosis, psoriasis, vitiligo, atopic dermatitis, contact eczema, ichthyosis and urticaria.

DISORDERS THAT ARE PRESENT IN OR CAUSE PARTICULAR PROBLEMS DURING ADOLESCENCE ARE:

1. Acne vulgaris	7. Hidradenitis suppurativa
2. Acne excoriee and neurotic excoriation	8. Fox Fordyce disease
3. Self mutilation and dermatitis artefacta	9. Polymorphic light eruption
4. Seborrheic dermatitis	10. Epidermolysis bullosa (Weber Cockayne syndrome)
5. Pityriasis versicolor	11. Psoriasis
6. Hyperhidrosis	12. Atopic dermatitis

1. ACNE VULGARIS:

Acne develops as a result of complex interplay of factors like excess sebum production, follicular epidermal hyperproliferation with subsequent plugging of follicle, presence and activity of propionibacterium acnes and inflammation.

It is characterized by non-inflammatory, open or closed comedones and by inflammatory papules, pustules, and nodules. Acne vulgaris affects areas of skin with dense population of hair follicles like face, upper chest and back. Systemic symptoms are usually absent in acne vulgaris. But in case of acne fulminans, acne is associated with systemic symptoms like fever. Acne conglobata is another form of severe acne characterized by multiple comedones and disfiguring scars. Acne vulgaris also has a psychological impact on patients regardless of the severity or grade of the disease.[8]

Acne severity can be graded as below:

Grade 1: Mild - Open and closed comedones with few inflammatory papules and pustules

Grade 2: Moderate – Comedones, predominantly papules and pustules mainly on face

Grade 3: Moderately severe - Numerous papules, pustules and nodules, also on chest and back

Grade 4: Severe - Many large, painful nodules, cysts or abscesses, widespread scarring. [9]

Histopathology:

Microcomedone is characterized by dilated follicle with a dense keratin plug. As the disease progresses, the follicular opening becomes dilated, and an open comedone occurs. When the follicular wall thins, it may rupture. As the follicle ruptures, it is accompanied by dense inflammatory infiltrate throughout the dermis. At last, extensive fibrosis and scarring may occur.

Treatment:

Mild:

1. Comedonal:

1st line: Topical retinoid

2nd line: Alternative topical retinoid with salicylic acid washes

2. Papular/pustular:

1st line: Topical retinoid**,** topical antimicrobial (Benzoyl peroxide, clindamycin, erythromycin), combination of preparations

2nd line: Alternative topical retinoid plus alternative topical antimicrobial with or without salicylic acid washes

Moderate:

1.Papular/ pustular:

1st line: Oral antibiotics (tetracyclines, erythromycin, trimethoprim-sulfamethoxazole)

Topical retinoid with or without benzoyl peroxide

2nd line: Alternative oral antibiotic

Alternative topical retinoid

Benzoyl peroxide

2. Nodular:

1st line: Oral antibiotics (tetracyclines, erythromycin, trimethoprim-sulfamethoxazole)

Topical retinoid with or without benzoyl peroxide

2nd line: Oral isotretinoin, alternative oral antibiotic, alternative topical retinoid, benzoyl peroxide

3. Severe:

1st line: Oral isotretinoin

2nd line: High dose oral antibiotic, topical retinoid, benzoyl peroxide [9]

2.**ACNE EXCORIEE:**

Acne excoriee(Synonym: Picker's acne; Acne excoriee of brocq) is a self-inflicted skin condition in which the patient has an immense urge to pick real or imagined acneiform lesions resulting in aggravation of skin lesions. It occurs commonly in adolescent girls under emotional stress. In this condition patient admits the self-inflicted nature of the condition and hence differs from dermatitis artefacta. [10]

Clinical features:

Patients have chronic excoriations predominantly around hairline, forehead, preauricular cheek and chin sometimes extending to neck and occipital hairline. Chronic lesions are characterized by white, atrophic scarring with peripheral pigmentation.

Differential diagnosis: Facial picking disorder, trigeminal trophic syndrome**,** dermatitis artefacta.

Treatment:

For acne: Topical retinoids/ antibiotics, systemic antibiotics, isotretinoin, phototherapy.

For the habit and co-morbidities: Habit reversal**,** cognitive behavioral therapy**,** SSRI Antidepressants, mood stabilizers (Eg. pregabalin, gabapentin), lamotrigine, topiramate

3. SKIN PICKING DISORDER (NEUROTIC EXCORIATION/PSYCHOGENIC EXCORIATION/ DERMATILLOMANIA):

Patients initially are reluctant to accept this behaviour but later admit an urge to pick and gouge at their skin and attribute it to a 'response to stress'. The average duration of disease before presentation is usually up to 10 years. [11]

Clinical features:

Lesion are characterized by excoriations but chronic lesions may show atrophic scars merging to form linear, coalescent areas.

Differential diagnosis:

Excoriations caused by generalized pruritus, lichen planus, bullous disorders, mucinosis, acne excoriee.

Treatment:

For the skin: Antibiotics (in case of secondary bacterial infection), antihistamines, tricyclic antidepressants, treatment of chronic pruritus, phototherapy

For the picking habit and co- morbities: Habit reversal**,** SSRI's, mood stabilizers**,** antidepressants, lamotrigine, topiramate.

4. DERMATITIS ARTEFACTA:

Dermatitis artefacta (DA) is a psychocutaneous disorder where the skin lesions are self-induced in order to satisfy an unconscious psychological or emotional need.[12] The disease has a female preponderance with female to male ratio ranging from 20:1 to 4:1. Majority of cases begin in adolescence.

Clinical features:

Patient gives a series of fabricated lies usually referred to as 'hollow history' describing sudden appearance of complete lesions with little or no prodrome. Cutaneous lesions are polymorphic, bizarre and mimic any inflammatory reactions in the skin most commonly on the face, particularly on the cheeks. Sometimes patients may also present with circular erosions or blisters of uniform size intentionally produced by cigarette or cryodamage. Excoriations may be made with nails, sanding boards and wire brushes. The lesions are caused by actions of fully aware patient on the skin, scalp, nails or mucosae but hide their responsibility for their actions from doctors.

Clinical variants:

- Factitious cheilitis, factitious nail disease, hair artifact, witchcraft syndrome, dermatitis artefacta with artifact of patch tests, constriction artifact, purpura artifact, dermal artifact, postsurgical artifact [13]

Management:

- Treatment of skin lesions (Antibiotics, scar revision, occlusive bandaging)
- Decision about psychiatric referral should be balanced because the patient will interpret this referral as a rejection, which will further intensify the self-mutilation. The patient can be confronted when there are special benefits like secondary gain and fugue states.
- Antipsychotics, might be helpful in certain clinical situations, but may not be necessary for all cases.[12]

5. SEBORRHEIC DERMATITIS:

Seborrheic dermatitis (SD) is common, occurring in 2 – 5 % of the population. It is defined as a chronic, superficial, inflammatory disease with a predilection for the scalp, eyebrows, eyelids, nasolabial creases, lips, ears, axillae, pre sternal region, umbilicus, groins, sub mammary folds and gluteal crease. The disease is characterized by yellow, greasy scaling on erythematous base. Pityriasis sicca (dandruff) represents milder form of seborrheic dermatitis. Pityriasis steatoides (oily type) is associated with erythema and accumulation of thick crusts. Malassezia species are implicated in the pathogenesis of seborrhoeic dermatitis (SD), but the relationship between species and the disease remains vague.[14]The prevalence of SD is estimated to be 1–3% in young adults.[15] [16]

Clinical features:

Active phases of seborrheic dermatitis manifest with scaling, burning and itching alternating with inactive periods. Winter and early spring causes exacerbation of skin lesions with remission commonly in summer. In few occasions secondary infection may also occur in intertriginous areas and eyelids, thus complicating the disease.

The appearance of skin lesions in scalp may vary from mild patchy scaling to widespread thick, adherent crusts. Seborrheic blepharitis can also occur. There are 2 distinct

patterns of seborrheic dermatitis with the most common being annular or geographic petaloid pattern. A rare pityriasiform variety can be seen on the trunk and the neck, with peripheral scaling resembling pityriasis rosea.

Differential diagnosis:

Tinea, erythrasma, langerhan cell histiocytosis, cutaneous lupus, psoriasis, wiskott aldrich syndrome, atopic dermatitis, dermatomyositis, contact dermatitis, rosacea, zinc deficiency [17], drug eruption.

Treatment:

- Ketoconazole, ciclopirox, tacrolimus, zinc pyrithione and pimecrolimus,[18–20], lithium gluconate 8% ointment, sodium sulfacetamide with or without sulfur
- Corticosteroids: produce rapid effect but on the face even mid potent steroids can produce steroid induced rosacea
- Ketoconazole with desonide combination has also been tried for facial seborrheic dermatitis[21] Oral itraconazole and oral terbinafine show some efficacy while oral fluconazole shows marginal benefit.[22]

6. PITYRIASIS VERSICOLOR:

Pityriasis versicolor is a chronic, mild usually asymptomatic superficial fungal infection of the stratum corneum, caused by Malassezia yeasts. [23] Malassezia is considered member of normal skin flora of human beings. Under certain conditions, the commensal yeast form transforms into filamentous pathogenic forms.

Clinical features:

The disease is characterized by scaly, hypopigmented perifollicular macules coalescing to form patches most often occurring on the trunk and extremities. Cutaneous infection with Malassezia can manifest also as folliculitis, inverse tinea versicolor or rarely as pityriasis versicolor rubra or erythrasmoid pityriasis versicolor. We can appreciate yellow

fluorescence in wood's lamp examination. Sites of predilection are the sternal region and the sides of the chest, abdomen, back, pubis, neck and intertriginous areas. Pityriasis versicolor is characterized by fine scales (branny/furfuraceous). The scale is not visible often. The scales can be made visible by scratching with fingernails, which is called as the scratch sign(coup d'ongle sign, besnier's sign, stroke of the nail) which may be negative if patient has taken recent bath or if the lesion is treated.[24]

Diagnosis:

- 10% KOH -mycelium and spores in "spaghetti and meatballs appearance", Culture - requires lipid enrichment of the media, wood's light examination, skin biopsy. [25]
- **Treatment:**
- Imidazoles and triazoles[26], selenium sulfide, ciclopirox olamine, zinc pyrithione, sulfur preparations, salicylic acid preparations, propylene glycol , benzoyl peroxide
- Oral treatment includes ketoconazole 400 mg repeated at monthly intervals. Oral itraconazole 200 mg once a day for 7 days is effective and can be followed by prophylactic treatment with itraconazole 200 mg twice a day on 1 day a month.

7. HYPERHIDROSIS:

Primary hyperhidrosis is a chronic idiopathic disorder characterized by excessive sweating which mainly affects the axillae, palms, soles of the feet and the face. Hyperhidrosis can have significant issues in both private and professional life. Patients with hyperhidrosis experience impairment in various domains as well as in overall quality of life.(114)

Pathophysiology:

Hyperhidrosis can be idiopathic or secondary to other diseases, febrile illness, metabolic disorders or use of certain medications.Generalized hyperhidrosis can be due to neurologic causes, metabolic disorders, febrile illness, medications (propranolol, SSRI,

tricyclic antidepressants), malignancy, tuberculosis.[28] Localized hyperhidrosis can be associated with gustatory stimuli, eccrine naevus, blue rubber bleb naevus, glomus tumour.

Treatment:

- Topical agents: 20% aluminium chloride hexahydrate, topical anticholinergics, 2-5 % tannic acid solution, boric acid, potassium permanganate, resorcinol, formaldehyde, glutaraldehyde. [29] [30], botulinum toxin. [31], iontophoresis. [32], surgery (Sympathectomy, 1064 Nd YAG LASER, surgical excision of affected area)[33]

8. POLYMORPHIC LIGHT ERUPTION:

Polymorphic light eruption(PMLE) is the most common chronic, recurring and idiopathic photodermatosis.

Pathophysiology:

The cause of PMLE is unknown, although an immunologic basis has been demonstrated. There occurs a delayed type hypersensitivity (DTH) response to undefined endogenous, photoinduced cutaneous antigens as a result of inherited abnormality in the reduction of UVR-induced immunosuppression which occur normally, thereby resulting in enhanced response to photoantigens and development of skin lesions.[34,35]The action spectrum is unclear, although it is mostly 290-365nm and rarely visible light. Photo-provocation studies have shown positive response to broad-band UVA (50%), narrow-band UVB (50%), and to both UVA and UVB (80%).[36]

Clinical features:

Mixed papulovesicular type is the most common type followed by plaque and popular/micropapular types. Other types include vesiculo-bullous type, erythema multiforme type, insect bite-like PMLE variant (strophula), a form without a rash (sine eruptione) lichen planus like, lichen nitidus like and purpuric/hemorrhagic subtypes. It arises 1-2 days after exposure and resolves spontaneously over the next 7-10 days. It is most common with initial

sun exposures during early summer or spring seasons; "hardening" of the skin may occur with subsequent exposures. As the name suggests, the lesions are polymorphic. Patients tend to develop the same type each year. [37]

Treatment:

- Avoiding sun exposure, wearing protective clothing, using sunscreen, antioxidant cream containing 0.25% alpha- glucosylrutin(a natural modified flavonoid), 1% tocopheryl acetate (vitamin E), calcipotriol, topical and oral steroids, beta carotene, antimalarials, omega 3 polyunsaturated fatty acids, commercially available E. coli-filtrate(Colibiogen)[One millilitre of the commercial product comprises the filtrate of about 2 x 10^{12} E. coli bacteria], extract of tropical fern Polypodium leucotomos, azathioprine, ciclosporin.

9. ATOPIC DERMATITIS:

Atopic dermatitis (AD) is a chronic inflammatory skin disorder that usually occurs during childhood especially in the first year of life, with a frequency varying from 10% to 30%.[38] AD persists from childhood through adolescence in about 40% of cases and the risk factors are identified to be as follows: female sex, sensitization to inhalant and food allergens, rhino conjunctivitis and allergic asthma, the practice of certain jobs. During adolescence, lesions usually appear on the face and neck, often associated with Malassezia overinfection and on the palms and soles.[39,40]Persistence of lesions during adolescence is correlated with anxiety; moreover, adolescents affected by AD might have relationship problems with their peers. Stress and the psychological problems represent a troublesome burden for adolescents with AD and cause a significant worsening of the patients' quality of life (QoL).[41]

Pathogenesis:

Two main hypotheses have been proposed regarding the development of inflammation that leads to AD. The first suggests a primary immune dysfunction which

causes an imbalance in T-cell subsets, with Th2 cells predominating resulting in over production of Th2 cytokines like IL-4, IL-5 and IL 13 causing increase in IgE levels whereas in chronic AD, the Th1 cells predominate. The second hypothesis proposes a primary defect in the epithelial barrier like mutations in filaggrin gene leading to secondary immunologic dysfunction , resulting in inflammation. [42–45]

Clinical features:

The distribution of lesions is different depending upon the age. The typical eczematous lesions occur during the first 2 years of life. Lesions are exudative during the first few months of life and mainly localized in the face (in particular forehead, cheeks, chin, with the central-face saving), head and in the extensor surface of limbs. In older children the lesions are mainly concentrated on the flexures of the limbs, the popliteal and antecubital folds, back of hands and feet. The skin is usually dry with lichenification and intense itch; the lips are dry brittle, chapped and develop fissures associated with post-inflammatory hyperpigmentation in the region around the eyes. The evolution of the clinical feature is characterized by different phases. Phase of remission of symptoms occur mostly during the summer months, alternating with periods of exacerbation, particularly during the autumn-winter.[18] Clinical features characteristic of adolescence are represented by eyelid dermatitis, and the *palmar and plantar juvenile dermatitis;* the eczematous lesions are usually localized to the neck.[46]The lesions are also localized in forehead, perioral region, upper chest,shoulder girdle, neck, flexor surfaces of the legs and backs of hands.

Treatment:

Moisturizers, topical steroids, tacrolimus and pimecrolimus (calcineurin inhibitors), probiotics, UV-A, UV-B, or a combination of both, psoralen plus UV-A, or UV-B1 (narrow band UV-B) therapy, acyclovir, phototherapy, methotrexate, azathioprine, cyclosporine and

mycophenolate mofetil, antibiotics for secondary bacterial infections, omalizumab, dupilumab, Lebrikizumab[47], apremilast , nemolizumab. [48]

10. PSORIASIS:

Psoriasis is a common chronic and recurrent inflammatory disease of the skin with genetic predisposition characterized by circumscribed, erythematous, dry, scaling plaques of various sizes. The lesions are usually covered by silvery white scales which most commonly manifests on the skin of the elbows, knees, scalp, lumbosacral areas, inter gluteal clefts and glans penis.

Etiology:

Environmental factors: cold, trauma, infections (eg.streptococcal, staphylococcal, human immunodeficiency virus), alcohol and drugs(eg.iodides, steroid withdrawal, aspirin, lithium, beta blockers, botulinum A, antimalarials)

Genetic: human leukocyte antigen Cw6, deletion of 2 late cornified envelope (LCE) genes, LCE3E and LCE3B, are common genetic factors for susceptibility to psoriasis.

Immunologic: High levels of dermal and circulating TNF alpha and excess T-cell activity. Guttate psoriasis often appears following certain immunologically active events, such as streptococcal pharyngitis, cessation of steroid therapy and use of antimalarial drugs.[49]

Pathogenesis:

Psoriasis is a chronic T-cell-mediated inflammatory disease characterized by keratinocyte proliferation, endothelial proliferation, and inflammatory cell infiltration of the dermis and the epidermis.[50,51] Its pathogenesis, although not fully clarified yet, is based on a interplay of genetic and environmental factors. Psoriasis appears to represent a mixed T-helper (Th)1 and Th17 inflammatory disease. Th17 cells appear to be more proximal in the inflammatory cascade. Overexpression of type 1 cytokines such as IL-2, IL-6, IL-8, IL-12, IFN gamma and TNF alpha has been demonstrated and overexpression of IL-8 leads to

accumulation of neutrophils. The main signal for Th1 development is IL-12, which promotes intracellular IFN-gamma production.[52–54]

Clinical features:

The various presentation and types include:

Chronic plaque psoriasis (psoriasis vulgaris) is the most common type of psoriasis involving scalp, extensor surfaces of the knees, elbows, scalp and trunk. It is characterized by raised, inflamed lesions covered with a silvery white scale which can be scraped away to reveal inflamed skin beneath.[55,56]

Guttate psoriasis: It presents as small salmon pink papules, 1 to 10 mm in diameter, mostly on the trunk. The lesions may be associated with scaling. It frequently appears suddenly, 2 to 3 weeks after an upper respiratory tract infection (URI) with group A beta hemolytic streptococci.

Inverse psoriasis occurs on the skin flexures, axillae, groin, inframammary region and other skin folds. It is characterized by smooth, inflamed lesions without scaling due to the moist nature of the area where this type of psoriasis is located.

Pustular psoriasis presents as sterile pustules appearing on the palms and soles or diffusely over the body. Pustular psoriasis may cycle through erythema, pustules and then scaling.

Ocular features: ectropion, trichiasis, conjunctivitis, and conjunctival redness, corneal dryness with punctate keratitis. Anterior uveitis can be seen in association with psoriatic arthritis. Acute psoriatic uveitis is usually bilateral, prolonged and more severe than non psoriatic cases.

Treatment:

Topical treatment:

Corticosteroids, tars, anthralin, tazarotene, calcipotriene, calcineurin inhibitors, salicylic acid, phototherapy

Systemic therapy:

Methotrexate, cyclosporine, retinoids, dapsone, steroids (pustular psoriasis in pregnancy, erythroderma with metabolic complications, psoriatic arthritis)

Biologic agents:

TNF alpha inhibitors (infliximab, adalimumab, etanercept), Ustekinumab (mAb against IL-12 and IL-23- p40 subunit), efalizumab (mAb to CD 11a portion of LFA-1), alefacept (fusion protein of the external domain of LFA-3 and Fc region of IgG1), IL 17 inhibitors (brodalumab, ixekizumab and secukinumab), apremilast.[57,58]

11. HIDRADENITIS SUPPURATIVA (Acne inversa/ verneuil disease/ velpeau disease/ ectopic acne/ pyoderma fistulans significa)

Hidradenitis suppurativa (HS) is a chronic, inflammatory, recurrent, debilitating, follicular disease that usually presents after puberty.[59] HS is a primary disease of hair follicle. It usually occurs after puberty.

Clinical features:

HS is diagnosed based on essential criteria

Typical lesions: Deep seated painful nodules, draining sinuses, abscesses, bridged scars, open pseudocomedones

Typical topography: Axillae, groin, perianal and perineal region, buttocks, inter and inframammary folds.

Chronicity and recurrences. [60]

Hurley staging:

Stage 1: Recurrent abscess formation without sinus tracts and cicatrization

Stage 2: Recurrent abscesses with widely separated sinus tracts and cicatrization

Stage 3: multiple interconnected abscesses, sinus tracts and cicatrization diffusely involving an entire region

Differential diagnosis:

Bacterial infections (abscesses, carbuncle, furunculosis), crohn's disease, tuberculosis, sporotrichosis, actinomycosis, lymphogranuloma venereum (LGV), steatocystoma multiplex, langerhans cell histiocytosis

Investigations:

- Pus culture and sensitivity, Ultrasound, MRI, Skin biopsy

Management:

- Analgesics, antibiotics, systemic or intralesional steroids, biological agents (TNF alpha inhibitors), retinoids, zinc gluconate, surgeries (Deroofing, Incision and drainage, Localized surgery), CO2 Laser, radiotherapy.

OTHER ADOLESCENT DERMATOSES

A. INFECTIONS

1. FUNGAL

a) DERMATOPHYTOSIS:

Dermatophytosis is a superficial fungal infection of keratinized tissue commonly designated as tinea. They have the ability to invade hair, nails, and skin of the living host. They are represented as 3 genera namely Microsporum, Trichophyton and Epidermophyton of Deuteromycota or Fungi imperfecti. Based on whether a species predominantly resides in the skin of humans, on animals or in the soil it is said to be anthropophilic, zoophilic, or geophilic respectively.

(i)Tinea corporis:

The term tinea corporis is used to refer to dermatophyte infections of the trunk, legs and arms, but excluding the groin, hands and feet. It is most prevalent in tropical and sub tropical regions. The most common are Trichophyton rubrum and zoophilic dermatophytes like Microsporum canis. Recently, there seems to be an epidemiological transformation of dermatophytes in India. Though studies done across India have found *Trichophyton rubrum*, to be the most common organism, the prevalence is different compared to the past. In recent studies, *Trichophyton mentagrophytes* has emerged as the co-dominant pathogen with an increased prevalence in comparison to what was seen in the past**.**[61]

Clinical features:

Tinea corporis may affect any site but infections with zoophilic species are more likely to occur on exposed parts such as face, neck and arms. Though clinical presentations are variable, typical lesions manifest as round scaly patches that are dry, erythematous and clearly circumscribed. The fungus is more active at the margin of the lesions and hence this is more erythematous than the middle which tends to heal earlier. As the first ring of advancing infection continues to spread outward, it may become surrounded by one or more concentric rings or arcuate patters. In case of infections caused by zoophilic organisms, the lesion may be markedly inflamed and even pustular. In addition to annular lesions other morphological variants include eczematous, crusted type, herpetiform type and plaque type.

Differential diagnosis:

Tinea corporis has to be distinguished from other causes of erythematous scaly skin lesions such as atopic dermatitis, eczema, pityriasis rosea, pityriasis versicolor, psoriasis, seborrheic dermatitis and syphilis.

(ii)Tinea cruris:

It is used to refer to dermatophyte infections of the groin, perianal and pubic region. The dermatophytes most often encountered in tinea cruris are the anthropophilic species, T.rubrum and E.floccosum. It predominantly occurs in males and is also known as “Dhobi’s itch” or “Jock itch”. The infection can be contracted by autoinfection from the foot to the groin, the sharing of towels and sports clothing.

Clinical features:

Tinea cruris usually presents as one or more rapidly spreading, erythematous lesions with central clearing on the inside of the thighs. The lesions which tend to coalesce, have a raised erythematous border that encloses a brown area of scaling. Patient gives history of intense pruritus. Satellite lesions may occur due to scratching which may fuse with the primary lesion altering its outline. The infection can spread from medial aspect of thigh to the scrotum, penis, natal cleft and gluteal folds and also to the anterior and posterior aspect of the thighs. Scrotum can also be infected with clinical signs being inconspicuous. Vesiculation is rare, but dermal nodules may appear in a beaded fashion along the edge in older lesions.

Differential diagnosis:

Candidosis, pityriasis versicolor, erythrasma and flexural psoriasis.

(iii)Tinea faciei:

Infection of glabrous skin of the face by dermatophyte fungus is referred to as tinea faciei. It occurs either by direct inoculation from external source or by secondary spread from preexisting tinea of another body site. The latter pattern occurs mostly with T.rubrum as well as with T.concentricum infection.

Clinical feature:

Fungal infection of the face is frequently misdiagnosed. Typical annular rings are usually lacking and the lesions are exquisitely photosensitive. Erythematous, slightly scaling,

indistinct borders may be present at the periphery of the lesions, and are the best location for KOH examination. The patient complains of itching, burning and exacerbation after sun exposure. There will be often history of exposure to animals. Erythema is common and scaling is present in less than two-thirds of cases. Usually the infection is caused by *T. rubrum*, *T. mentagrophytes*,or *M. canis*. Tinea faciei caused by *Microsporum nanum* has been described in hog farmers. If topical corticosteroids have been used, fungal folliculitis is a frequent finding. A biopsy may be required to establish the diagnosis. A high index of suspicion is required, as fungal hyphae may be few in number or confined to hair follicles. The inflammatory pattern may be psoriasiform spongiotic or vacuolar interface changes. The latter pattern has the potential to perpetuate confusion with lupus erythematosus.

Differential diagnosis:

The differential diagnosis includes discoid lupus erythematosus, seborrheic dermatitis, rosacea, contact dermatitis, lupus vulgaris, demodex folliculitis, pseudofolliculitis, folliculitis and impetigo.

(iv)Tinea capitis:

Tinea capitis is a common infection of the scalp hair due to dermatophyte fungi which occurs predominantly in children.[62] The clinical manifestations range from mild scaling with minimal hair loss to large inflammatory plaques with pustules with extensive areas of alopecia.

Though many species of dermatophyte have capability to invade hair shafts, some (e.g. *T. tonsurans, Trichophyton schoenleinii* and *T. violaceum)* have a predilection for this pattern of infection, while *Epidermophyton floccosum* and *Trichophyton concentricum* do not cause tinea capitis. Tinea capitis can be classified according to

(i) Inflammation:

- Inflammatory type (kerion and favus)

- Non inflammatory (grey patch and black dot)

(ii) Size and location of spore:

a) Ectothrix (spores outside the hair shaft)

- Small spore ectothrix (Microsporum audouinii, M.canis, M.gypseum, M.ferrugineum)
- Large spore ectothrix (Trichophyton mentagrophytes, T.equinum, T.rubrum)

b) Endothrix (spores inside the hair shaft)

- Caused by T.tonsurans and T.violaceum, the latter being endemic in India

(v)Tinea incognito

Tinea incognito occurs due to dermatophyte infection modified by corticosteroids, either systemic or topical, tacrolimus and pimecrolimus prescribed for some preexisting pathology or given mistakenly for the treatment of misdiagnosed tinea.

Clinical features:

Tinea incognito poses challenge to dermatologists due to marked alteration in morphology of the clinical lesion. Immunosuppression induced by corticosteroids causes suppression of inflammation and significant difficulty in diagnosis and faulty treatment. Usually systemic steroids cause little alteration in morphology when compared to topical steroids. Higher the potency of steroids, higher is the chance of occurrence of tinea incognito. When inflammation is suppressed, the lesions become less visible with decrease in associated symptoms. When the treatment is stopped the dermatosis relapses with varying severity. If applications of topical steroids are continued, again the relief is renewed and the cycle gets repeated. Atypical clinical types include psoriasis-like, eczematous dermatitis-like, seborrheic dermatitis-like, and rosacea-like.

Differential diagnosis:

Other steroid modified infections in the groin should be considered especially candidiasis and these may be indistinguishable without cessation of therapy and relevant investigations. Face, groin and hands are usual sites of diagnostic error.

Investigations:

- Direct microscopic visualization using 10% or 20% potassium hydroxide (KOH) with or without dimethyl sulfoxide, 10% sodium hydroxide, Amann's chloral lactophenol.[63]
- Sabouraud's dextrose agar
- Nucleic acid-based molecular methods, PCR.[64]

Treatment:

- Topical azoles(econazole, ketoconazole, clotrimazole, miconazole, oxiconazole, sulconazole, sertaconazole, luliconazole)
- Allylamines (Naftifine, terbinafine)
    - Oral terbinafine 250 mg/day for 2-3 weeks
- Amorolfine
- Ciclopirox olamine
- Systemic antifungals(Fluconazole, itraconazole, ketoconazole, terbinafine, griseofulvin)
    - Itraconazole 100 mg/day for 2-4 weeks
    - Griseofulvin 1g/day for 4 weeks
- Duration:

a). Tinea corporis:

- Topical azoles applied twice daily for 2- 4 weeks
- Topical terbinafine applied twice daily for 2 weeks

- Oral terbinafine – 250 mg/day 2-3 weeks
- Oral itraconazole – 100 mg/day for 2-4 weeks
- Griseofulvin 1g/day for 4 weeks

b) Onychomycosis:

- Oral terbinafine 250 mg/day (6 weeks – fingernails; 3 months – toe nails)
- Oral itraconazole 400 mg/day for 1 week for 2-3 months for finger nails, 3-4 months for toe nails

c) Tinea capitis:

- Terbinafine <10 kg, 62.5 mg; 10- 20 kg, 125 mg; >20 kg, 250 mg for 4 weeks
- Itraconazole 2-4 mg/kg/day for 4-6 weeks
- Griseofulvin 10- 20 mg/kg for 6 weeks
- Itraconazole 5mg/kg in weekly pulses for 2-3 cycles

2. VIRAL

a) Molluscum contagiosum:

Molluscum contagiosum (MC) is a viral infection of skin caused by molluscum contagiosum virus (MCV), a DNA virus belonging to the Pox viridiae family and the genera of Mollusci pox virus.

Molluscum contagiosum commonly affects children and sexually active adults as well as immunocompromised individuals. It usually occurs by direct skin to skin contact or indirectly through fomites.

Clinical features:

It has an incubation period of 2-7 weeks, characterized by a single/multiple, round/dome shaped, pink waxy papule ranging from 1 mm to 5 mm on face, eyelids, neck, axilla and thigh.[65] A central punctum is visible in all well-formed lesions. The distribution is modified by the mode of infection, the type of clothing and the climate. In children, lesions are usually distributed on the axillae, sides of trunk, lower abdomen, thighs and face. In young adults and adolescents, genital lesions occur due to sexual transmission. Uncommon sites include scalp, lips, tongue, buccal mucosa membrane and soles. It can also occur on scars and in tattoos. Small lesions coalesce to form a plaque ("agminate form"). The number also varies from very few to numerous lesions. Multiple lesions usually suggest immunosuppression.

Differential diagnosis:

The solitary lesion may resemble a pyogenic granuloma, a keratoacanthoma or a squamous cell carcinoma. Multiple small lesions may be confused with plane warts. In HIV disease, molluscum contagiosum may be confused with penicilliosis, histoplasmosis and cryptococcosis.

Treatment:

Surgical removal by curettage, cryotherapy, CO2 laser, photodynamic therapy, topical agents like cantharidin, trichloroacetic acid, diluted liquefied phenol, topical salicylic acid preparations, tretinoin, adapalene, nitric oxide cream and potassium hydroxide solution, imiquimod, a nitric oxide liberating cream containing 5% sodium nitrate combined with salicylic acid 5% and Cidofovir

b) Herpes virus infections:

(i) Herpes simplex:

Eight of the more than 80 known herpesviruses are pathogenic for human beings. Human herpes simplex virus (HSV) is a contagious infection with a large reservoir in the general population. There are 2 major antigenic types: type 1, which is associated mainly with infections of the face and type 2, which mostly affects genitals.

- **Herpes labialis:**

Herpes labialis is an infection of the skin and mucous membranes (in particular, the lips) and is characterized by erythema and vesicles that are preceded and accompanied by burning pain. It is a harmless but often disturbing ailment in immunocompetent patients and it usually heals spontaneously within 10 days. It can also be acquired from genital infection through oro genital contact.[66]

- **Herpes genitalis:**

Herpes genitalis is one among the most common sexually transmitted infections. It is caused by the herpes simplex virus type 2 (HSV-2) and also by the herpes simplex virus type 1 (HSV-1).

- **Primary genital herpes:**

  The classical clinical features consist of macular or papular skin and mucous membrane lesions which occurs approximately 4–7 days after sexual contact; then it progresses to vesicles, pustules and ulcers and can last for up to 3 weeks. They do not have any preexisting antibodies.[67]

- **First episode non primary genital herpes**

  About 50% of patients presenting with their first clinical episode of herpes have preexisting antibodies to either HSV 1 or HSV 2. They have lower frequencies of systemic symptoms, shorter durations of pain, fewer lesions, and shorter healing times

compared with true primary disease. The mean number of days with pain, healing time and viral shedding is about 4 days less than in true primary disease.

- **Recurrent episodes**

  Genital herpes caused by HSV 2 is recurrent in at least 90% infected patients and 88% have at least one recurrence within 12 months of their initial episode.

Investigations: Tzanck smear shows multi nucleated giant cells, HSV 1 and HSV 2 serology, PCR, Multiplex PCR (Herpes, chancroid, syphilis).

Treatment:

- Acyclovir
  - Topical acyclovir
  - Oral: 200 mg 5 times a day for 7-10 days
- Valacyclovir (1g twice daily for 7-10 days)
- Famciclovir (250 mg three times a day for 7 – 10 days)

(ii). Varicella:

Varicella zoster virus (VZV, known as human herpesvirus 3) is an exclusively human neurotropic alpha-herpesvirus with a double-stranded DNA genome.[68] The incubation period is usually 14-17 days (range 9-23 days). After 1 or 2 days of fever and malaise(which is usually slight or absent in children), an inconstant and fleeting scarlatiniform or morbilliform erythema is followed by development of papules which rapidly becomes tense, clear and become unilocular vesicles. Within a few hours the contents become turbid and the pustules are surrounded by red areolae. In 2-4 days a dry crust forms and separates, leaving a shallow, pink depression which in the absence of secondary infection heals without scarring. The vesicles appear in 3 to 5 crops over 2-4 days. They are most numerous on the trunk, then on the face and scalp and on the limbs. Their distribution is centripetal with the eruption more

profuse on thighs and upper arms than on the lower legs and forearms. A characteristic feature is the presence of lesions at different stages in each site.

Diagnosis of varicella is based on the characteristic vesicular rash. Tzanck smear is also done to demonstrate multinucleated giant cells. Treatment is aimed at symptomatic relief. Paracetamol is used to control fever, fluids are given for hydration. Treatment with intravenous acyclovir is required in patients at risk for or with clinical evidence of disseminated disease, and in newborns who were exposed to VZV shortly after birth. In healthy children, antiviral treatment is not mandatory, but Dunkle and colleagues have shown that treatment with oral acyclovir (800 mg 5 times a day for 7-10 days) within 24 hours of illness results in reduction in the duration of fever by 1 day and a reduced severity of cutaneous and systemic symptoms and signs.[69]

(iii) Pityriasis rosea (PR):

It is an acute self-limiting disease, probably infective in origin affecting mainly children and young adults, characterized by a distinctive skin eruption and minimal constitutional symptoms.

Predisposing factors:

Skin lesions are reported to occur during immunosuppressive treatment with steroids and after bone marrow transplantation and following drug intake like

- ACE inhibitors, beta blockers, adalimumab, griseofulvin, isotretinoin, metronidazole, penicillin, rituximab, terbinafine, vaccines (BCG, Diphtheria toxoid, Pneumococcal vaccine, Hepatitis B)

Causative organisms:

HHV 6 and HHV 7 are reported to be involved as a cause for the eruption.

Other viruses include HHV-8, herpes simplex virus type 2, hepatitis C and H1N1 influenza virus.

Clinical features:

Up to 69% of patients with PR have a prodromal illness before the appearance of herald patch. [70] Generalized eruption occurs 1-2 weeks after the onset of the herald patch. Though the lesions are asymptomatic, some patients may complain of pruritus. In few patients, flu-like symptoms have been reported, including headache, malaise, nausea, loss of appetite, fever, and arthralgia.[71] Appearance of a herald patch (usually seen in 50 to 90% cases) and characteristic lesions in a "Christmas tree" pattern aid the diagnosis of typical PR. Atypical variants of PR occur in 20% of cases. PR can be atypical with respect to morphology, size, distribution, number, site, and course of disease.[72] The various atypical morphological types include vesicular, purpuric, urticaria, generalized papular, lichenoid, erythrodermic, inverse type, pityriasis circinata et marginata of Vidal or limb girdle PR and EM-like PR. [73]

Treatment:

In many cases it is not necessary to treat the cases. The rash disappears in few weeks with no sequelae. Though many treatment options have been suggested most of them have not been proved definitely. The options tried are emollients, anti-histamines, topical preparations containing calamine, menthol-phenol, pramoxine, colloidal starch, oatmeal, NBUVB, Acyclovir.[74]

c) Warts:

Warts are benign proliferation of the skin resulting from infection with human papilloma virus(HPV). The incidence increases during the school years to reach a peak in adolescence following which declines through the twenties and gradually thereafter. Transmission occurs by physical contact with a contaminated object. Warts are self-limiting and regress within 2 years of onset.

Clinical features:

HPV infection may manifest as common warts, flat warts(plane warts), digitate warts and filiform warts. Based on site, there may be palmar and plantar warts, anogenital warts, oral warts and conjunctival warts. The types commonly seen in adolescents and young children are:

Common warts(verruca vulgaris): Caused by HPV types 1,2,4,7,57. They appear as firm papules with rough horny surface ranging from less than 1 mm to over 1 cm in diameter.

Plane warts: They are flat topped with smooth surface with positive koebner phenomenon.

Periungual wart: They occur around nails in nail folds. They can also occur beneath nails.

Plantar wart: They begin as sago grain papule which later develops into thick endophytic papules. They may have sloping sides with central depression .They can be divided into superficial mosaic warts (caused by HPV 2) and deep myrmecia wart (Inclusion wart caused by HPV 1)

Diagnosis:

Skin biopsy, PCR – most sensitive, gel electrophoresis, restriction endonuclease cleavage

Treatment:

Different types of warts may need different treatments depending on site, and treatments may need to be combined.[75]

Podophyllotoxin 0.5% solution, 0.15% cream, imiquimod 5% cream, sinecatechins 10% or 15% ointment, Cryotherapy, trichloroacetic acid (60- 90%), electrosurgery, scissor or shave excision, curettage, laser vaporization (CO2, PDL, Nd:YAG, Pulsed dye laser), surgical excision

3. BACTERIAL INFECTIONS

a) IMPETIGO:

Impetigo is a contagious superficial pyogenic infection of the skin.The most frequently isolated pathogen is *S. aureus*.[76] Two main clinical forms are recognized: Bullous and non-bullous impetigo.

Bullous impetigo:

The lesions are superficial bullae with very minimal surrounding erythema. They persist for few days and later rupture to form a thin honey coloured yellow crust. Sometimes, the bullae spread peripherally with central clearing, producing annular lesions (impetigo circinata). Face is the common site of involvement but any part of the body can be involved including palms and soles.

Non bullous impetigo:

It manifests as an erythematous macule following which a thin roofed vesiculopustule appears over it. The vesicle fluid is usually clear in the beginning, later becomes turbid in less than a day. The roof soon ruptures and seropurulent discharge dries up, forming a loosely adherent, yellow honey coloured crust.[77]

b) FOLLICULITIS:

It can be divided into superficial and deep folliculitis

Superficial folliculitis:

It occurs due to inflammation of terminal part or ostium of hair follicles of infective or non-infective origin. Non infective causes include occupational exposure to mineral oil or due to occlusive dressings and adhesive tapes. The most frequent infective cause is Staph. aureus. Lesions are characterized by dome shaped pustules or papules with a crusted surface, a hair or follicular orifice in the center and sometimes surrounding erythema.

Deep folliculitis:

It involves whole depth of the hair follicle with predilection to sites like beard area (sycosis barbae) and nape of neck (sycosis nuchae) caused by Staph aureus. The lesions are characterized by erythematous papules or papulopustules with a central hair. They usually heal with scars, with new lesions appearing around the old ones.[78]

c) Furunculosis:

In this disease, there is extended involvement of the hair follicle in the dermis and subcutaneous tissue including the perifollicular region (combination of folliculitis and perifolliculitis) and is caused by staphylococcus aureus. Furuncles occur commonly during adolescence and early adult age. A furuncle usually begins as a papule, later develops into an inflammatory nodule of 2 to 3 cm in diameter. In next few days the area becomes necrotic and discharges pus from a point at the follicular orifice. If several adjacent follicles are infected they may coalesce and form a larger nodule with multiple sieve like openings, known as a carbuncle.[79]

d) Cellulitis and erysipelas:

Cellulitis is an acute, subacute or chronic inflammation of loose connective tissue but mostly referred to inflammation of subcutaneous tissue with assumed or proven bacterial cause. Erysipelas is considered as a form of cellulitis with marked superficial inflammation, typically affecting the lower limbs and the face. Cellulitis and erysipelas can occasionally result in local necrosis and abscess formation. About one fourth of affected people have more than one episode of cellulitis within 3 years.[80] Erysipelas usually starts as a small area of redness which often gets unnoticed. In few days it enlarges in size associated with high fever. The skin is tense, erythematous and slightly elevated and later becomes brawny, indurated with peau d'orange appearance and spreads peripherally. Erysipelas differs from cellulitis in

having well demarcated borders. In acute cases vesicles or bullae can be found in the advancing margins.

Treatment:

Topical: Mupirocin**,** sodium fusidate**,** framycetin**,** neomycin**,** gentamicin

Systemic: Methicillin, nafcillin, cloxacillin, dicloxacillin, cephalosporins, erythromycin, cotrimoxazole

B. INFESTATIONS

1. PEDICULOSIS:

Pediculosis is caused by sucking lice of the order Anoplura. There are three types of lice which form the ectoparasitic fauna of man namely Pediculosis humanus var. capitis, the head louse; Pediculosis humanus var. corporis, the body louse; and Phthirus pubis, the pubic louse.

a) Pediculosis capitis:

Pediculosis capitis is more common in children, but occurs in adults also. Patients present with intense pruritus of the scalp and often have posterior cervical lymphadenopathy. Excoriations and small specks of louse dung are noted on the scalp. Secondary impetigo is also common. Lice may be identified when combing the hair. Nits are most commonly found in the retroauricular region. Peripilar keratin (Hair) casts are remnants of the inner root sheath that encircle hair shafts which are mistaken for nits. Females are more frequently infested than males and there is a decreasing incidence with increasing age. Overcrowding and poor hygiene are found to increase the incidence of pediculosis capitis significantly

Treatment:

Ulesfia(containing benzyl alcohol) – first neurotoxic FDA approved treatment for lice, permethrin, malathion 0.5%, lindane, dimethicone, spinosad, nit combing (Metal combs

better than plastic combs)[81]. natural remedies like coconut oil, anise oil, ylang ylang oil, tea tree oil, 5% lavender, peppermint, eucalyptus oil.

b) Pediculosis corporis:

Body lice infestations can involve thousands of mites, biting an average of 5 times per day. During feeding, after piercing the skin, body louse injects a salivary anticoagulant, and then sucks the blood meal into their digestive tract. Bites can produce a variety of skin lesions like erythematous macules, urticaria wheals with severe pruritus which is thought to be due to an allergic and/or inflammatory reaction to the louse saliva. Intense scratching of pruritic bites can result in skin excoriation and secondary bacterial infections.[82] There is also post inflammatory hyperpigmentation with excoriations on the upper back which is referred to as "Vagabond's disease"

Treatment:

Lice may live in clothing for 1 month without a blood meal. Discarding the cloth, if feasible is considered the best. Destruction of body lice can also be accomplished by laundering the cloth. Clothing placed in a dryer for 30 min at 65 degree C is reliably disinfected. Pressing the cloth with an iron is also effective. Permethrin spray or 1% malathion powder can also be used to reduce the risk of reinfestation.

c) Pthiriasis pubis:

Pubic lice infestation has a worldwide distribution with incidence directly correlating to sexual promiscuity and poor hygiene.

Clinical features:

Patient gives history of itching in the pubic region. Patient may also notice brown moving objects on the skin and hair close to the skin which are the lice. Secondary infection and eczematization makes diagnosis of phthiriasis difficult. Blue grey macules referred to as maculae caeruleae are seen on the lower abdomen and upper thighs, produced by altered

blood pigment or as a reaction to the louse's saliva. They are seen as yellowish brown specks clinging closely to the base of the hair with nits attached to the hair at an acute angle.

Treatment:

Gamma benzene hexa chloride, pyrethrins, benzyl benzoate, crotamiton.

2. SCABIES:

The causative agent is the scabies mite, *Sarcoptes scabiei var hominis* which is an obligate parasite that lives in burrowed tunnels in the stratum corneum. The female mite is about 400 microns in length and has a rounded body. It has four pairs of legs, the front two pairs end in "suckers" and the hind two pairs in long trailing bristles.[83]

In the skin, the mite survives on dissolved human tissue but does not feed on blood. The pathognomonic lesion, the burrows are of size 0.5-5mm present in the stratum corneum. The mite lives in the burrow for duration of 30 days. The female lays two-three eggs daily and the eggs hatch in about 3-4 days. The larva passes through the nymphal stage to the mature adult mite stage in 14-17 days. Only about 10% of the eggs develop into adults. The average mite in normal patient is usually11. However, in case of crusted scabies, the number of mites is numerous.The incubation period is 3-6 weeks for primary infestation, but may be as short as 1-3 days in reinfestation.

Risk factors:

Children, sexually active individuals, people with poor sensory perception due to diseases like leprosy and other immunocompromised states (post transplantation, human immunodeficiency virus (HIV) disease and old age). The other risk factors include overcrowding, young age, illiteracy, low socio economic status, poor housing, sharing of clothes and towels, poor personal hygiene

Clinical features:

Primary lesions are the first manifestation of the infestation and are typically characterized by small papules, vesicles and burrows. Secondary lesions are the result of rubbing and scratching, and sometimes they may be the only clinical manifestations of the disease which can manifest as excoriations, eczema, crusting (indicating secondary pyoderma), post inflammatory hyperpigmentation, erythroderma, prurigo nodularis. Burrows are pathognomonic lesions for scabies representing intraepidermal tunnel created by the moving female mite. They appear as serpiginous, grayish, thread like elevations in the superficial epidermis, ranging from 2-10 mm in length. The most common locations where scabies mite could be found include: web spaces of fingers, flexor aspect of wrists, elbows, axillae, periumbilical region, Scrotum (men), areolae (women)[83]

Treatment:

- Permethrin 5% cream , lindane (γ-benzene hexachloride), benzyl benzoate and 10% precipitated sulfur, crotamiton
- Ivermectin is usually given at a dose of 200 μg/kg.

Animal scabies: Zoonotic scabies and scab mites may affect humans who come in close contact with the animal(dogs, cats, horses, cattle, buffalo, pigs, camels, monkeys, sheep and goats). The reaction resembles scabies, but typically runs a self-limited course. Burrows are usually absent.

C. ECZEMATOUS DISORDERS

1. CONTACT DERMATITIS

Contact dermatitis can be subdivided on etiologic grounds into various types including the following:

- Allergic contact dermatitis
- Irritant contact dermatitis
- Photo contact dermatitis

a) ALLERGIC CONTACT DERMATITIS:

It was considered rare in children but the reports of this condition are increasing now with studies reporting incidence of 15.2% in adolescents.[84] In adolescent age group females have significantly higher rates of allergic contact dermatitis on the face which can be attributed to increased exposures to nickel in piercings and to preservative and fragrance chemicals in cosmetic products. [85,86]

Clinical features:

Usually skin involvement extends beyond the borders of the region exposed to the allergen. Edema is much more pronounced with allergic contact dermatitis than with irritant contact dermatitis, and vesicles occur more commonly. Clues to the allergen may be obtained by examining the anatomical regions involved like the scalp, face, lips, neck, trunk, axilla, hands, legs, genitals etc.

b) IRRITANT CONTACT DERMATITIS:

Irritant contact dermatitis is a condition caused by direct injury to the skin. An irritant is any agent capable of producing cell damage in any individual if applied for sufficient time and sufficient concentration. The exact prevalence of ICD in children is not known. Perianal dermatitis has been reported to have an overall incidence of 5%–20%.[87]

The clinical presentation depends on several factors, including properties and strength of the irritant, dose, duration of exposure, frequency of usage, environmental factors and skin susceptibility. The pathophysiology includes activation of the innate immune system and involves skin barrier disruption, release of proinflammatory mediators and cellular changes that directly recruit and activate T lymphocytes. The diagnosis of irritant contact dermatitis is usually clinical, and involves a comprehensive history and examination. Allergic contact dermatitis has to be excluded with patch testing. Recent advances in understanding the pathogenesis and clinical significance of ICD will lead to improved care for our patients.[88,89]

Clinical features:

Irritant contact dermatitis consists of a spectrum of disease with varied clinical manifestations ranging from mild dryness, redness, chapping to various types of eczematous dermatitis or acute burns. Severity of irritant contact dermatitis depends depends on type of exposure, vehicle and individual propensity. Moist, macerated and thin skin is less resistant to irritant effects than normal, dry and thick skin. Cumulative irritant contact dermatitis affects thin and exposed skin such as dorsal aspect of hands, finger web spaces, face and eyelids. [90]

c) PHOTOCONTACT DERMATITIS:

Irradiation of certain substances by light results in transformation of the substance into an allergen (photoallergic) or an irritant (phototoxic) which is usually wavelength specific for any individual substance. Dermatitis develops following exposure to ultraviolet A(UV A), UV B or white light. Photocontact dermatitis can also be caused by certain drugs or topical agents which can also be divided into phototoxic and photoallergic agents.

Common phototoxic agents:

Psoralen, tar, perfumes, textile dyes, sun barrier preparations, psoralens, nalidixic acid, doxycycline, sitafloxacin, sparfloxacin, ofloxacin, sulfonamides, 5 fluorouracil, vinblastine, amitriptyline, ibuprofen, amiodarone, quinidine, frusemide, hydrochlorthiazide, retinoids, atorvastatin, carbamazepine, voriconazole

Common photoallergic agents:

Sunscreen(Oxybenzone), fragrances, bithionol, chlorhexidine, diclofenac, ketoprofen, phenothiazines, piroxicam gel, benzocaine, coumarin derivatives, plants of compositae family, griseofulvin, voriconazole, itraconazole, quinolones, sulfonamides, ketoprofen, ibuprofen, phenothiazines, thiazides [91]

2. POMPHOLYX

Pompholyx or dyshidrotic eczema commonly affects palmoplantar skin.[92] Since eccrine sweat glands are abundant in palmoplantar skin, it had been suggested that there was a close relationship between the vesicles and these glands. The disease is considered to be a special type of eczema, with a pronounced spongiosis in regions with a thick epidermis and an even thicker overlying horny layer with intraepidermal spongiotic vesicle with no alteration in the acrosyringium of the sweat glands ,[93] which makes the term 'dyshidrosis' a misnomer.

There are two clinical types of presentation namely vesicular and bullous. Vesicular pompholyx is known as dyshidrotic eczema , whereas the bullous type is named cheiropodopompholyx. The patient can have burning, itching, increased sweating, with possibility of secondary bacterial infection , most commonly staphylococcal infection. The disease usually runs a chronic course even though aggravating factors are avoided. Possibility of a concentrated flux of inflammatory cytokines in sweat has been advocated as a reason for the disease. Hence, the use of antiperspirants may represent an adjunct treatment in refractory idiopathic pompholyx.[94] Recent data demonstrates that interruption of sweating leads to a stabilization of hand eczema during follow up, whereas disease treated with steroids alone showed total or partial relapses in half of the cases.

Treatment:

1. Topical steroids (Potent or very potent), topical tacrolimus, pimecrolimus, topical Bexarotene gel

2. Steroids, azathioprine, methotrexate, mycophenolate mofetil, cyclosporine, retinoid, biologics, botulinum toxin, antihistamines, phototherapy, radiotherapy, iontophoresis[95]

3. PITYRIASIS ALBA

Pityriasis alba is a relatively common skin disorder in children and young adults characterized by ill defined, scaly, faintly erythematous patches which subside to leave areas of hypopigmentation which later resolves to become normal skin.[96] Lesions progress through 3 clinical stages:

- Papular (scaling) erythematous
- Papular (scaling) hypochromic
- Smooth hypochromic

Pathophysiology:

The melanosomes are fewer and smaller, while their distribution pattern in the keratinocytes is normal. There is no disturbance in melanosomal transfer to keratinocytes. Hypopigmentation may be primarily due to reduced number of active melanocytes and a decrease in number and size of melanosomes in the affected skin.

Clinical features:

Initial lesions of pityriasis alba are mildly erythematous, but usually goes unnoticed. The most common presentation is asymptomatic (or mildly pruritic), hypopigmented lesions on the face.[97] There may be history of atopic dermatitis, allergic rhinitis, or asthma, sometimes also among family members. The hypopigmentation often becomes more apparent with sun exposure (and darkening of the surrounding skin) during the summer and spring.[98,99]

Physical examination reveals multiple oval or round hypopigmented macules, patches, sometimes papules or plaques with indistinct margin.[100] There may be mild erythema and/or scaling. The lesions are mostly from four to 20 in number, measure 0.5 cm - 5 cm in size, and are distributed mostly on the face, neck, upper arms, and upper trunk. The lesions can be sometimes very extensive.[101] Signs of atopic dermatitis like eczematous rash in the popliteal or antecubital fossa, cheilitis, nipple eczema and infra-auricular fissuring.[102]

Uncommon variants include pigmenting type and extensive pityriasis alba. The classical type (hypopigmented) is more common in children.

Treatment:

Hydrocortisone, desonide, emollients, tacrolimus ointment 0.1%, pimecrolimus cream 1%

D. PAPULOSQUAMOUS DISORDERS

1. LICHEN PLANUS(LP):

Lichen planus is a cell mediated immune response of unknown origin. It may be found with other diseases of altered immunity, such as ulcerative colitis, alopecia areata, lichen sclerosus, vitiligo, morphoea, dermatomyositis and myasthenia gravis. It is found to be associated with hepatitis C virus infection, chronic active hepatitis and primary biliary cirrhosis.[103]

Etiology:

It is found to be influenced by genetic and exogenous factors. The familial form of the disease is common among HLA haplotypes –B7, Aw19, -B18 and Cw8. There is evidence that HLA-DQ1 may be associated with resistance to the occurrence of LP. Dental amalgam materials (mercury) and gold are known to cause oral lichenoid reactions.

Pathogenesis:

Activation of the cell mediated immune response leading to keratinocyte apoptosis is the key event in the pathogenesis of LP and it involves 3 stages: LP specific antigen recognition, cytotoxic lymphocyte activation and keratinocyte apoptosis.[104]

Classification:

(i) Based on morphology: Hypertrophic, atrophic, guttate, annular, linear, vesiculobullous, follicular, ulcerative(erosive), lichen planus pigmentosus

(ii) Based on site involved: Mucosal(oral, genital), palmoplantar, nail, scalp, inverse

(iii) Special forms: Actinic, lichen planus pemphigoides

Diagnosis:

Histopathological examination:

- Hyperkeratosis, irregular acanthosis and focal thickening in the granular layer
- Degenerative apoptotic keratinocytes (colloid or civatte bodies) in the lower epidermis and especially in papillary dermis.
- Interface dermatitis
- Band like lymphocytic infiltrate in the upper dermis

Direct immunofluorescence (DIF) study reveals globular deposits of immunoglobulin M (IgM) occasionally IgG and IgA, fibrin and complement (C3) along with apoptotic keratinocytes. [105]

Treatment:

(i)Cutaneous LP:

Very potent corticosteroids and potent corticosteroids.[106]

Prednisolone, acitretin 30 mg per day for 8 weeks, PUVA or UVB

(ii) Oral lichen planus:

Topical steroids, soluble prednisolone tablets, 5mg in 15 ml water for mouthwash 3 times daily for widespread oral LP, oral steroids (severe erosive LP), topical retinoids,

Other drugs:

Azathioprine, mycophenolate mofetil, methotrexate, ciclosporin, topical ciclosporin.[107]

2. PITYRIASIS RUBRA PILARIS (PRP):

It is a chronic papulosquamous disorder characterized by small follicular papules, disseminated yellowish pink scaly patches and often, solid confluent palmoplantar hyperkeratosis.

It is divided into 6 types:

1. Classical adult type

2. Atypical adult tpe
3. Classic juvenile type
4. Circumscribed juvenile
5. Atypical juvenile
6. HIV related PRP

Clinical features:

It is characterized by salmon red or orange red scaly plaques with prominent follicular papules with well circumscribed borders which may involve the entire body with islands of sparing. This is often referred to as nutmeg grater appearance. Most patients have palmoplantar keratoderma with orange hue.[108]

Nail changes are distal yellow-brown discolouration, subungual hyperkeratosis, longitudinal ridging, nail plate thickening and splinter hemorrhages.

Patient may also complain of irritation and pain in the mouth. Mucous membrane changes include lacy white plaques, diffuse white patch over buccal mucosa, grayish white papules and plaques, erythema and erosions. [109]

Histopathology:

The skin shows hyperkeratosis with follicular plugging, alternating ortho- and parakeratosis and the follicles show parakeratosis in the perifollicular shoulder. There may be patchy or confluent hypergranulosis. Dermal capillaries are dilated but not tortuous. There is also sparse lymphocytic dermal infiltrate.

Management:

1. Topical steroids, topical vitamin D3 analogues, topical retinoids – tazarotene (Juvenile circumscribed pityriasis rubra pilaris), etretinate, [110] emollients, NB-UVB
2. Extracorporeal phototherapy
3. Acitretin

4. Isotretinoin
5. Monoclonal antibodies – infliximab, adalimumab, ustekinumab

E. PIGMENTARY DISORDERS

1. VITILIGO:

Vitiligo is a common form of localized depigmentation. It is an acquired condition resulting from progressive loss of melanocytes. Vitiligo affects 0.5 to 2% of global population with average age of onset of 20 years. The extent of vitiligo is associated with QOL impairment in children and adolescents, especially self-consciousness.[111] According to a recent Vitiligo Global Issue Consensus Conference, the term 'vitiligo' is used as an umbrella term for all non-segmental forms of vitiligo including acrofacial, ,mucosal, generalized, universal, mixed and other rare variants of vitiligo.

Segmental vitiligo (uni-, bi- or pleurisegemntal) is classified separately. Sometimes localized lesions that are not segmental and have not evolved into non-segmental vitiligo after 1-2 years, are considered as undetermined/unclassified vitiligo.

Various theories have been suggested for the etiology of vitiligo like autoimmune theory, oxidative stress, antibodies to normal human melanocytes, self-destruction theory of Lerner, melanocytorrhagy, neuropeptide Y.

Clinical features:

The most common form of vitiligo is an amelanotic macule or patch surrounded by normal skin. The amelanotic macules are chalk or milk white in colour and are well circumscribed. The lesions are round, oval or linear shape. The lesions can be localized or generalized, with the generalized form being more common which may be symmetrical or asymmetrical. [112,113]

Treatment:

Topical steroids, topical calcineurin inhibitors, phototherapy, grafting methods, depigmenting agents (Skin bleaching with laser therapy, cryotherapy or creams like 20% monobenzylether of hydroquinone) [114]

2. EPHELIDES(FRECKLES):

Freckles are usually tanned macules on the light exposed skin, predominantly benign which may be seen in association with systemic disease.

Pathophysiology:

Individuals who are susceptible to freckles have somatic mutations in epidermal melanocytes which promote melanogenesis. Melanocyte number is normal but on UV-B exposure the dopa reaction is increased, thereby leading to production of larger melanosomes. [115]

Clinical features:

Freckles usually present during childhood as scattered pigmented macules ranging from 1-5 mm with uniform pigmentation mostly on sun exposed areas, which fade during winter. They are usually asymptomatic. [116]

Treatment:

- Avoidance of sun exposure, sunscreen, topical depigmenting agents, chemical peels, cryotherapy, Q switched Nd YAG laser.

F. OTHER DISEASES

1. ALOPECIA AREATA: (PELADE)

Alopecia areata is characterized by rapid and complete loss of hair manifesting as round or oval patches usually on scalp, beard, eyebrows, eyelashes and less commonly on other hairy regions of the body.[117] It may be associated with thyroid disease, diabetes, atopic dermatitis, down syndrome, SLE.

Clinical features:

Alopecia areata usually presents as circumscribed round or oval patches with loss of hair with few resting hairs within the patches. Early in the course of the disease there may be sparing of gray hair. In 10 % of long standing and extensive cases the nails may develop uniform pits with transverse and longitudinal lines. Other associated nail findings include trachyonychia, onychomadesis, red lunula. [118]

Complete loss of scalp hair is referred to as alopecia totalis, while complete loss of all hair in the body is called alopecia universalis. In most cases hair loss is patchy in distribution. Hair loss along temporal and occipital region of scalp is termed as ophiasis and on entire scalp except this area is called sisaipho.

Treatment:[119]

- Corticosteroids: intralesional, topical and systemic. [120]
- Topical immunotherapy, phototherapy, anthralin, immunomodulators, topical minoxidil, methotrexate, sulfasalazine, excimer laser.

2. URTICARIA

Urticaria is defined as wheals consisting of (i) central swelling of different sizes with or without surrounding erythema, (ii) pruritus or occasional burning sensations and (iii) skin returning to normal appearance usually within 1-24 hours.

The term chronic urticaria [CU] is considered if the disease persists for 6 weeks or longer.[121] If no underlying cause can be identified, the term chronic idiopathic urticaria (CIU) is usually used.[122] CIU can be associated with the development of angioedema. The term CIU is used interchangeably with chronic spontaneous urticaria (CSU). Approximately 0.1% to 0.3% of children are affected by CU. [123]

Pathophysiology:

Urticaria results from release of histamine, leukotriene c4, bradykinin, prostaglandin D2 and vasoactive substances from mast cells and basophils in dermis. The release of these substances leads to extravasation of fluid into the dermis. Histamine is the ligand for H1 and H2 histamine receptors. Activation of H1 receptors leads to increased capillary permeability while activation of H2 histamine receptors leads to arteriolar and venule vasodilation. [124,125]

Clinical features:

Urticaria is characterized by raised palpable wheals which can be linear, annular (circular) or arcuate(serpiginous) which are blanchable. These skin lesions are usually transient and migratory often separated by normal skin but may also coalesce rapidly to form large areas of erythematous, raised lesions that blanch with pressure. [123 126]

Causes:

Mostly they are idiopathic. Potential causes of acute urticarial include infections, food, drugs, blood products, contactants, autoimmune disorders, exercise, stress, cold, sun exposure.[127,128129130131132133]

Treatment:

- H1 receptor antogonists, systemic corticosteroids, tricyclic antidepressants: doxepin, H2 receptor antagonists.

3. KERATOSIS PILARIS:

Keratosis pilaris (KP) is a common inherited disorder of follicular hyperkeratosis which is characterized by small, folliculocentric keratotic papules which may have surrounding erythema. There is a stippled appearance in the skin resembling gooseflesh imparted by small papules. [134]

Pathophysiology:

There is usually an excess formation of keratin which produces the goose-bump texture to the skin. The individual follicular papules are caused by a hair which is unable to reach the surface and gets trapped beneath the keratin debris.

Clinical features:

The disease usually affects extensor aspects of upper arms, upper legs and gluteal region. On palpation the lesions reveal a fine, sandpaper like texture to the region. Some of the papules may be slightly erythematous or may have an accompanying light red halo suggestive of inflammation. Patients are usually asymptomatic, while occasionally few patients complain of pruritus. The diseases associated with KP include keratosis pilaris atrophicans, erythromelanosis follicularis faciei et colli and ichthyosis vulgaris.

Treatment:

- General measures- for preventing skin dryness by using mild soap-less cleansers and lubrication, [135] lactic acid preparations, alpha hydroxy acid lotions, topical steroid, salicylic acid, retinoic acid products such as tazarotene, tretinoin and adapalene, tacrolimus, pimecrolimus, photodynamic therapy (PDT), pulsed dye laser
- Surgical: extraction of keratin plugs or trapped coiled hairs, chemical peels, dermabrasion and microdermabrasion.

WHY WE NEED TO MEASURE QUALITY OF LIFE?

There are many reasons why it is necessary for dermatologists to assess quality of life in various skin diseases. They are a proof that dermatological conditions which might appear less serious for people are equally serious from patient's point of view compared to serious systemic diseases. This evidence may be helpful politically and has also been used to strengthen political arguments relating to development of various dermatology services. At the current situation very few clinicians formally assess the QoL of their patients. However

few clinicians take into account their perception of the QoL of their patients in taking critical clinical decisions, like starting methotrexate in psoriasis or isotretinoin in acne. [136]

THE DERMATOLOGY LIFE QUALITY INDEX (DLQI):

The DLQI consists of 10 questions with simple tick-box answers scored from 0 to 3.[137] The mean answer time is taken as two minutes. The DLQI has been described in at least 36 skin diseases in more than 130 articles and published abstracts, in 17 countries and 21 languages.[138]

The common dermatological diseases that affect QoL are acne, psoriasis, vitiligo, dermatophytosis, scabies, seborrheic dermatitis, ichthyosis, hyperhidrosis, neurofibromatosis, tuberous sclerosis and urticaria. Martin et al. observed that the QoL in acne vulgaris correlated with the severity and the QoL scores worsen with increasing severity. [139]

Excessive sweating is often uncontrollable and embarrassing and may lead to several physiological concerns like cold and clammy hands, dehydration and secondary bacterial and fungal infections, all of which affect the quality of life. In patients with ichthyosis, the skin is pruriginous, uncomfortable and in addition, due to chronic treatment there is significant impact on quality of life. Adolescents with psoriasis have shown increased rates of comorbid mental disorders like anxiety and depression, range of psychosocial problems, poor self-esteem, social stigmatization, physical limitations and suicidal ideations.[140] In patients with scabies and urticaria, their schooling and household works get disturbed, poor concentration in studies, anxiety and confusion.

AIMS & OBJECTIVES

1. To study the patterns of skin diseases among adolescents visiting dermatology OPD and adolescent clinic in pediatric OPD

2. To assess the effect of skin diseases on quality of life of adolescents in age group 16 – 19 years

3. To study the prevalence of steroid abuse among adolescents

MATERIALS AND METHODS

a) Study design: Prospective observational study

b) Study area: Dermatology OPD in Tirunelveli medical college

Adolescent clinic in pediatric OPD in Tirunelveli medical college

c) Study period: January 2018 to December 2018

c) Study subjects: Adolescents (10 to 19 years) attending dermatology OPD and adolescent clinic in pediatric OPD

d) Sample size: As much as possible

d) Study tools: Patient's proforma

DERMATOLOGY LIFE QUALITY INDEX questionnaire (**License ID CUQoL1470**) (License has been obtained from author for use in English and 10 Indian languages)

d)Inclusion criteria:

- Adolescents (10 -19 yrs.) attending dermatology OPD and adolescent clinic in pediatric OPD in Tirunelveli medical college with any dermatological complaints
- Adolescents of 16-19 years of age will be included for quality of life assessment
- Newly diagnosed and old cases

e)Exclusion criteria:

- Unwilling to give consent
- Mentally challenged

f) Study Procedure:

After obtaining clearance from Institutional Ethical Committee, study subjects were recruited according to the above criteria after obtaining Informed consent from patients or guardians. The dermatological findings in them were clinically assessed according to standard book descriptions and criteria. In case of uncertainty in diagnosis, appropriate

investigations were done for diagnostic confirmation. Details about family history of similar complaints, treatment history and inappropriate use of topical steroids were obtained and assessed and recorded in predesigned proforma. “DERMATOLOGY LIFE QUALITY INDEX” questionnaire was given to the participants to assess the effect of skin diseases on Quality of Life. Following that, scores were added and effect of their skin disease on their quality of life was assessed. Photographs of lesions were taken and appropriate investigations and treatment were given.

g) Statistical analysis:

The data collected were entered in Ms Excel and analysed by SPSS software. Summarization and presentation of data were done using proportions and percentage. P value less than 0.05 ($p< 0.05$) was considered significant.

h) Ethical concern:

There were no ethical issues. Ethical clearance was obtained from Institutional ethical committee before conducting the study.

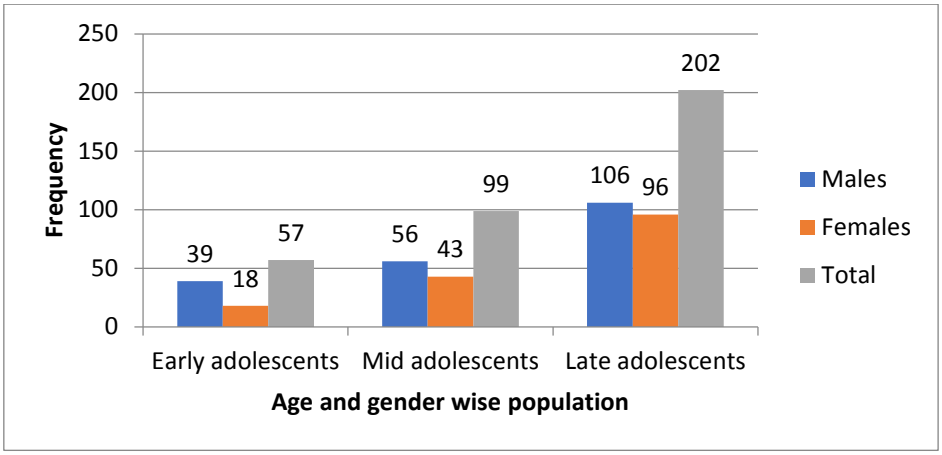
RESULTS

The total number of new cases who attended Dermatology OPD (including referrals from other departments) from January 2018 to December 2018 was 15,200 out of which 313 were adolescents (2.1%). The total number of new adolescent cases who attended adolescent clinic in pediatric OPD was 300 (during the same period), out of which 45 patients had dermatological complaints (15%). Hence out of total 15,500 cases, 358 cases were adolescents (2.3%).

AGE & GENDERWISE POPULATION OF ADOLESCENTS:

Among the 358 patients in the adolescent age group (10- 19 years), 15.9 % belonged to early adolescent age group (10-12 years), 27.6 % to mid adolescent age group (13-15 years) and 56.4% to late adolescent age group (16-19 years). Out of the 358 adolescents, 201 were males (56.14%) and 157 were females (43.85%). **(Figure 1)**

Figure 1: Age & gender wise population of adolescents



EDUCATIONAL PROFILE OF ADOLESCENTS:

Among the total 358 cases, none of the adolescents were uneducated. A total of 323 cases (90.2%; M: 177, F: 146) were studying, in which 259 (72.3%; M: 147, F: 112) were in school and 64(17.9%; M: 30, F: 34) were in college and 35 (9.8%; M: 24, F: 11) were working. Of the total 259 cases who were studying in school, 22 were in primary school, 82 in middle school, 57 in high school and 98 in higher secondary. All working adolescents (n=35) belonged to the late adolescent age group. **(Table 1)**

Table 1: Educational profile of adolescents (n=358)

SL NO	EDUCATION	MALES	FEMALES	N (%)
1	**UNEDUCATED**	0	0	0
2	**STUDYING**	177	146	323 (90.2%)
(i)	SCHOOL:	147	112	259 (72.3%)
	Primary school (1st to 5th std)	12	10	22 (6.1%)
	Middle school (6th to 8th std)	50	32	82 (22.9%)
	High school (9th and 10th std)	31	26	57 (15.9%)
	Higher secondary (11th and 12th std)	54	44	98 (27.4%)
(ii)	COLLEGE:	30	34	64(17.9%)
3	**WORKING**	24	11	35 (9.8 %)
	Total	201	157	358

PATTERNS OF ADOLESCENT DERMATOSES IN THE STUDY POPULATION:

Out of the total cases, infections were found in 39.1% (140 cases), followed by infestations (16.2%), appendageal disorders (13.1 %), dermatitis (8.1%), papulosquamous disorders(3.9%), keratinisation disorders (3.9 %), urticaria (2.7%), naevi (2.2%), pigmentary disorders (1.9%), disorders of dermal connective tissue (1.3%), hamartoneoplastic syndromes (1.1%), metabolic disorders (0.5%), connective tissue disorders (0.5%), cutaneous photosensitivity diseases (0.27%) and psychocutaneous disorders (0.27%). The miscellaneous

group in this study included xerosis (0.5%), insect bite allergy (0.5%), plantar fissures (0.5%), pyogenic granuloma (0.27%), naxos syndrome (90.5%), corn foot/callosity (0.27%), paederus dermatitis (1.1%), cheilitis (0.27%), infected meningocele (0.27%). **(Table 2) (Figure 2)**

Table 2: Patterns of adolescent dermatoses in the study population (n=358)

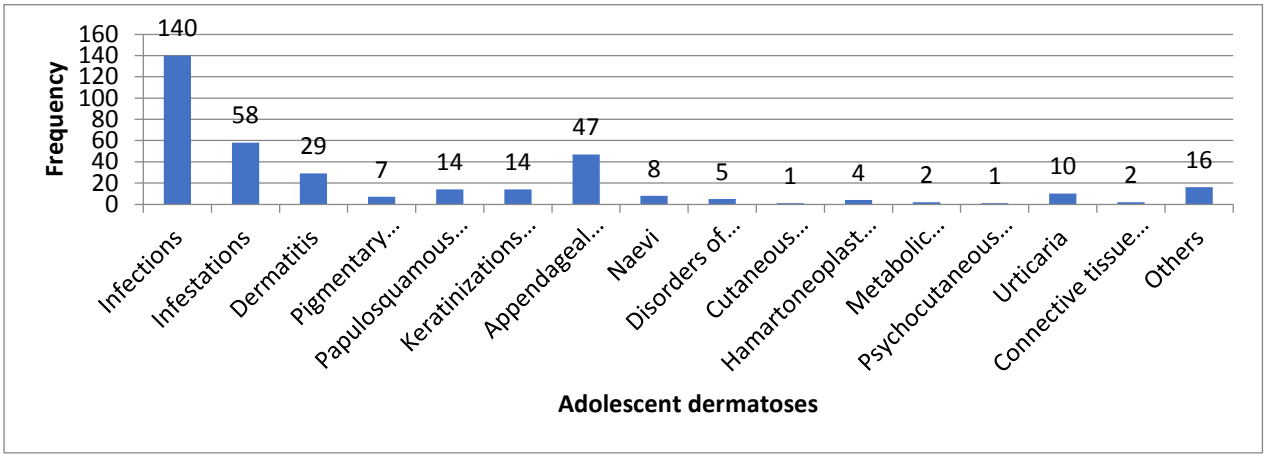
SL NO	DERMATOSES	MALE (%)	FEMALE (%)	N (%)
1.	**INFECTIONS**			**140 (39.1%)**
a)	Bacterial			28 (7.8%)
	(i) Pyoderma	14	8	22
	(ii)Pitted keratolysis	0	1	1
	(iii) Hansen's disease	4	0	4
	(iv) Tuberculosis verrucosa cutis	1	0	1
b)	Fungal			88 (24%)
	(i)Dermatophytosis	42	24	66
	(ii) Candidiasis	4	0	4
	(iii)Pityriasis versicolor	9	9	18
c)	Viral			24 (6.7%)
	(i)Warts	0	5	5
	(ii)Varicella	2	2	4
	(iii)Molluscum contagiosum	2	2	4
	(iv)Herpes simplex infection	0	3	3
	(v)Herpes zoster	0	1	1
	(vi)Pityriasis rosea	4	3	7
2.	**INFESTATIONS(PARASITIC)**			**58 (16.2%)**
	(i)Scabies	33	15	48

	(ii)Pediculosis	2	8	10
3.	**DERMATITIS**			**29 (8.1%)**
	(i)Contact eczema	6	8	14
	(ii)Pompholyx	1	0	1
	(iii)Seborrheic dermatitis	3	7	10
	(iv)Pityriasis alba	1	1	2
	(v)Perioral dermatitis	0	1	1
	(vi)Lichen simplex chronicus	1	0	1
4.	**PIGMENTARY DISORDERS**			**7 (1.9%)**
	(i)Vitiligo	2	2	4
	(ii)Dermatopathia pigmentosa reticularis	3	0	3
5.	**PAPULOSQUAMOUS DISORDERS**			**14 (3.9%)**
	(i)Psoriasis	2	9	11
	(ii)Lichen planus	2	1	3
6.	**KERATINISATION DISORDERS**			**14 (3.9%)**
	(i)Ichthyosis	2	3	5
	- Lamellar ichthyosis	1	0	1
	-Ichthyosis vulgaris	1	2	3
	-Erythrokeratoderma variabilis	0	1	1
	(ii)Palmoplantar keratoderma	1	0	1
	(iii)Phrynoderma	3	2	5
	(iv)Porokeratosis	1	0	1
	(v)Keratosis pilaris	2	0	2

7.	**APPENDAGEAL DISORDERS**			**47(13.1%)**
a)	**Acne**	**21**	**14**	**35(9.7%)**
b)	**Nail disorders**	**2**	**3**	**5 (1.3%)**
	(i)Paronychia	1	3	4
	(ii)Onychomycosis	1	0	1
c)	**Sweat gland disorders**	**3**	**1**	**4 (1.1%)**
	(i)Hyperhidrosis	1	0	1
	(ii)Bromhidrosis	0	1	1
	(iii)Miliaria	2	0	2
d)	**Hair disorders**	**1**	**2**	**3 (0.8%)**
	(i)Alopecia areata	1	2	3(0.8%)
8.	**NAEVI**			**8 (2.2%)**
	(i)Naevus of ota	0	1	1
	(ii)Linear epidermal naevus	1	1	2
	(iii)Naevus depigmentosus	2	0	2
	(iv)Naevus comedonicus	0	1	1
	(v)Compound naevus	2	0	2
9.	**DISORDERS OF DERMAL CONNECTIVE TISSUE**			**5 (1.3%)**
	(i)Keloid	1	0	1
	(ii)Cutis laxa	0	1	1
	(iii)Pseudoxanthoma elasticum	1	1	2
	(iv)Linear focal elastosis	1	0	1

10.	**CUTANEOUS PHOTOSENSITIVITY DISEASES**			
	(i)Polymorphic light eruption (PMLE)	0	1	**1 (0.27%)**
11.	**HAMARTONEOPLASTIC SYNDROMES**			**4 (1.1%)**
	(i)Neurofibromatosis	0	2	2
	(ii)Tuberous sclerosis	1	1	2
12.	**METABOLIC DISORDERS**			
	(i)Porphyria cutanea tarda	1	1	**2 (0.5%)**
13.	**PSYCHOCUTANEOUS DISORDERS**			
	(i)Prurigo simplex	0	1	**1 (0.27%)**
14.	**URTICARIA**	6	4	**10 (2.7%)**
15.	**CONNECTIVE TISSUE DISORDERS**			
	(i) Morphoea	1	1	**2 (0.5%)**
16.	**OTHERS**			**16 (4.4%)**
	(i)Xerosis	1	1	2
	(ii)Insect bite allergy	1	1	2
	(iii)Plantar fissures	2	0	2
	(iv)Pyogenic granuloma	1	0	1
	(v)Naxos syndrome	1	1	2
	(vi)Corn foot/ callosity	0	1	1
	(vii)Paederus dermatitis	3	1	4
	(viii)Cheilitis	0	1	1
	(ix)Infected meningocele	0	1	1

Fig 2: Patterns of adolescent dermatoses in the study population (n=358)



CLASSIFICATION OF DISEASES BASED ON MODE OF ACQUISITION:

Among the 358 cases, 27 were inherited and the remaining 331 were acquired. In inherited group, keratinisation disorders were seen in 8 cases followed by naevi(6), hamartoneoplastic syndromes (4), pigmentary disorders (3), disorders of dermal connective tissue(3), metabolic disorders (1) and infected meningocele (1). Among the acquired disorders, infections were seen in 140 cases followed by infestations(58), appendageal disorders(47), dermatitis (29), papulosquamous disorders (14), urticaria (10) ,keratinisation disorders (8), pigmentary disorders (4), compound nevi(2), disorders of dermal connective tissue (2), connective tissue disorders (2), cutaneous photosensitivity disorders (1) and psychocutaneous disorders (1).

The diseases which were inherited are depicted in **table 3**.

Table 3: Classification of diseases based on inherited or acquired

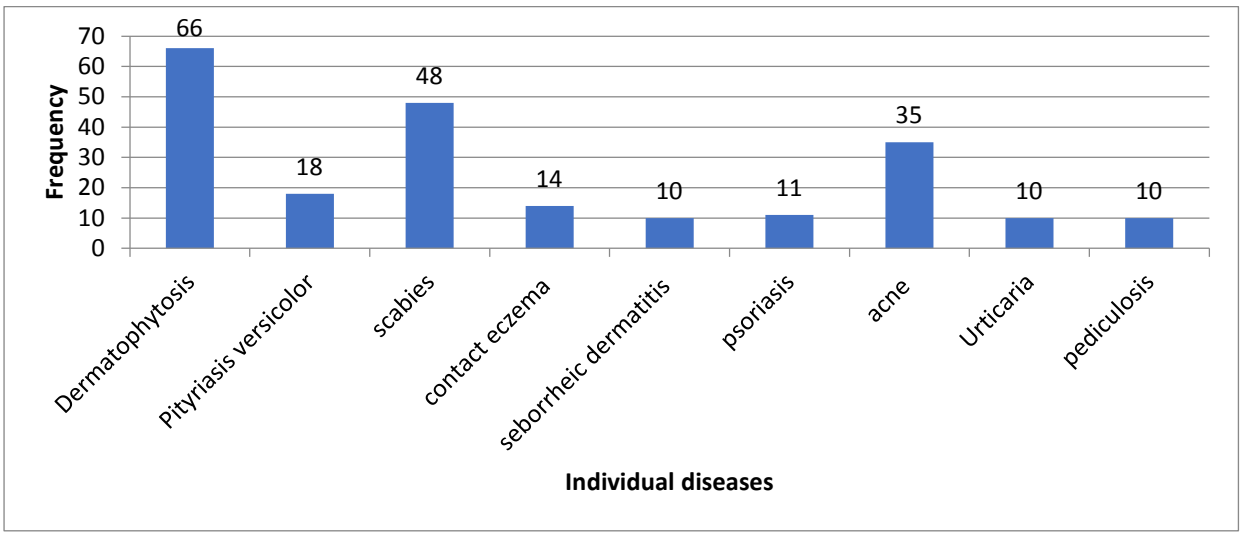
SL NO	MALES	FEMALES	TOTAL
Inherited	**13**	**14**	**27**
1.Pigmentary disorders			
2.Keratinisation disorders	3	0	3
3.Naevi	4	4	8
4. Disorders of dermal connective tissue	3	3	6
5.Hamartoneoplastic syndromes	1	2	3
6.Metabolic disorders	1	3	4
7.Infected meningocele	1	1	1
	0	1	1

Acquired	**188**	**143**	**331**
1. Infections			
2.Infestations	82	58	140
3.Dermatitis	35	23	58
4. Pigmentary disorders	12	17	29
5. Papulosquamous disorders	2	2	4
6. Keratinisation disorders	4	10	14
7.Appendageal disorders	6	2	8
8. Compound naevi	27	20	47
9. Disorders of dermal connective tissue	2	0	2
10. Cutaneous photosensitivity disorders	2	0	2
11. Psychocutaneous disorders	0	1	1
12. Urticaria	0	1	1
13. Connective tissue disorders	6	4	10
14. Others	1	1	2
	9	4	13
TOTAL	**201**	**157**	**358**

MOST COMMON INDIVIDUAL DERMATOSES IN ADOLESCENT POPULATION:

Overall, the most common dermatoses were dermatophytoses(18%), followed by scabies (13.4%), acne (9.7%), pityriasis versicolor (5%), contact eczema (3.9%), psoriasis (3%), seborrheic dermatitis (2.7%), urticaria (2.7%) and pediculosis(2.7%). **(Figure 3)**

Figure 3: Common diseases among the adolescent dermatoses



COMMON DISEASES AMONG THE DISEASE GROUPS:

Among the infections and infestations, fungal infections were the most common (24%), followed by parasitic infestations (16.2%), bacterial (7.8%) and viral (6.7%). Most common individual disease was dermatophytosis among the fungal infections (75%), pityriasis rosea among viral infections (29.1%), scabies among infestations (82.7%) and pyoderma among bacterial infections (78.5%).

In appendageal disorders group, acne was the most common (9.7%) followed by nail disorders (1.3%), sweat gland disorders (1.1%) and hair disorders(0.8%). Paronychia (4 cases), miliaria (2 cases) and alopecia areata (3 cases) were the most common diseases in nail, sweat gland and hair disorders respectively.

In dermatitis group, contact eczema was the most common disease which constituted 48.2% of the total dermatitis followed by seborrheic dermatitis (34.4%), pityriasis alba (6.8%), pompholyx (3.4%), perioral dermatitis (3.4%) and lichen simplex chronicus (3.4%). Vitiligo was the most common among pigmentary disorders (57.1%) followed by dermatopathia pigmentosa reticularis (42.9%). Psoriasis was the most common among papulosquamous disorders (78.5%) followed by lichen planus (21.4%).

Among keratinisation disorders, most common diseases were phrynoderma(35.7%) and ichthyosis (35.7%) followed by keratosis pilaris (14.2%), palmoplantar keratoderma (7.1%) and porokeratosis (7.1%).

In naevi group, most common diseases observed were linear epidermal naevus (25%), naevus depigmentosus (25%), compound naevus (25%) followed by naevus of ota (12.5%) and naevus comedonicus (12.5%). Among disorders of dermal connective tissue, most common disease was pseudoxanthoma elasticum (40%) followed by keloid(20%), cutis laxa (20%) and linear focal elastoses (20%).

AGE GROUP WISE DISTRIBUTION OF ADOLESCENT DERMATOSES:

The most common diseases observed in early adolescent age group were infestations(15) followed by fungal infections(9), bacterial infections(6), viral infections(4), dermatitis(4), papulosquamous disease(4) and naevi(4).

The most common diseases in mid adolescent age group were infestations (20) and fungal infections (20) followed by appendageal disorders (13), bacterial infections (8), viral infections(7), dermatitis(7), urticaria (5) and keratinisation disorders(5).

The most common diseases in late adolescent age group were fungal infections(59) followed by appendageal disorders(33), infestations(23), dermatitis(18), bacterial infections(14), viral infections(13), papulosquamous disorders(7) and keratinisation disorders(6). **(Table 4)**

Table 4: Age group wise distribution of adolescent dermatoses:

DIAGNOSIS	**10-12 YEARS**			**13-15 YEARS**			**16-19 YEARS**		
	Male	**Female**	Total	**Male**	**Female**	Total	**Male**	**Female**	Total
Fungal infection	6	3	9	12	8	20	36	23	59
Appendageal disorders	0	1	1	8	5	13	19	14	33
Infestations	9	6	15	10	10	20	14	9	23
Dermatitis	2	2	4	2	5	7	8	10	18
Bacterial infection	4	2	6	6	2	8	9	5	14
Viral infection	2	2	4	3	4	7	3	10	13
Papulosquamous disorders	1	3	4	1	2	3	2	5	7
Keratinisation disorders	2	1	3	3	2	5	4	2	6
Pigmentary disorders	0	1	1	2	0	2	3	1	4
Hamartoneoplastic syndromes	0	0	0	0	0	0	1	3	4

Urticaria	0	2	2	4	1	5	2	1	3
Disorders of dermal connective tissue	0	2	2	2	0	2	1	0	1
Naevi	4	0	4	1	2	3	0	1	1
Photosensitivity disorders (PMLE)	0	0	0	0	1	1	0	0	0
Connective tissue disorders (Morphoea)	0	0	0	0	0	0	2	0	2
Metabolic disorders(Porphyria cutanea tarda)	0	0	0	0	1	1	1	0	1
Psychocutaneous disorder (Prurigo simplex)	0	0	0	0	0	0	0	1	1
Others	0	2	2	1	1	2	7	5	12

GENDER WISE DISTRIBUTION OF ADOLESCENT DERMATOSES:

Considering the sex distribution of various dermatoses, in males, infections (40.7%) were the most common, followed by infestations (17.4%), appendageal disorders (13.4%), dermatitis (5.9%), keratinisation disorders (4.9%), pigmentary disorders (2.4%), naevi (2.4%), papulosquamous disorders (1.9%), disorders of connective tissue (1.4%), connective tissue disorders (0.9%), hamartoneoplastic syndromes (0.5%) and metabolic disorders (0.5%).

In females, a different pattern was obtained with infections (36.9%) being the most common dermatoses, followed by infestations (14.6%), appendageal disorders (12.7 %), dermatitis (10.8%), papulosquamous disorders (6.3%), keratinisation disorders (2.5%), naevi (1.9%), hamartoneoplastic syndromes (1.9%), pigmentary disorder (1.2%), disorders of dermal connective tissue (1.2%), cutaneous photosensitivity diseases (0.6%), metabolic disorders (0.6%) and psychocutaneous disorders (0.6%). **(Table 5)**

Table 5: Gender wise distribution of adolescent dermatoses

DERMATOSES	MALES (%) (N=201)	FEMALES (%) (N=157)
Infections	82 (40.7%)	58 (36.9%)
Infestations	35 (17.4%)	23 (14.6%)
Dermatitis	12 (5.9%)	17 (10.8%)
Pigmentary disorder	5 (2.4%)	2 (1.2%)
Papulosquamous disorder	4 (1.9%)	10 (6.3%)
Keratinisation disorder	10 (4.9%)	4 (2.5%)
Appendageal disorders	27 (13.4%)	20 (12.7%)
Naevi	5 (2.4%)	3 (1.9%)
Disorders of dermal connective tissue	3 (1.4%)	2 (1.2%)
Cutaneous photosensitivity diseases	0	1 (0.6%)
Connective tissue disorders	2 (0.9%)	0
Hamartoneoplastic syndromes	1 (0.5%)	3 (1.9%)
Metabolic disorders	1 (0.5%)	1 (0.6 %)
Psychocutaneous disorders	0	1 (0.6%)
Urticaria	6	4

FAMILY HISTORY IN ADOLESCENTS:

Out of the total 358 cases, 111 patients (31%) had positive family history of similar skin complaints and the remaining (69 %) did not have. The diseases with positive family history were dermatophytosis (40), scabies (38), pyoderma (14), pediculosis (7), varicella (3), warts (2), molluscum contagiosum (2), naxos syndrome (2), ichthyosis vulgaris (2) and erythrokeratoderma variabilis (1). **(Table 6)**

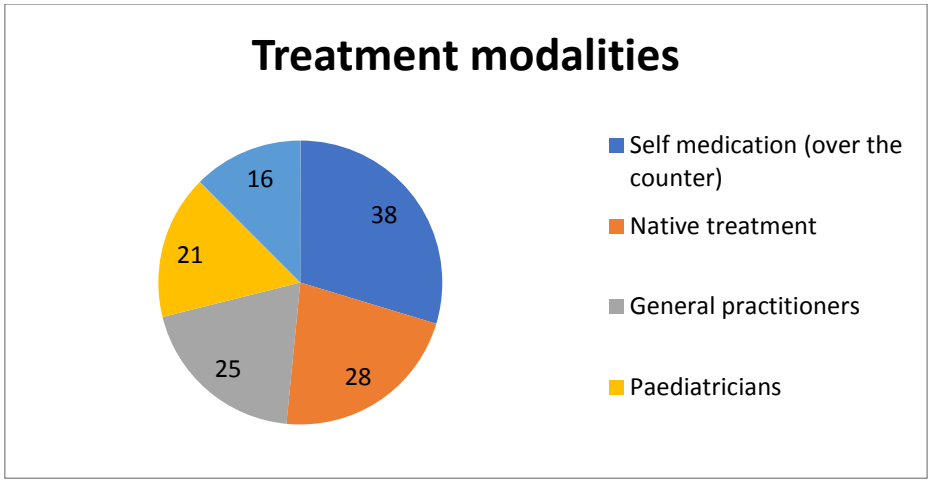
Table 6: Diseases with positive family history

SL NO	DISEASES (n=111)	N
1	Pyoderma	14
2	Dermatophytosis	40
3	Warts	2
4	Varicella	3
5	Molluscum contagiosum	2
6	Scabies	38
7	Pediculosis	7
8	Naxos syndrome	2
9	Erythrokeratoderma variabilis	1
10	Ichthyosis vulgaris	2
	TOTAL	**111**

TREATMENT HISTORY IN ADOLESCENTS:

A total of 128 adolescents (35.75%) had prior treatment history of which 29.6% patients took self-medication (over the counter), 21.8% patients took native treatment, 19.5% consulted General Practitioners, 16.4% consulted Paediatricians and 12.5% consulted Dermatologists while the remaining 230 (64.25%) patients did not have any treatment history. Mean latency period between the clinical problem and treatment seeking was 23.5 days. **(Figure 4)**

Fig 4 : Treatment history in adolescents



USE OF INAPPROPRIATE OVER THE COUNTER TOPICAL STEROIDS IN ADOLESCENT PATIENTS:

Among the 358 adolescents, 49 patients (13.6%) had used inappropriate over the counter topical steroids for their skin ailments before the actual treatment while the remaining 309 patients (86.3%) did not use over the counter topical steroids.**(Figure 5)** The indications for which patients used over the counter topical steroids were dermatophytosis (30, 61.2%), skin lightening (8, 16.3%), pyoderma (5, 10.2%), acne (4, 8.1%) and scabies (2, 4%) in which females were commonly found to have used topical steroids for skin lightening and acne. Males used topical steroids more than females for dermatophytosis and there was no gender wise difference in usage of topical steroids for pyoderma and scabies **(Table 7)**

Fig 5: Use of inappropriate over the counter topical steroids in adolescent patients (n=358)

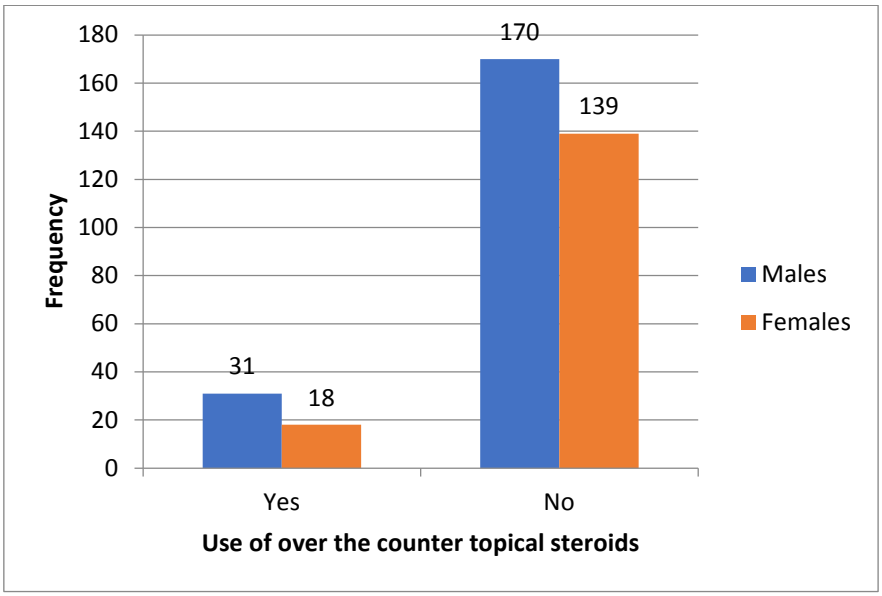


Table 7: Specific indications for the use of topical steroids:

INDICATION	MALES	FEMALES	N (%)
Dermatophytosis	18	12	30 (61.2%)
Skin lightening	2	6	8 (16.3%)
Pyoderma	3	3	5 (10.2%)
Acne	1	3	4 (8.1%)
Scabies	1	1	2 (4%)
TOTAL			**49**

EFFECT ON QUALITY OF LIFE AND DOMAINS AFFECTED:

Out of the 202 adolescents (16 to 19 years age group), quality of life was not affected in 31 adolescents (15.3%; M: 22, F: 9) and was affected in remaining 171 adolescents (84.6%; M: 90, F: 81). Most of the patients(38.1%) had small effect of their diseases on quality of life(as measured by DLQI score) followed by moderate effect in 36.1%, very large effect in 9.9% and extremely large effect in 0.4% of patients. DLQI scores compared between males and females did not show any statistical significance (p=0.262) as shown in **Figure 6**

The most common domain affected was symptoms and feelings in 90.5 % of patients, followed by daily activities (47.5 %), leisure (47 %), work and school (24.75 %), treatment (35.6 %) and personal relationships (13.3 %). **(Figure 7)**

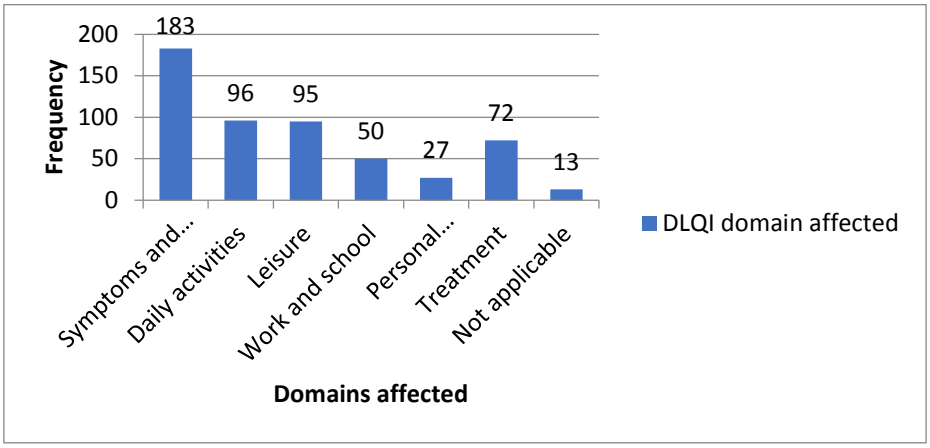
"Symptoms and feelings" domain was assessed based on intensity of itching, pain, soreness, embarrassment, "Daily activities" domain by interference with shopping, household works and wearing clothes, "Leisure" domain by effect on sports, social and leisure activities, "Work and school" domain by interference with work and studies, "Personal relationships" domain by problems with partners, close friends or relatives and sexual difficulties. "Treatment "domain by problems faced due to the treatment modality received.

Out of 183 patients who had "symptoms and feelings " domain affected, 113 suffered from itching, 32 from pain and 38 felt embarrassed due to their skin condition. Among 96 patients who had "daily activities "domain affected, 48 had interference in the clothes they wore, 33 felt that their skin condition interfered with their household works and 15 felt uncomfortable going out for shopping. In 95 patients who had "leisure" domain affected, majority (67) felt their skin condition interfered with their sports while 28 felt their social activities were disturbed. Out of 50 patients who had "work and school" domain affected, majority (41) felt their skin condition disturbed their education in school and 9 felt that their skin condition interfered with their occupation. There were a total of 27 patients in whom "personal relationships" domain was affected and all of them faced problems with friends or relatives because of their skin condition. Among 72 patients who had "treatment " domain affected, 50 felt their schooling or occupation was affected because of treatment of their skin diseases, 22 felt that the treatment was time consuming for them.

Table 8: DLQI score

DLQI score	Males	Females	Total	P value
No effect	22	9	31	0.262
Small effect	41	36	77	
Moderate effect	37	36	73	
Very large effect	12	8	20	
Extremely large effect	0	1	1	

Fig 6: Domains affected



DISEASES WITH HIGH EFFECT ON QUALITY OF LIFE:

The diseases with the high mean DLQI scores (in late adolescent age group) were hyperhidrosis(10.6) followed by dermatophytosis (10.5 ± 4.6), scabies (10.3 ± 3.2), pediculosis (8.9 ± 1.2), pyoderma (8.2 ± 2.2), acne (8.1 ± 4.1), tuberous sclerosis(7.6 ± 1.2), seborrheic dermatitis (7.5 ± 2.3), psoriasis (7.5 ± 1.9), ichthyosis (7.2), neurofibromatosis (7.2 ±1.1), urticaria (6.9 ± 1.7), prurigo simplex (6.8), vitiligo (6.1), herpes simplex infections (5.4 ± 1.1). **(Table 8)**

"Symptoms and feelings" was the most common domain affected in all diseases with high mean DLQI score. In addition to "symptoms and feelings" domain, "daily activities"

domain was also commonly affected in scabies, psoriasis and hyperhidrosis. “Work and school” was the most common domain affected in pediculosis, acne, neurofibromatosis and tuberous sclerosis along with “symptoms and feelings” domain.

Table 9: Diseases with high mean DLQI score

DERMATOSES	**M**	**F**	**TOTAL**	**MEAN DLQI SCORE**	**DOMAINS COMMONLY AFFECTED**
1. **Infections:**					
Pyoderma	7	3	10	8.2 ± 2.2	Symptoms and feeelings
Dermatophytosis	28	16	44	10.5 ± 4.6	Symptoms and feelings
Herpes simplex infection	0	2	2	5.4 ± 1.1	Symptoms and feelings
2.Infestations:					
Scabies	14	7	21	10.3 ± 3.2	Symptoms and feelings, daily activities
Pediculosis	0	2	2	8.9 ± 1.2	Symptoms and feelings, work and school
3.Dermatitis:					
Seborrheic dermatitis	5	4	9	7.5 ± 2.3	Symptoms and feelings
4.Pigmentary disorders:					
Vitiligo	1	0	1	6.1	Symptoms and feelings
5.Papulosquamous disorders:					
Psoriasis	2	4	6	7.5 ± 1.9	Symptoms and feelings and daily activities
6.Keratinisation disorders:					
Ichthyosis	1	0	1	7.2	Symptoms and feelings

7. Appendageal disorders:					
Acne	14	11	25	8.1 ± 4.1	Symptoms and feelings, work and school
Hyperhidrosis	1	0	1	10.6	Daily activities
8.Hamartoneoplastic syndromes:					
Neurofibromatosis	0	2	2	7.2 ± 1.1	Symptoms and feelings, work and school
Tuberous sclerosis	1	1	2	7.6 ± 1.2	Symptoms and feelings, work and school
9.Psychocutaneous disorders:					
Prurigo simplex	0	1	1	6.8	Symptoms and feelings
10. Urticaria	2	1	3	6.9 ± 1.7	Symptoms and feelings

DISCUSSION

Adolescence is a phase of growth that is seen in humans after childhood and before adult hood between 10 years to 19 years of life. Adolescence is one of the most rapid phases of human development. Today, 1.2 billion adolescents stand at the crossroads between childhood and the adult world. Around 243 million of them live in India. During adolescence, there are changes in gonadal growth and development, changes in body composition, sexual development and growth spurt.

During adolescence there are marked structural and physiological changes in the pilosebaceous unit leading to an increase in sebaceous and apocrine secretion, as well as the development of androgen-dependent hair growth.[141] In addition to the gonadal hormones (testosterone and estradiol), the adrenal androgen DHEA also plays a role in the development of secondary sexual characteristics, including pubic (girls/boys) and facial hair (boys)[142]
Skin conditions among adolescents include acne vulgaris, seborrheic dermatitis, superficial fungal infections, hyperhidrosis and bromhidrosis, psoriasis, atopic dermatitis.[143]

This is especially true in the modern day life where adolescents are more conscious about their physical appearance both in males and females which greatly influence self-esteem and behavior.[144] Assessment of health related quality of life (HRQoL) allows the patient's to express their opinions about the level of health they are actually in.

There are many studies in literature across the globe describing patterns of dermatoses among pediatric population like studies done by Jawade et al.,- South Gujarat(hospital based study), Weber et al.,- Brazil(hospital based study), Nagarajan et al.,- Manipur(hospital based study), Jain et al.,- New delhi, Reddy et al.- Kerala(hospital based study), Sharma et al., - Punjab(hospital based study)[145, 146–150] mostly up to 14 years of age, while there is paucity of data about adolescent population. In India there are only few studies which included entire adolescent population (10-19 years) as in studies done by Kalaiselvan et al.,(South India-

school based survey), Hmar et al. (Manipur- hospital based study). Other studies outside India were done by Ayanlowo et al.,(Nigeria- up to 18 years of age, record based study) and by Ferreira et al (Brazil – up to 19 years of age- record based study). And there are only two studies which assessed quality of life affected by skin diseases, one by Jagannadh et al., which assessed quality of life affected by skin diseases, but only in patients of age 16 and above and another by Weber et al., in Brazil, but only in patients 5 to 16 years. Hence our study is the first of its kind to assess effect of skin diseases on quality of life exclusively in adolescents along with treatment seeking behavior and steroid abuse which have not been explored in other studies.

AGE & GENDERWISE POPULATION OF ADOLESCENTS:

In our study most of the patients belonged to the late adolescent age group (56.4%) followed by mid adolescent age group (27.6%) and early adolescent age group (15.9%) which was similar to the study done by Hmar et al., who also reported higher proportion of cases in late adolescent age group (36.64%) followed by mid adolescent age group (36.3%) and early adolescent age group (27 %). [143] In our study, males constituted 56.14% and females constituted 43.85% of the study population. Sharma et al.,[145] found a similar male preponderance in their study whereas as Kalaiselvan et al.,[151] and Nadia et al.,[152] reported a female preponderance in their study. Children with advancing age tend to become more conscious about physical appearance and gain maturity to express their issues with parents and friends and hence we could find more patients in late adolescent age groups.

EDUCATIONAL PROFILE OF ADOLESCENTS:

Of the total study population, 90.3% of adolescents were studying and remaining 9.8% were working (all belonging to late adolescent age group) and none of them were uneducated which implies that the educational profile is on a higher trend in our locality.

PATTERNS OF ADOLESCENT DERMATOSES IN STUDY POPULATION:

In our study infections were found in 39.1% of cases, followed by infestations (16.2%), appendageal disorders (13.1 %), dermatitis (8.1%), papulosquamous disorders(3.9%), keratinisation disorders (3.9 %), urticaria (2.7%), naevi (2.2%), pigmentary disorders (1.9%), disorders of dermal connective tissue (1.3%), hamartoneoplastic syndromes (1.1%), metabolic disorders (0.5%), connective tissue disorders (0.5%), cutaneous photosensitivity diseases (0.27%) and psychocutaneous disorders (0.27%). The miscellaneous group in this study included xerosis (0.5%), insect bite allergy (0.5%), plantar fissures (0.5%), pyogenic granuloma (0.27%), naxos syndrome (90.5%), corn foot/callosity (0.27%), paederus dermatitis (1.1%), cheilitis (0.27%), infected meningocele (0.27%). This was almost similar to the study done by Ayanlowo et al., in which the most common dermatoses were infections (23.1%) followed by dermatitis (14.6%), appendageal disorders (19.7%), papulosquamous disorders (8.7%), infestations (8.1%), urticaria (5.5%) and pigmentary disorders (4.6%) except for lower prevalence of infestations in their study.[153]

This distribution was almost similar to the study conducted by Hmar et al.,[143] in Manipur which also reported infections as the most common dermatoses followed by sebaceous gland disorders, eczema, infestations and urticaria and study conducted by Ayanlowo et al.,[153] in Nigeria which also reported that infections were the most common followed by eczema, acne, papulosquamous disorders and infestations both differing in lesser prevalence of infestations. It was discordant with the study conducted by Kalaiselvan et al., [151] in South India which observed that acne vulgaris was the most common dermatoses followed by pediculosis, PMLE, fungal infections and scabies. It can be observed that only the study done by Kalaiselvan et al.,[151] was school based study and it showed gross variation in order of common dermatoses which warrants more school based studies on adolescents to be done to analyse the variation in results.

INFECTIONS:

The most common dermatoses in our study were infections, observed in 39.1% of the study population. This is in accordance with the study conducted in Punjab by Sharma et al., which reported infections to be the most common dermatoses(30.8%).[145] Another study in Tunisia by Nadia et al., also reported infections as the predominant dermatoses in the adolescent age group representing 37.7% of all dermatoses.[152]

Whereas in a study conducted at a school in south India by Kalaiselvan and Karthikeyan,[151] infections were the fourth common dermatoses among the adolescents. Among the infections, fungal infections were the most common (24%), followed by bacterial (7.8%) and viral (6.7%). A similar result was seen in the study conducted by Sharma et al., in which fungal infections were the most common (6.9%) followed by bacterial infections(5.6%)[145] and study conducted by Hmar et al., in which fungal infections were the most common(13.6%) followed by bacterial (6.3%) and viral infections (5.7%).

In the study conducted by Nadia et al., viral infections were the predominant group (15.7%), followed by fungal (13.5%) and bacterial infections (10.8%).[152] The prevalence of parasitic infestations in our study was 16.2 % (second most common) which was similar (17.03%) to the study conducted by Hmar et al., in north east India.[143] Scabies(13.4%) was the most common among parasitic infestations followed by pediculosis(2.7%). But in study conducted by Kalaiselvan et al.,(school based study) pediculosis was found to be more common than scabies which reflects the difference in patterns observed in hospital and community settings.

This could be attributed to the possibility of contact with cases in schools and neighbourhood. Most common individual disease was dermatophytosis among the fungal infections (75%), pityriasis rosea among viral infections (29.1%), scabies among infestations (82.7%) and pyoderma among bacterial infections (78.5%).

Lack of health awareness, ignorance regarding the disease, failure to understand the importance of personal hygiene, cleanliness, overcrowding, increased exposure and outdoor activity could have contributed to the higher prevalence of bacterial, viral, fungal infections and parasitic infestations in our study. In order to prevent the occurrence of infections, the importance of personal hygiene must be emphasized among general population. General advice like regular bathing, avoidance of tight clothing, sharing of towels and soaps should be given. The environment must be kept dry and bright to avoid fungal infections as the fungi live in dark and damp places. Importance of healthy diet in preventing skin diseases should be conveyed to the patients.

APPENDAGEAL DISORDERS:

In appendageal disorders group, acne was the most common (9.7%) followed by nail disorders (1.3%), sweat gland disorders (1.1%) and hair disorders (0.8%). Paronychia (4 cases), miliaria (2 cases) and alopecia areata (3 cases) were the most common diseases in nail, sweat gland and hair disorders respectively.

This was in accordance with the study conducted by Henshaw et al., in which acne vulgaris was the most common among the appendageal disorders and study conducted by Ferreira et al., in south eastern Brazil in which acne was observed in 9.9% of adolescents.[154] While other studies showed littler higher prevalence of acne vulgaris as in the study conducted by Kalaiselvan et al., (16.1%),[151] Sharma et al.,(12.5%)[145] and Yeung et al(14.6%).[155]

In our study nail disorders were seen in 1.3% of adolescents with the most common disease being paronychia, observed in 4 patients(1.1%). It was in accordance with the study conducted by Hmar et al.,[143] and almost similar to the study conducted by Henshaw et al.,[156] in which the prevalence was observed to be 1.09% and 0.5 % respectively. The most common nail disorder observed in study conducted by Henshaw et al.,[156] was nail dystrophy.

The prevalence of sweat gland disorders in our study was 1.1 %. It was in accordance with the study conducted by Sharma et al.,[145] with prevalence of 1.4 %. The most common sweat gland disorder observed in our study was Miliaria(0.5%) followed by hyperhidrosis and bromhidrosis(0.2%). The most common sweat gland disorder observed in the study conducted by Henshaw et al.,[156] was also miliaria but reported a higher prevalence of 6.5%. The prevalence of hyperhidrosis in the study by Adar et al., was 0.6-1% [157] which is almost similar to that observed in our study.

Hair disorders were observed in 0.8 % of the study population and all the cases were alopecia areata. This is similar to the study done by Hmar et al., which reported a prevalence of 1.4%.[143]

In our study acne was the third most common disease while it was the second most common disease(22.72%) in study conducted by Hmar et al.,[143] and the most common disease [158]in study conducted by Jagannadh et al.

Androgens play a major role in development of acne with sebaceous glands being the pecific target. Sebaceous glands are active at birth due to the influence of maternal hormones and remain inactive till 9-12 years of age. Due to the influence of maternal hormones acne can occur in neonatal age group also. At puberty, there is a spurt of hormones stimulating sebaceous glands to secrete sebum. Hence adolescents are more prone for acne vulgaris which explains the higher prevalence of acne in our study population.

DERMATITIS:

The prevalence of dermatitis in our study was 8.1%. In contrast other studies reported higher incidence of dermatitis. In the study conducted by Sharma et al.,[145] dermatitis was seen in 27.3 % of population while the prevalence was 17.45 % in study conducted by Hmar et al.[143]

In our study among the dermatitis group, most common disease was contact eczema(3.9%) followed by seborrheic dermatitis (2.7%) , pityriasis alba (0.5%), perioral dermatitis (0.2%), lichen simplex chronicus (0.2%) and pompholyx (0.2%) which differed from the study conducted by Sharma et al., in which seborrheic dermatitis was the most common among dermatitis(8.1%) followed by contact eczema (6.1%), pityriasis alba (4.9%) and atopic dermatitis (3.4%).

Common environmental allergens like soaps, shampoos, wool, nylon, footwear, jewels and sand are potential sources of contact eczema. Regular use of moisturizers and avoidance of allergens can help in preventing recurrences.

PIGMENTARY DISORDERS:

The prevalence of pigmentary disorders in our study was 1.9% (7 patients). Vitiligo was the most common among pigmentary disorders(1.1%) constituting 57.1 % of the pigmentary disorders followed by Dermatopathia pigmentosa reticularis(0.8%) constituting 14.2 % of the pigmentary disorders. This was in accordance with the study conducted by Hmar et al., who also reported 1.9% prevalence of pigmentary disorders.

Other study conducted by Sharma et al., reported higher prevalence (6.1%) of pigmentary disorders. Pinto et al.,[159] in Connecticut found that the most common pigmentary disorders in adolescents were vitiligo and nevus depigmentosus. Another study by Sanfillippo et al.,[160] in USA also found that vitiligo was the most common pigmentary disorder in adolescents.

Vitiligo is found to occur in 50 % of cases before 20 years of age.[161] Since diseases like naevus depigmentosus/anemicus, pityriasis alba, seborrheic eczema, pityriasis versicolor, post inflammatory leukoderma mimic vitiligo, proper diagnosis may help alleviating the symptoms and prevent stigma in this vulnerable age group.

PAPULOSQUAMOUS DISORDERS:

The prevalence of papulosquamous disorders in our study was 3.9%. It was similar to the study conducted by Ayanlowo et al.,[153] in which papulosquamous disorders were observed in 2.3 % of the adolescents while in contrary study conducted by Hmar et al., showed a lower prevalence of psoriasis (1.74%).[143] Among the papulosquamous disorders, the most common disease was psoriasis (3%) followed by lichen planus (0.8%). While in the study conducted in United kingdom by Gelfand et al.,[162] psoriasis was observed in 1.3 % of adolescents and study conducted by Sharma et al., showed a prevalence of 0.4%.

Adolescents with psoriasis deal with a disfiguring and lifelong disease which can permanently impair their psychological development. They must be explained that psoriasis does not have a permanent cure, and hence the main goal of treatment is to establish disease control and prolonged periods of remission between flares.

KERATINISATION DISORDERS:

The prevalence of keratinisation disorders in our study was found to be 3.9 % which was higher than study conducted by Henshaw et al., with a prevalence of 1.7%. The most common diseases in this group are Phrynoderma (1.3%) and ichthyosis (1.3%) followed by keratosis pilaris (0.5%), palmoplantar keratoderma (0.2%) and porokeratosis (0.2%). While the most common disease observed in this group in the study by Henshaw et al., was Keratosis pilaris (0.9%) followed by ichthyosis (0.5%), phrynoderma (0.4%) and palmoplantar keratoderma(0.2%). [156]

The diseases observed under the ichthyosis group were ichthyosis vulgaris (3), lamellar ichthyosis (1) and erythrokeratoderma variabilis (1).

The 1.3% prevalence of phrynoderma in our study population has given us an opportunity to find out associated nutritional disorders like Vitamin (Vit) A, Vit B-complex, Vit E and Essential fatty acid (EFA) deficiency as well as protein-calorie malnutrition among

the population. [163] Hence it is important for clinicians to know other skin and extracutaneous manifestations of nutritional deficiencies for prompt diagnosis and treatment and referrals if needed. Patients with ichthyosis should be advised about the chronicity of illness and importance of moisturisers in alleviating the symptoms.

NAEVI:

Naevi disorders were found to be in 2.2% of the total adolescent population. The most common nevi were nevus depigmentosus, compound nevus and linear epidermal nevus constituting 0.5% of the total population each, followed by nevus of ota (0.2%) and nevus comedonicus(0.2%). The study done by Hmar et al.,[143] reported a lower prevalence of nevi in 0.5% of the study population and in another study conducted by Ayanlowo et al.,[153] it was observed in 0.3% of the population. Naevi like naevus depigmentosus has to be differentiated from Hansen's disease for preventing unnecessary stigma and fear among adolescents and other naevus disorders are of major cosmetic concern for adolescents. Hence appropriate treatment modalities must be offered for adolescents.

DISORDERS OF DERMAL CONNECTIVE TISSUE:

In our study, disorders of dermal connective tissue were seen in 1.3% of the total adolescent population with the most common being pseudoxanthoma elasticum (0.5%) followed by keloid, cutis laxa and linear focal elastoses with 0.2% each. The prevalence of pseudoxanthoma elasticum was found to be 1 in 56000.[164] In studies conducted by Ayanlowo et al., and Henshaw et al., keloids were observed in 0.4% and 3.1% of the adolescent population. [153] [156]

CUTANEOUS PHOTOSENSITIVITY DISEASES:

In our study polymorphic light eruption (PMLE) was observed in 0.27 % of the study population. In a study conducted by Sharma Lata et al., which included both children and adults, prevalence of PMLE was estimated to be 0.56%. [165] In patients with chronic course

with acute exacerbations with tendency for skin changes to persist between exacerbations, genodermatoses and metabolic disorders should be considered.

HAMARTONEOPLASTIC SYNDROMES:

In our study hamartoneoplastic syndromes were observed in 4 patients (1.1%) equally shared by neurofibromatosis and tuberous sclerosis (0.55% each). This was similar to the study conducted by Ayanlowo et al., in which neurofibromatosis and tuberous sclerosis were observed in 0.5% and 0.2 % respectively. [153] The clinical presentations of tuberous sclerosis varies with age. In ante- or perinatal period only cardiac or cerebral lesions can be detected. Infants develop early epilepsy type West syndrome. In children aged 2 to 10, neurological involvement is common (epilepsy, intellectual disability, autism). The forms of the adolescent are similar to those of the adult, thus must be screened for possible renal or pulmonary involvement in parallel with the neurological follow-up. [166]

URTICARIA:

In our study urticaria was observed in 10 patients (2.7%). While other studies reported higher prevalence of urticaria as observed in the study conducted by Ayanlowo et al., (6 %)[153] and study conducted by Hmar et al.,(4.5%) .[143] Children with chronic urticaria often have increased "bad school performance" as compared to healthy children. It was found in studies that after 7 years, 96% of children were free of urticaria, as compared to adults of whom at least 20% remain symptomatic after 10 years.[126]

CONNECTIVE TISSUE DISORDERS:

Morphoea was the only connective tissue disorder observed in our study (2 patients, 0.5%) which was in accordance with the study conducted by Ayanlowo et al., (0.1%).

Other dermatoses observed in our study include porphyria(0.5%), prurigo simplex (0.27%), xerosis (0.5%), insect bite allergy (0.5%), plantar fissures (0.5%), pyogenic granuloma

(0.27%), naxos syndrome (90.5%), corn foot/callosity (0.27%), paederus dermatitis (1.1%), cheilitis (0.27%), meningocele (0.27%).

CLASSIFICATION OF DISEASES BASED ON MODE OF ACQUISITION:

Among the 358 cases, 27 were inherited and the remaining 331 were acquired. In inherited group, keratinisation disorders were the most common (8 cases) followed by naevi(6), hamartoneoplastic syndromes (4), pigmentary disorders (3), disorders of dermal connective tissue(3), metabolic disorders (1) and infected meningocele (1). Among the acquired disorders, infections were the most common (140 cases) followed by infestations(58), appendageal disorders(47), dermatitis (29), papulosquamous disorders (14), urticaria (10). There was no much difference in gender wise distribution of inherited disorders (M: 13, F: 14) while males (188) outnumbered females (143) in acquired disorders.

AGE GROUP WISE DISTRIBUTION OF ADOLESCENT DERMATOSES:

The most common diseases observed in early adolescent age group were infestations(15) followed by fungal infections(9), bacterial infections(6), viral infections(4), dermatitis (4), papulosquamous disorders(4) and naevi(4).

The most common diseases in mid adolescent age group were infestations(20) and fungal infections(20) followed by appendageal disorders (13), bacterial infections(8), viral infections(7) dermatitis (7), urticaria(5) and keratinisation disorders(5).

The most common diseases in late adolescent age group were fungal infections(59) followed by appendageal disorders(33), infestations(23), dermatitis (18), bacterial infections(14), viral infections (13), papulosquamous disorders (7) and keratinisation disorders(6).

It was almost similar to the study done by Hmar et al., which reported higher prevalence of infections followed by infestations, eczema and sebaceous gland disorders in

early adolescent age group, infections followed by sebaceous gland disorders, eczema and infestations in mid and late adolescent age group.[143]

GENDERWISE DISTRIBUTION OF ADOLESCENT DERMATOSES:

Considering the genderwise distribution of various dermatoses, there was no much difference in distribution of dermatoses among males and females, as the most common diseases (infections followed by infestations, appendageal disorders and dermatitis) were the same in both the genders.

FAMILY HISTORY IN ADOLESCENTS:

A total of 111 patients (31%) had positive family history of similar skin complaints and the remaining (69 %) did not have. Dermatophytosis was most commonly found to have positive family history (40 cases) followed by scabies (38), pyoderma (14), pediculosis (7), varicella (3), warts (2), molluscum contagiosum (2), naxos syndrome (2), ichthyosis vulgaris (2) and erythrokeratoderma variabilis (1). This emphasizes the importance of screening the family members in infections, infestations and genodermatoses, as most often treating the patient alone might not be sufficient. Knowing about family history in genodermatoses will give us a clue to diagnosis and help us to identify the mode of inheritance.

TREATMENT HISTORY:

A total of 128 adolescents (35.75%) had prior treatment history. Most of the patients (29.6%) took self-medication (over the counter) while 21.8% patients took native treatment, 19.5% consulted General Practitioners, 16.4% consulted Paediatricians and 12.5% consulted Dermatologists while the remaining 230 (64.25%) patients did not have any treatment history. While in the study conducted by Mahar et al., majority used drugs from friends/family followed by pharmacist, homeopathic/ayurvedic doctors, self-use, general physician/other specialist, dermatologist and paramedical staff.

This shows that inspite of delivering good quality speciality services in tertiary care hospital, people are reluctant to utilize those services which can be attributed to factors like ignorance, transportation difficulties, lack of trust in government institutions and easy availability of over the counter drugs. According to study conducted by Corrêa-Fissmer et al., prevalence of self-medication ranged from 6.0 to 45.0%.[167] Self-medication usually occurs in the form of reuse of previous prescriptions, sharing medications with family and friends due to household stocks, and the advice from sales personnel in retail establishments. Easy access to most of the drugs in pharmacies along with drug advertisements encourages self-medication. Mean latency period between the clinical problem and treatment seeking was 23.5 days.

STEROID ABUSE:

In our study inappropriate use of topical steroids were seen in 49 patients (13.6%). This is in accordance with the study conducted in New Delhi by Mahar et al., in which prevalence of steroid abuse was found to be 11.77%.[168] While a study done in Saudi Arabia by Hawsawi et al., reported a higher prevalence of 22.7%.[169]

The most common conditions with inappropriate steroid use were dermatophytosis (30; 61.2%) followed by skin lightening (8; 16.3%), pyoderma (5; 10.2%), acne (4; 8.1%) and scabies (2; 4%) in which females were commonly found to have used topical steroids for skin lightening and acne. Males used topical steroids more than females for dermatophytosis and there was no gender wise difference in usage of topical steroids for pyoderma and scabies. This was in accordance with the study conducted by Mahar et al.,[168] in which the most common indication for topical steroids usage was also fungal infections(38.4%), however the other common indications in that study were facial acne(29.2%), lightening of skin colour(8.4%), bacterial and viral infections(3.6%) which differed slightly from our study. It also differed from the study conducted by Dey et al., which the most common

indications were skin lightening (50.39%) followed by melasma and suntan (25.85%), mild acne(17.94%), dermatophytosis (14.77%), mild facial dryness (7.91%), scabies (3.95%), pyoderma (2.9%), pediculosis capitis (2.11%)[170]

EFFECT OF DERMATOSES ON QUALITY OF LIFE:

Out of the 202 adolescents (16 to 19 years age group), quality of life was not affected in 31 adolescents (15.3%; M: 22, F: 9) and was affected in remaining 171 adolescents (84.6%; M: 90, F: 81). Most of the patients(37.43%) had small effect of their diseases on quality of life(as measured by DLQI score) followed by moderate effect in 36.03 %, very large effect in 10.34% and extremely large effect in 0.56% of patients. DLQI scores compared between males and females did not show any statistical significance (p=0.262).

The most common domain affected was “symptoms and feelings” in 82.4% of patients, followed by “daily activities” (13.9%), “leisure” (10.8%), “work and school” (4.7%), “treatment” (4.1%) and “personal relationships” (1.3%). Isolated “symptoms and feelings” domain involvement was seen in 27 cases but it was found to be commonly involved along with other domains in 156 cases.

INDIVIDUAL COMPONENTS AFFECTED IN DOMAINS:

Out of 183 patients who had **“symptoms and feelings “**domain affected, 113 suffered from itching(diseases commonly affected: scabies, dermatophytosis, pediculosis, seborrheic dermatitis, pyoderma, contact eczema), 32 from pain (diseases commonly affected: pyoderma, paronychia, herpes labialis, herpes zoster, plantar fissures) and 38 felt embarrassed (diseases commonly affected: acne, scabies, dermatophytosis, psoriasis, vitiligo, hyperhidrosis) due to their skin condition. Dermatophytosis, acne and seborrheic dermatitis were the common diseases in which there was isolated involvement of “symptoms and feelings” domain. Dermatophytosis, scabies, pediculosis, acne, seborrheic dermatitis and

contact eczema were the common diseases in which “symptoms and feelings” domain was affected along with other domains.

Among 96 patients who had **“daily activities “**domain affected, 48 had interference in the clothes they wore (diseases commonly affected: pyoderma, dermatophytosis, scabies, contact eczema, psoriasis) , 33 felt that their skin condition interfered with their household works(pyoderma, herpes zoster, scabies, hyperhidrosis, urticaria) and 15 felt uncomfortable going out for shopping(acne, dermatophytosis, contact eczema, neurofibromatosis).

In 95 patients who had **“leisure”** domain affected, majority (67) felt their skin condition interfered with their sports (dermatophytosis, pyoderma, contact eczema, scabies) while 28 felt their social activities (acne, ichthyosis, hyperhidrosis, dermatophytosis, scabies) were disturbed.

Out of 50 patients who had **“work and school”** domain affected, majority (41) felt their skin condition disturbed their education in school (dermatophytosis, acne, scabies, contact eczema, hyperhidrosis, pediculosis, neurofibromatosis, tuberous sclerosis) and 9 felt that their skin condition interfered with their occupation(contact eczema, vitiligo, plantar fissures)

There were a total of 27 patients in whom **“personal relationships”** domain was affected and all of them faced problems with friends or relatives because of their skin condition (acne, vitiligo, psoriasis). Among 72 patients who had **“treatment “** domain affected, 50 felt their schooling or occupation was affected because of treatment of their skin diseases (acne, ichthyosis, neurofibromatosis, tuberous sclerosis, urticaria), 22 felt that the treatment was time consuming for them (ichthyosis, keloid, urticaria)

The common domains affected in the adolescents in school were “symptoms and feelings” and “work and school”(common diseases: acne, dermatophytosis, pediculosis, pyoderma), in college going adolescents were “symptoms and feelings” and “daily activities”

(common diseases: acne, dermatophytosis, contact eczema, seborrheic dermatitis) and in working adolescents were “symptoms and feelings” and “work and school” (acne, dermatophytosis, contact eczema, psoriasis, hyperhidrosis)

The diseases with the high mean DLQI scores (in late adolescent age group) were hyperhidrosis(10.6) followed by dermatophytosis (10.5 ± 4.6), scabies (10.3 ± 3.2), pediculosis (8.9 ± 1.2), pyoderma (8.2 ± 2.2), acne (8.1 ± 4.1), tuberous sclerosis(7.6 ± 1.2), seborrheic dermatitis (7.5 ± 2.3), psoriasis (7.5 ± 1.9), ichthyosis (7.2), neurofibromatosis (7.2 ±1.1), urticaria (6.9 ± 1.7), prurigo simplex (6.8), vitiligo (6.1), herpes simplex infections (5.4 ± 1.1).

The mean DLQI scores of common diseases reported in literature are 7.21 ± 4.82 for acne by Raju et al.,[171] 7.70 ± 1.03 for psoriasis by Randa et al.,[140] 12.7 ± 5.9 for dermatophytosis by Rajasekar et al.,[172] 10.09 ± 5.96 for scabies by Jin-gang et al.,[173] 7.73 ± 5.3 for seborrheic dermatitis by Szepietowski et al.,[14] 8.2 for vitiligo by Amer and Gao et al.,[174] 7.96 ± 5 for hyperhidrosis by Muthusamy et al.,[175] 8.3 ± 6.5 for Ichthyosis by Dreyfus et al.,[176] and 4.8 for urticaria by Itakura et al.[177]

“Symptoms and feelings” was the most common domain affected in all diseases with high mean DLQI score. In addition, “daily activities” domain was also commonly affected in scabies, psoriasis and hyperhidrosis. “Work and school” was the most common domain affected in pediculosis, acne, neurofibromatosis and tuberous sclerosis along with “symptoms and feelings” domain.

The most common domains affected for diseases in literature were “symptoms and feeelings” for ichthyosis (Dreyfus et al.,),[176] “symptoms and feelings” and “personal relationships” for scabies (Jin-gang et al.,),[173] “symptoms and feelings” for dermatophytosis (Patro et al.,).[178]

In the study conducted by Chintalapati et al., Dermatology life quality index (DLQI) analysis showed that majority of the population had small effect on patients life constituting 47% which was similar to that obtained in our study, followed by no effect (33%), moderate effect (18%), very large effect(0.5%) and extremely large effect(0.5%) on patient's life. [158]

SUMMARY

- The prevalence of adolescent dermatoses in patients attending Dematology OPD in our hospital was 2.1% (313 patients) while 15% (45 patients) of adolescents attending adolescent clinic in paediatric OPD had dermatological complaints. Hence, on the whole there was 2.3% (358 patients) prevalence of adolescent dermatoses in our hospital.
- Most of the adolescents (15.9%) belonged to early adolescent age group (10-12 years), followed by mid adolescent age group (13-15 years) and late adolescent age group (16-19 years) which was similar to studies done all over India both in Hospital and school settings and in our study males outnumbered females in the ratio 1.3:1 None of the adolescents were uneducated and most of them were studying (90.3%) and few (9.8%) were working.
- Most common diseases observed in our study were infections, followed by infestations, appendageal disorders, dermatitis, papulosquamous disorders, keratinisation disorders, urticaria, naevi, pigmentary disorders, disorders of dermal connective tissue, hamartoneoplastic syndromes, metabolic disorders, connective tissue disorders, cutaneous photosensitivity diseases and psychocutaneous disorders. This distribution was almost similar to hospital based studies done in Manipur and Nigeria which also reported that infections were the most common dermatoses followed by acne and eczema. But results were discordant with a school based study done in South India which reported that acne was the most common dermatoses followed by pediculosis and relatively lesser prevalence of infections
- The most common infections were fungal followed by bacterial and viral. This was in accordance with hospital based studies done in Manipur and Nigeria and also in a school based study done in South India. Among infestations, scabies was the most

common disease followed by pediculosis. This was also similar to studies done in Manipur, Nigeria, Brazil but differed form school based study done in South India (pediculosis more than scabies).

- The most common diseases is other disease groups were acne in appendageal disorders, contact eczema in dermatitis group, vitiligo in pigmentary disorders, psroriasis in papulosquamous disorders, phrynoderma and ichthyosis in keratinization disorders, naevus depigmentosus, compound naevus and linear epidermal naevus in naevi disorders, PXE in disorders of dermal connective tissue, PMLE in photosensitivity disorders, neurofibromatosis and tuberous sclerosis in hamartoneoplastic disorders which was almost similar to studies done across India and across the world in both hospital and school based settings.
- The most common diseases were infestations followed by fungal infections in early and mid adolescent age group and fungal infections followed by appendageal disorders in late adolescent age group. The results were similar to the study conducted in North East India and also in study conducted in Brazil. Majority of our cases were acquired (92.5%) than inherited.
- There was no much difference in distribution of dermatoses among males and females, as the most common diseases (infections followed by infestations, appendageal disorders and dermatitis) were the same in both the genders.
- Around one-third of the patients had family history of similar complaints and prior treatment history mostly over the counter self medication.
- Mean latency period between the clinical problem and treatment seeking was 23.5 days.
- About 13.6% had used inappropriate over the counter topical steroids for their skin ailments before the actual treatment, the common indications being dermatophytosis,

skin lightening and pyoderma.It was in accordance with the study conducted in New delhi but differed from the study done in Chhattisgarh in which the most common indication was skin lightening.

- Of the patients who had prior treatment history, most of them (29.6%) took self-medication (over the counter) while only few (12.5%) consulted Dermatologists.
- Out of the 202 adolescents quality of life was affected in 84.6% of adolescents. Most of the patients had small effect of their diseases on quality of life followed by moderate effect, very large effect and extremely large effect. This was similar to the study conducted in South India in a private clinic, in which most patients had small effect followed by moderate effect on quality of life with the most common domain affected being “symptoms and feelings” followed by “daily activities”, “leisure”, “work and school”, “treatment” and “personal relationships”.
- The diseases with high mean DLQI scores were hyperhidrosis followed by dermatophytosis, scabies, pediculosis, pyoderma and acne.

CONCLUSION

Our study was aimed to assess the patterns of adolescent dermatoses and their effect on quality of life in hospital setting. In our study we found that most common dermatoses in our study were infections followed by infestations, appendageal disorders, dermatitis, and papulosquamous disorders. The distribution was similar to Indian and International studies done in hospital set up but differed from the South Indian School based study, and the latter warrants further research with more sample size to be done in school setting to analyse the observed difference. The most common infections observed in our study were fungal, which were similar to studies done both in hospital and school setting across India and the world. Improving personal hygiene practices, avoidance of overcrowding, proper sanitation can help to reduce prevalence of infections and infestations. There were no much differences in the age group wise distribution of dermatoses in our study and other Indian and International studies in the literature both in hospital and school set up with infestations being common in early adolescents, infestation and infections in mid adolescents and fungal infections and appendageal disorders in late adolescents except in a study conducted in North East India which reported higher prevalence of infections in early adolescents. It was found in our study that more than one fourth of adolescents had used over the counter self medications before consulting the doctor and only few consulted dermatologists which was similar to studies done in different parts of our country. Our study found that 13.6% of adolescents had topical steroid misuse mostly for fungal infections followed by skin lightening. This was similar to the study done in North India (New Delhi) but differed from another study in Chhattisgarh in which the most common indication was skin lightening. This could be because of easy over the counter availability of topical steroids. Our study was the

first and unique because none of the studies in adolescent dermatoses had assessed treatment seeking behavior among adolescents and prevalence of steroid abuse.

Diseases with high mean DLQI score in our study were hyperhidrosis, dermatophytosis, scabies, pediculosis, pyoderma and acne which were almost similar to both Indian and International studies in literature. Though there are studies done to assess impact of acne, vitiligo and psoriasis on quality of life, the impact of other diseases like hyperhidrosis, dermatophytosis, and scabies on quality of life remains unexplored. The reasons for their quality of life getting affected could be because of embarrassment, cosmetic disfigurement, interference with household and school works. Hence it should be noted that though the diseases may appear trivial, but the magnitude of its effect on quality of life in huge. It is necessary to assess the quality of life affected due to the diseases to alter the treatment options and preventing the psychological disorders which may develop in the adolescents who are the future pillars of India. Our study, being the first of its kind in assessing effect of skin diseases as a whole, on quality of life of adolescents, treatment seeking behavior and steroid abuse can remain as a platform for further studies to explore the psychodermatological issues in this vulnerable age group.

LIMITATIONS

Various parameters like correlation between severity of the disease and DLQI scores, various treatment methods and improvement of DLQI scores could not be assessed in our study which can be a platform for further research works with more sample size.

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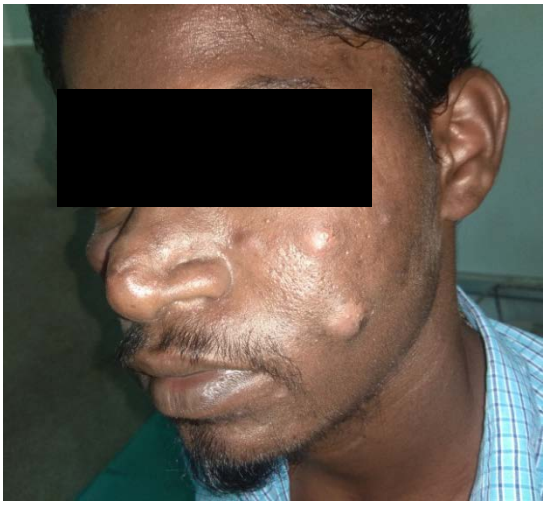
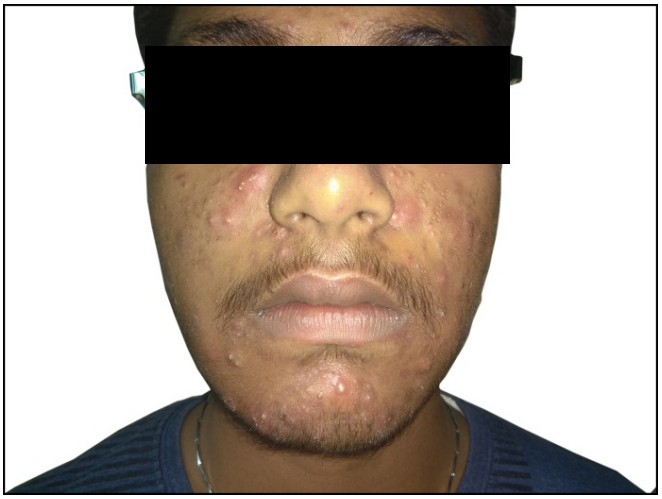
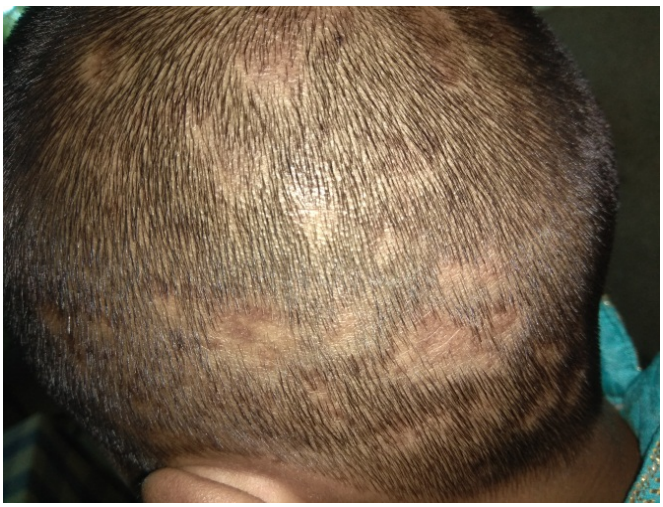
1. ACNE VULGARIS – GRADE 4 (MULTIPLE NODULES AND CYSTS WITH SCARRING OVER FACE):



2. ACNE VULGARIS GRADE 3 (MULTIPLE PUSTULES, PAPULES AND NODULES WITH SCARRING OVER FACE):

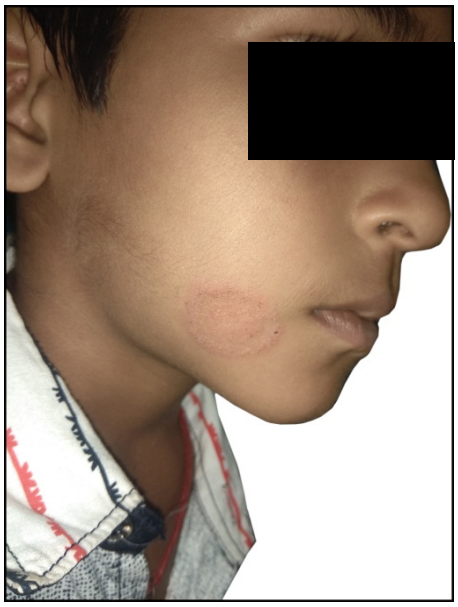


3.Alopecia areata (circumscribed hairless smooth patches over scalp)

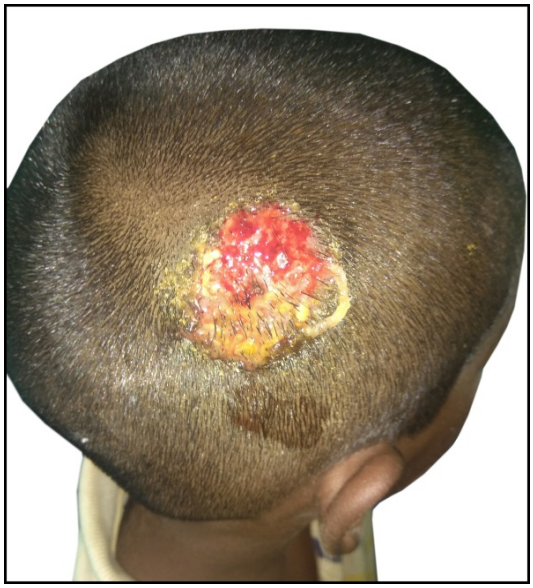


4. Verruca vulgaris (verrucous papules over dorsum of left hand):

5.Dermatophytosis (Tinea faciei) - right side of face:

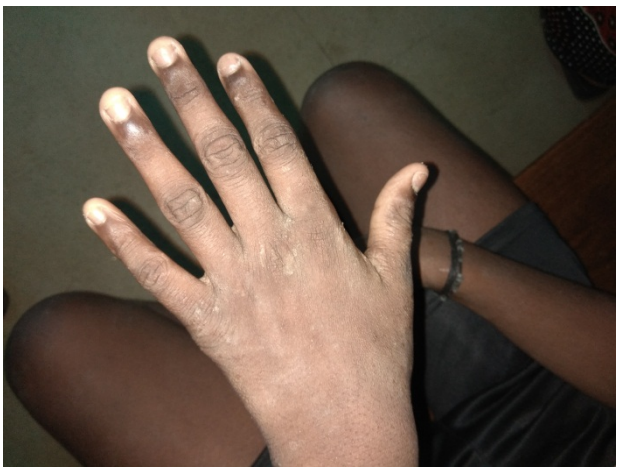


6. Kerion (Microsporum canis) – right parietal scalp

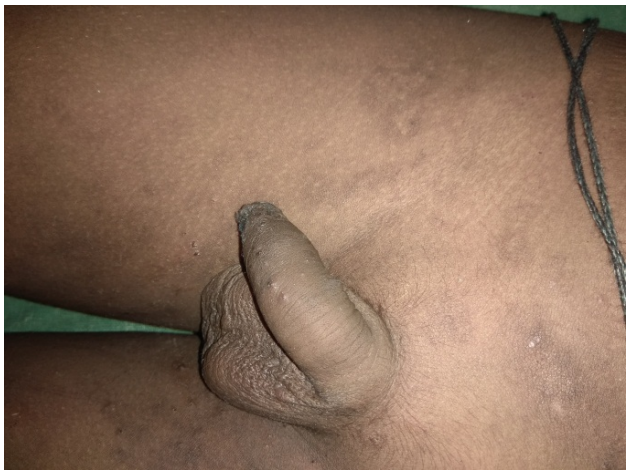


7. 10 %KOH(40 x): Long, hyalinized branching hyphae isolated from a case of Tinea faciei

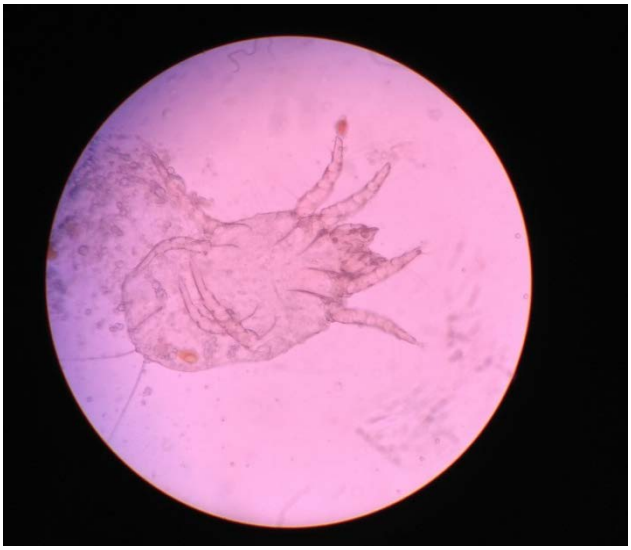
8 (a). Scabies: (skin coloured pruritic papules in web spaces of Left hand)



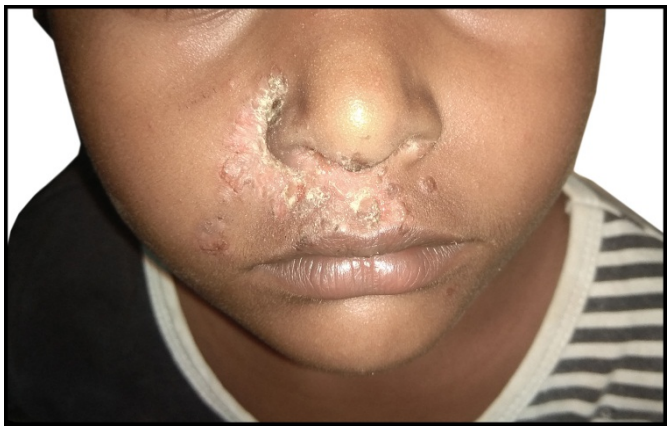
8 (b). Scabies: (Skin coloured pruritic papules in genitals)



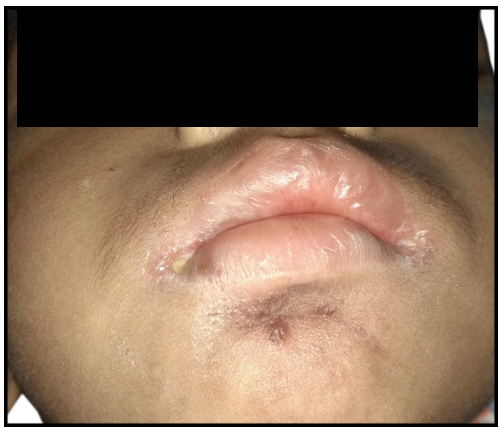
8 (c): Saline mount 40 x showing Sarcoptes scabiei



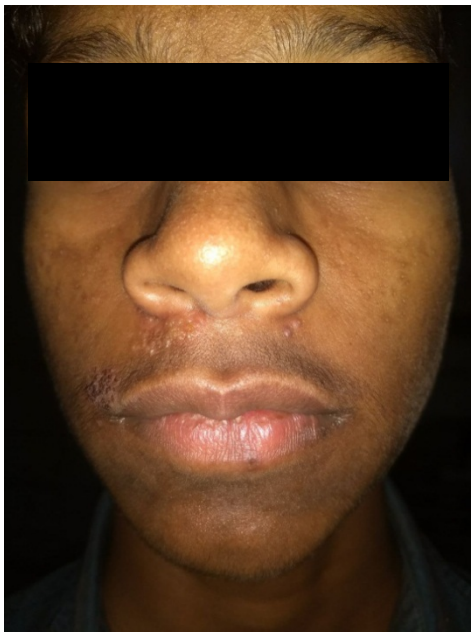
9. Impetigo(erosions with honey coloured crusting in perinasal region and philtrum)



10. Impetigo(honey coloured crusting over ala of nose, oral commissures):

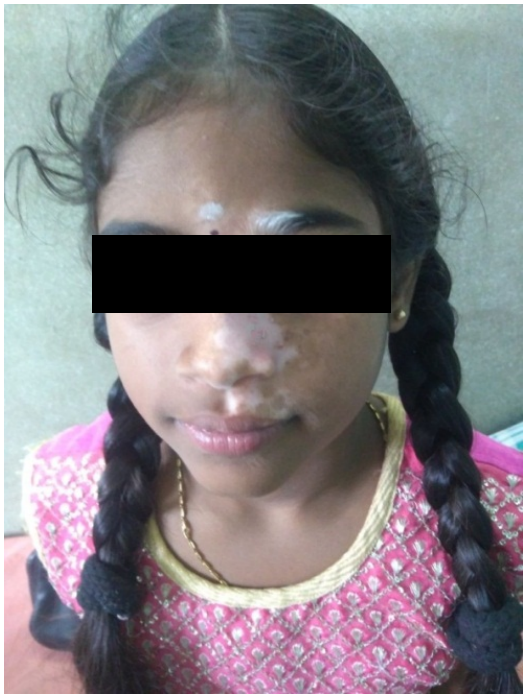


11(a).Herpes labialis(grouped vesicles over right side of upper lip and below right ala of nose):

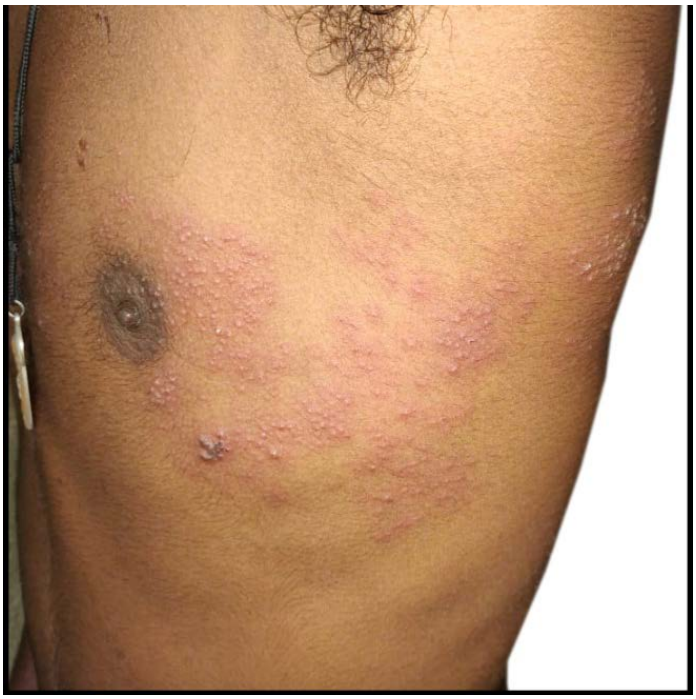


11(b). Multinucleated giant cells in herpes labialis– 40x

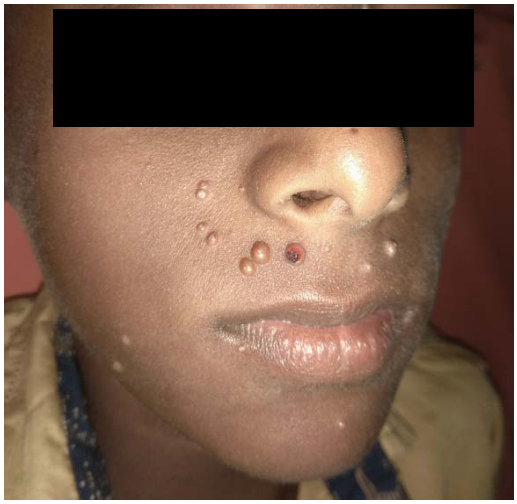
12.Segmentalvitiligo(Left side of face):



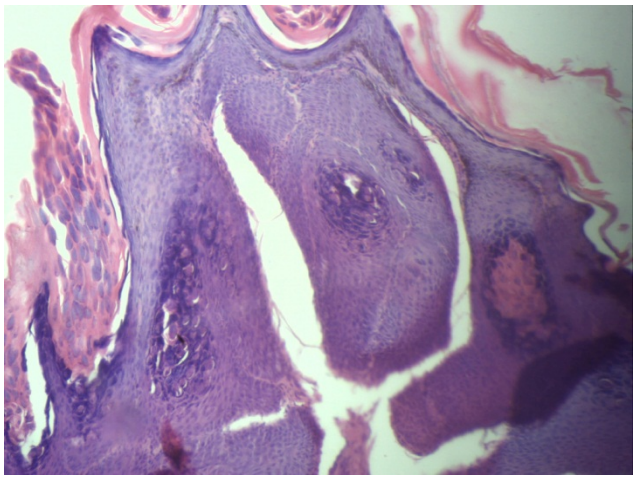
13.Herpes zoster – Left T4 dermatome:



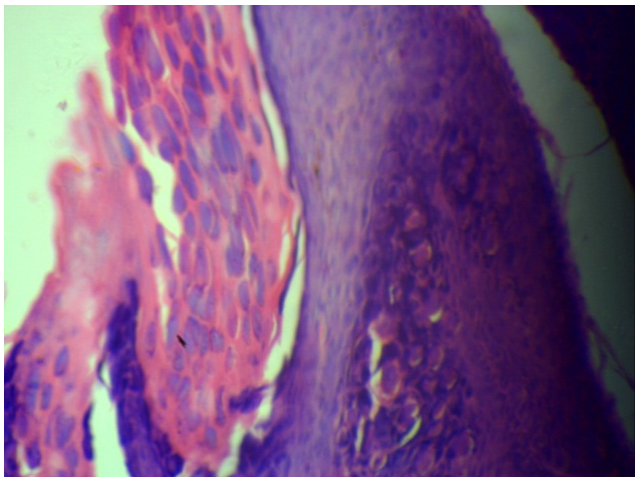
14 (a).Molluscumcontagiosum
(Umbilicated papules over face)



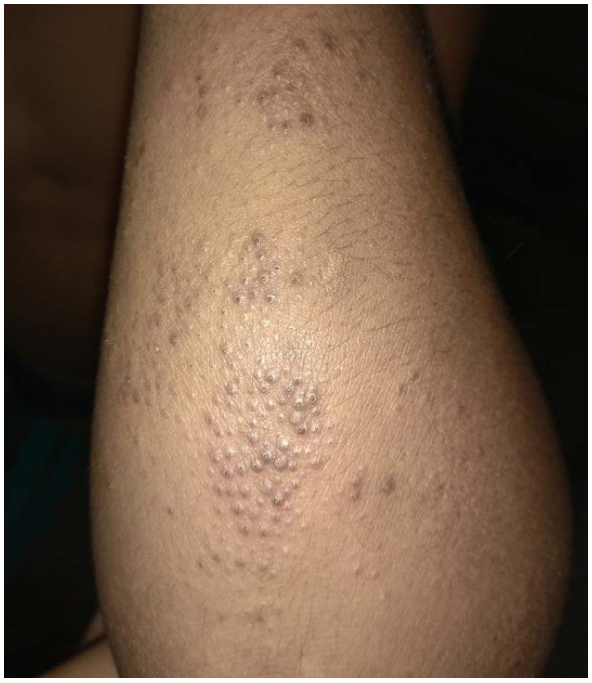
14 (b). Epidermis showing acanthosis and intracytoplasmic inclusion bodies (molluscum bodies) HPE 10 X



14 (c).Intracytoplasmic inclusion bodies
(Molluscum bodies) eosinophilic in stratum spinosum and basophilic in stratum corneum – 20 x

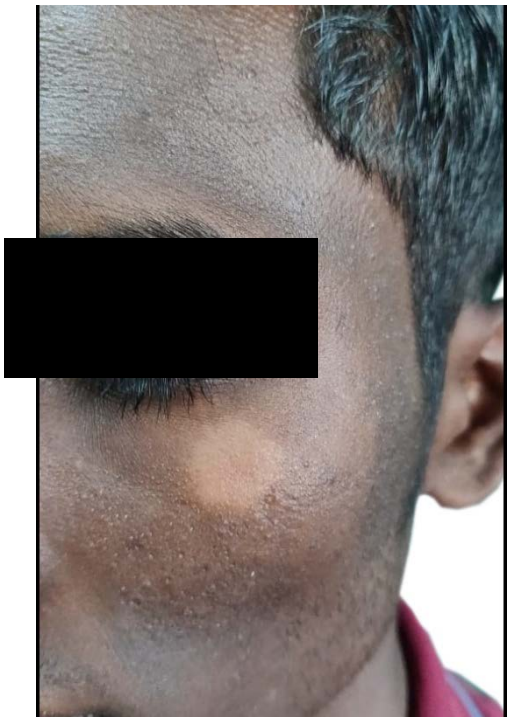


15(a). Phrynoderma (Left forearm):

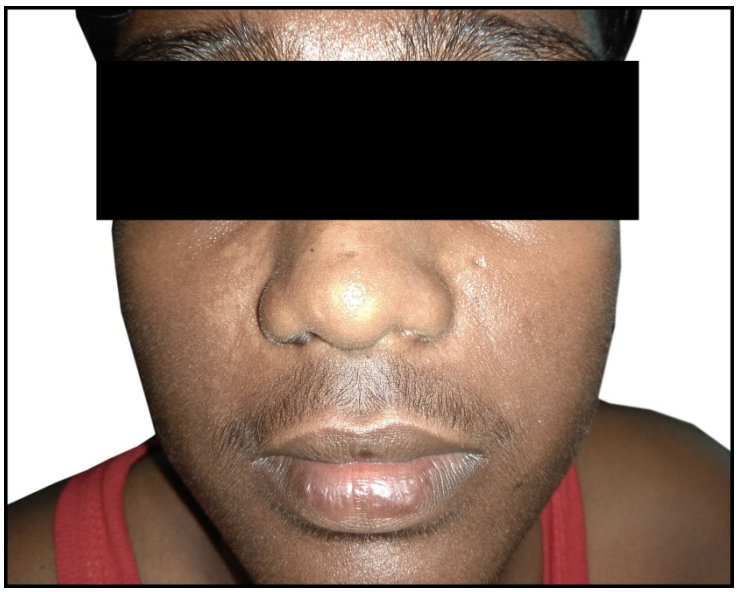


15 (b): Bitot's spots(Left eye) associated with phrynoderma

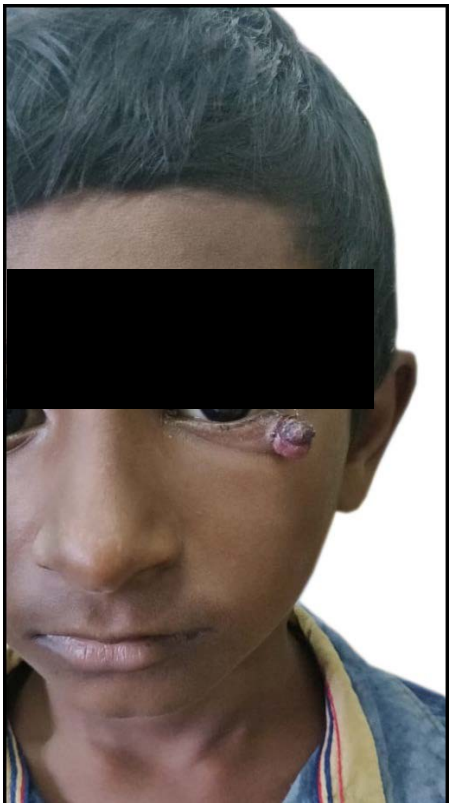
16. Pityriasia alba(Left malar area of face):



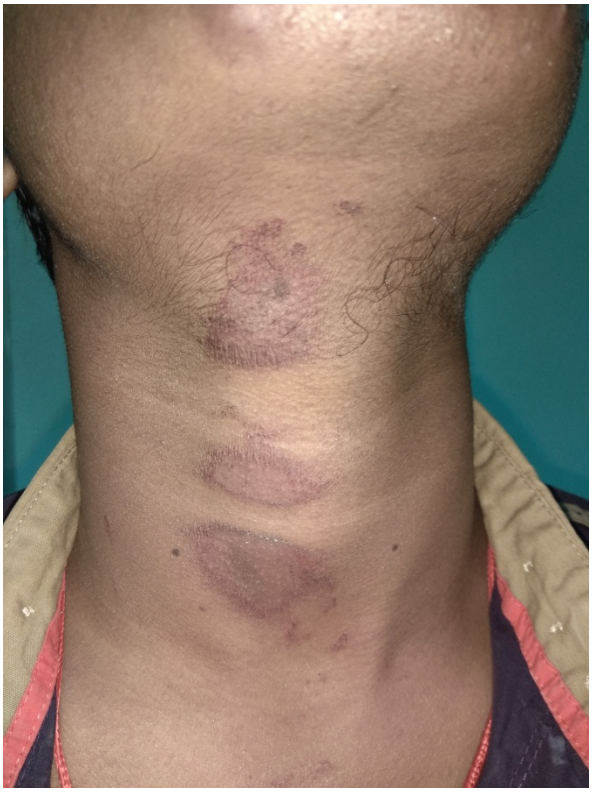
17. Seborrheic dermatitis(Perinasal region):



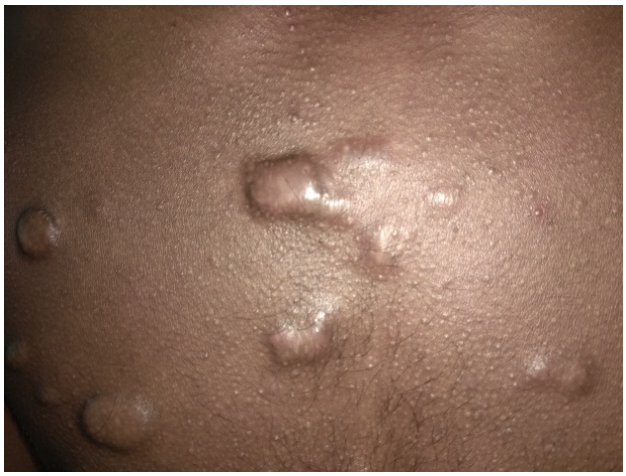
18. Pyogenic granuloma (Left lower eyelid):



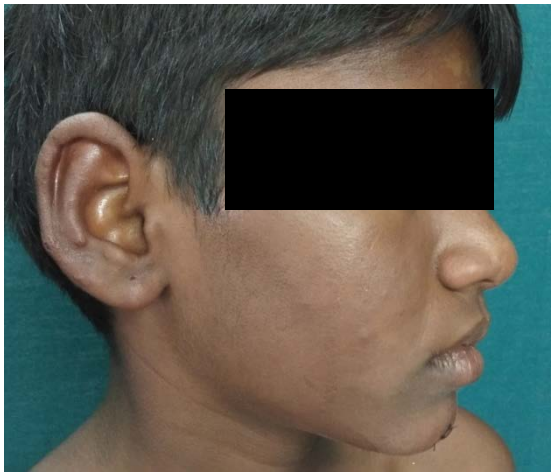
19. Paederus dermatitis (Neck):



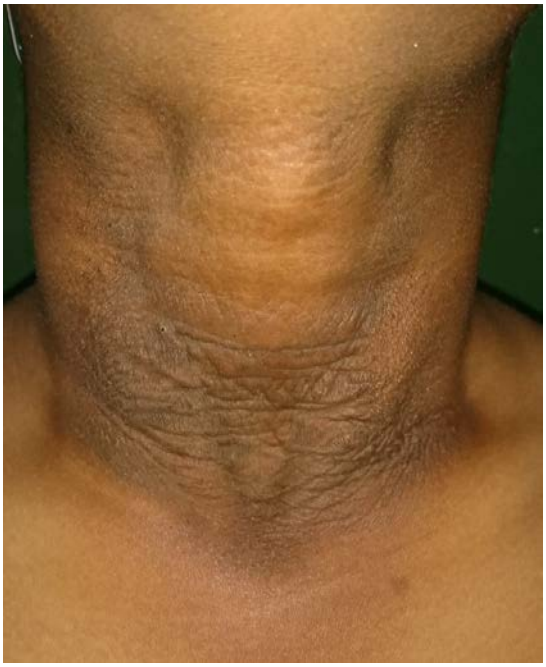
20. Keloid (Presternal region):



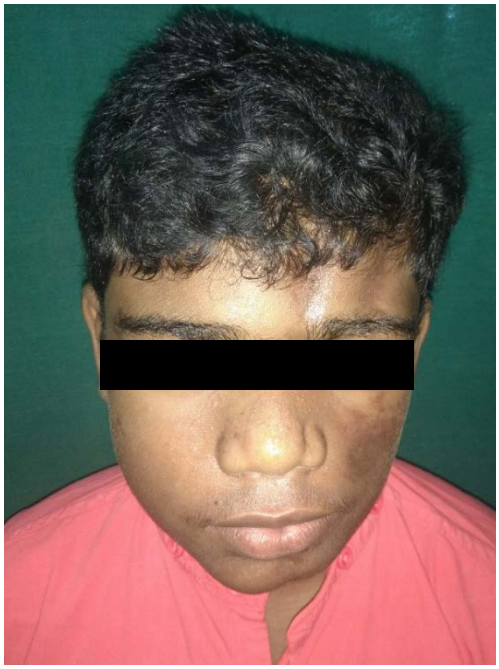
21.Infiltrated ear lobe(Right ear lobe) nodules in LLHD



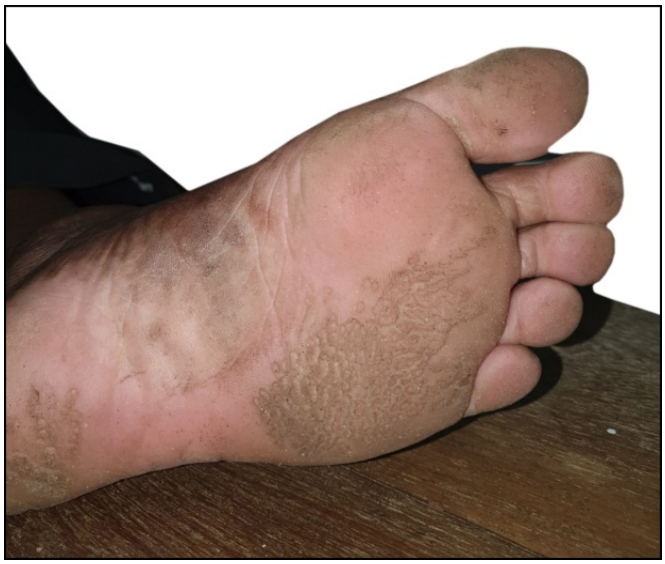
22. Pseudoxanthoma elasticum (moroccan leather appearance of skin over neck):



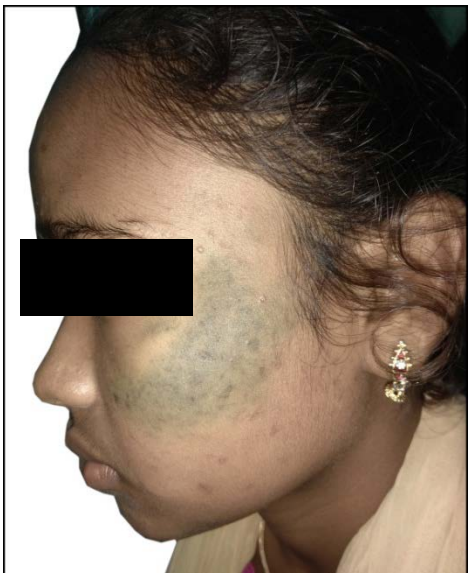
23. Morphoea (Left upper and mid face):



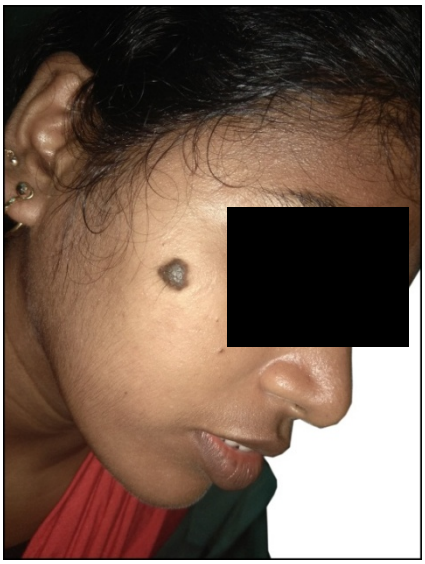
24.Pitted keratolysis (Sole of left foot):



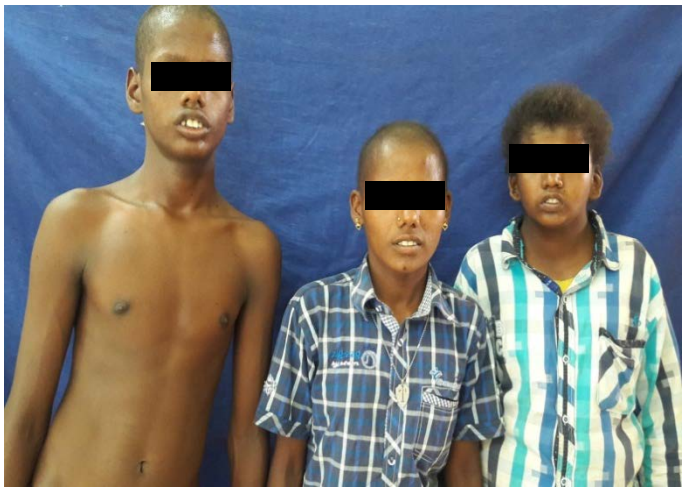
25.Naevus of Ota(Left side of face):



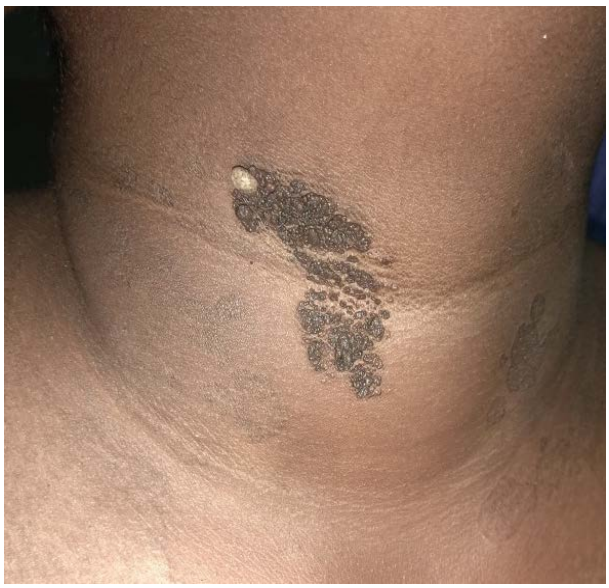
26.Compound naevus (over right zygoma):



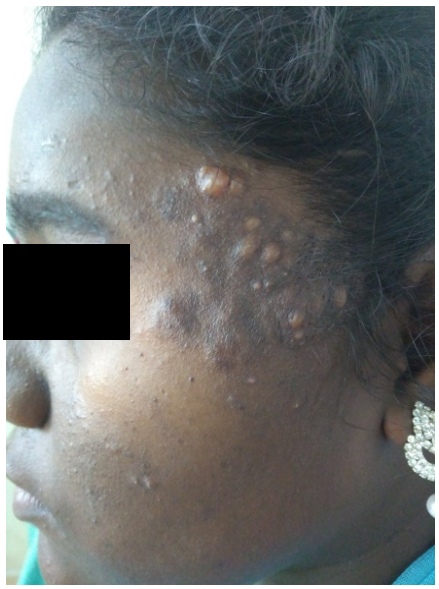
27.Family of Naxos syndrome



28. Linear verrucous epidermal naevus(neck):



29 (a): Neurofibromatosis (Cutaneous NF type 1) – Left side of forehead and temple:



29 (b): Café au lait macules in NF

(Left side of lower back):

CLINICAL STUDY OF PROFILE OF ADOLESCENT DERMATOSES AND THEIR EFFECT ON QUALITY OF LIFE IN ADOLESCENTS – PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA

PROFORMA

NAME: **CASE NO:** **DATE:**

AGE: **GENDER:**

ADDRESS: **PHONE NUMBER:**

MONTHLY INCOME OF FAMILY: **EDUCATION:**

PRESENTING COMPLAINTS: **DURATION**

HISTORY OF PRESENTING ILLNESS:

PAST HISTORY: H/O similar illness in the past

MEDICAL HISTORY: K/C/O DM/HTN/TB/BA/EPILEPSY/JAUNDICE/OTHERS

H/O SIMILAR ILLNESS AMONG FAMILY MEMBERS: YES NO

TREATMENT HISTORY:

BIRTH & DEVELOPMENTAL HISTORY:

MENSTRUAL HISTORY(FEMALES): ATTAINED MENARCHE YES NO

NORMAL CYCLES YES NO

IF ABNORMAL CYCLES, SPECIFY ABNORMALITY

PUBERTY AND ADOLESCENT CHANGES :

PERSONAL HISTORY:

BOWEL **BLADDER:**

SMOKING **ALCOHOL:**

DIET HISTORY:

CONTACT HISTORY: **EMC** **ACCEPTS/DENIES**

PMC **ACCEPTS/DENIES**

IF ACCEPTS, DETAILED HISTORY:

GENERAL EXAMINATION:

BUILT & NOURISHMENT:

CONSCIOUS **ORIENTED** **TEMPERATURE**

PULSE RATE: **BLOOD PRESSURE:**

HEIGHT: **WEIGHT:**

GROWTH PERCENTILE:

PALLOR/ ICTERUS/ CYANOSIS/ CLUBBING/ LYMPHADENOPATHY/ PEDAL EDEMA

CVS: **P/A:**

RS: **CNS:**

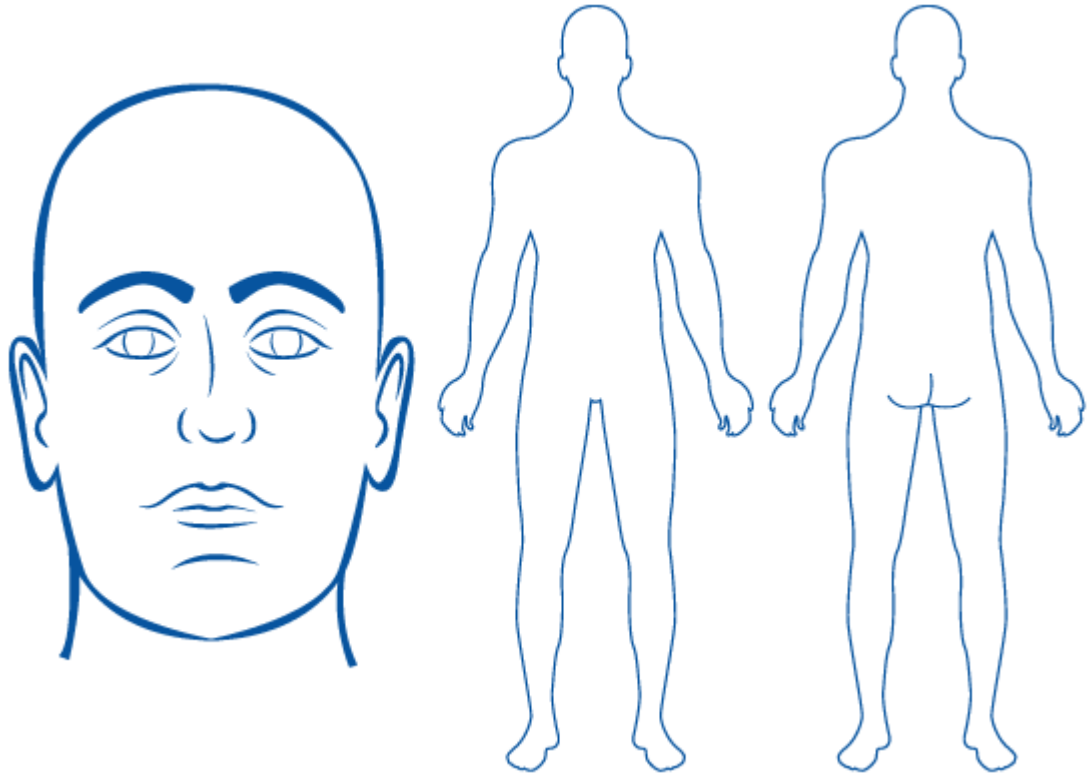
DERMATOLOGICAL EXAMINATION:

MORPHOLOGY:

PRIMARY LESIONS:

SECONDARY LESIONS:

PATTERNS OF DISTRIBUTION:



PROVISIONAL DIAGNOSIS:

INVESTIGATIONS:

SL NO	INVESTIGATIONS	AT PRESENTATION	FOLLOW UP
1	CBC WITH ESR		
2	RBS		
3	RFT & ELECTROLYTES		

4	**LFT**		
5	**PERIPHERAL SMEAR**		
6	**SKIN BIOPSY**		
7	**KOH MOUNT**		
8	**CULTURE(BLOOD/PUS/ FUNGAL)**		
9	**THYROID TEST**		
10	**LIPID PROFILE**		
11	**PT/APTT**		
12	**OTHERS**		

FINAL DIAGNOSIS:

DQOL SCORE:

INTERPRETATION:

COMPONENT AFFECTED:

TREATMENT GIVEN:

DERMATOLOGY LIFE QUALITY INDEX

DLQI

Hospital No: Date:
Name: Score:
Address: Diagnosis:

The aim of this questionnaire is to measure how much your skin problem has affected your life OVER THE LAST WEEK. Please tick one box for each question.

1.	Over the last week, how **itchy**, **sore**, **painful** or **stinging** has your skin been?	Very much A lot A little Not at all	❒ ❒ ❒ ❒	
2.	Over the last week, how **embarrassed** or **self conscious** have you been because of your skin?	Very much A lot A little Not at all	❒ ❒ ❒ ❒	
3.	Over the last week, how much has your skin interfered with you going **shopping** or looking after your **home** or **garden**?	Very much A lot A little Not at all	❒ ❒ ❒ ❒	 Not relevant ❒
4.	Over the last week, how much has your skin influenced the **clothes** you wear?	Very much A lot A little Not at all	❒ ❒ ❒ ❒	 Not relevant ❒
5.	Over the last week, how much has your skin affected any **social** or **leisure** activities?	Very much A lot A little Not at all	❒ ❒ ❒ ❒	 Not relevant ❒
6.	Over the last week, how much has your skin made it difficult for you to do any **sport**?	Very much A lot A little Not at all	❒ ❒ ❒ ❒	 Not relevant ❒
7.	Over the last week, has your skin prevented you from **working** or **studying**?	Yes No	❒ ❒	 Not relevant ❒
	If "No", over the last week how much has your skin been a problem at **work** or **studying**?	A lot A little Not at all	❒ ❒ ❒	
8.	Over the last week, how much has your skin created problems with your **partner** or any of your **close friends** or **relatives**?	Very much A lot A little Not at all	❒ ❒ ❒ ❒	 Not relevant ❒
9.	Over the last week, how much has your skin caused any **sexual difficulties**?	Very much A lot A little Not at all	❒ ❒ ❒ ❒	 Not relevant ❒
10.	Over the last week, how much of a problem has the **treatment** for your skin been, for example by making your home messy, or by taking up time?	Very much A lot A little Not at all	❒ ❒ ❒ ❒	 Not relevant ❒

Please check you have answered EVERY question. Thank you.

டெர்மாடலாஜி வாழ்க்கை தர அட்டவணை

டிஎல்க்யூஐ

ஹாஸ்பிடல் எண்: தேதி: மதிப்பெண்:

பெயர்: டயக்னாசிஸ்:

முகவரி:

இந்த கேள்வித்தாளின் நோக்கம் கடந்த வாரத்தில் உங்களது சரும நோயால் எந்த அளவிற்கு உங்களது வாழ்க்கை பாதிக்கப்பட்டது என்பதை அளவிடுவதாகும். ஒவ்வொரு கேள்விக்கும் ஒரு கட்டத்தை தேர்வு செய்யவும்.

1.	கடந்த ஒரு வாரத்தில் எத்தனை முறை உங்களது சருமம் **அரிப்பு, புண், வலி மற்றும் குத்துதலாக** இருந்தது?	மிக அதிகம் ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐ ☐	
2.	கடந்த ஒரு வாரத்தில் உங்களது சருமம் காரணமாக எவ்வாறு **குழப்பமாக** அல்லது **சுய உணர்வு** கொண்டவராக இருந்தீர்கள்?	மிக அதிகம் ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐ ☐	
3.	கடந்த ஒரு வாரத்தில் எத்தனை முறை உங்களது சருமம் உங்களது **ஷாப்பிங்** அல்லது உங்களது **வீடு அல்லது தோட்டத்தை** பராமரிப்பதில் இடையூறு செய்தது?	மிக அதிகம் ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐ ☐	தொடர்பில்லை ☐
4.	கடந்த ஒரு வாரத்தில் உங்களது சருமம் எவ்வாறு உங்களது **உடையணியும்** முறையில் ஆதிக்கம் செய்தது?	மிக அதிகம் ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐ ☐	தொடர்பில்லை ☐
5.	கடந்த ஒரு வாரத்தில் உங்களது சருமம் எவ்வாறு உங்களது **சமூக** அல்லது **பொழுதுபோக்கு** நடவடிக்கைகளை பாதித்தது?	மிக அதிகம் ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐ ☐	தொடர்பில்லை ☐
6.	கடந்த ஒரு வாரத்தில் உங்களது சருமம் எவ்வாறு உங்களது **விளையாட்டை** பாதித்தது?	மிக அதிகம் ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐ ☐	தொடர்பில்லை ☐
7.	கடந்த ஒரு வாரத்தில் உங்களது சருமம் உங்களது **வேலை** அல்லது **படிப்பை** தடை செய்ததா?	ஆம் இல்லை	☐ ☐	தொடர்பில்லை ☐
	''இல்லை'' என்றால் கடந்த ஒரு வாரத்தில் உங்களது சருமம் எவ்வாறு உங்களது **வேலை** அல்லது **படிப்பிற்கு** பிரச்சனையாக இருந்தது?	ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐	
8.	கடந்த ஒரு வாரத்தில் உங்களது சருமம் எவ்வாறு உங்களது **பார்ட்னர்** அல்லது உங்களது **நெருங்கிய நண்பர்கள்** அல்லது **உறவினர்களுக்கு** பிரச்சனை ஏற்படுத்துவதாக இருந்தது?	மிக அதிகம் ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐ ☐	தொடர்பில்லை ☐
9.	கடந்த ஒரு வாரத்தில் உங்களது சருமம் எவ்வாறு உங்களுக்கு **பாலியல் சிரமங்களை** ஏற்படுத்தியது?	மிக அதிகம் ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐ ☐	தொடர்பில்லை ☐
10.	கடந்த ஒரு வாரத்தில் உங்களது சருமத்திற்கு **சிகிச்சை** அளிப்பது எவ்வளவு சிரமமாக இருந்தது, உதாரணமாக உங்களது வீட்டில் அலங்கோலம் ஏற்படுத்துவது, அல்லது அதிக நேரம் எடுத்துக்கொள்வது?	மிக அதிகம் ஏராளமாக சிறிது ஒன்றுமில்லை	☐ ☐ ☐ ☐	தொடர்பில்லை ☐

தயவுசெய்து நீங்கள் அனைத்து கேள்விகளுக்கும் பதில் அளித்துள்ளீர்களா என்பதை உறுதி செய்யவும். நன்றி.

ENGLISH TO TAMIL
22 JANUARY 2008

நோயாளிகளுக்கு அறிவிப்பு மற்றும் ஒப்புதல் படிவம்
(மருத்துவ ஆய்வில் பங்கேற்பத்தற்கு)

ஆய்வு செய்யப்படும் தலைப்பு:

தென் இந்தியாவில் உள்ள மருத்துக்கல்லூரி மருத்துவமனையில் இளம் பருவ வயதினரின் தோல் நோய்கள் மற்றும் அவற்றால் ஏற்படும் வாழ்க்கை தரம் பாதிப்பு பற்றிய மருத்துவ ஆய்வு.

பங்கு பெறுவரின் பெயர்:
பங்கு பெறுவரின் வயது:

		பங்கு பெறுவர் இதனை ✓ குறிக்கவும்
1.	நான் மேலே குறிப்பிட்டுள்ள மருத்துவ ஆய்வின் விவரங்களை படித்து புரிந்து கொண்டேன். என்னுடைய சந்தேகங்களை கேட்கவும், அதற்கான தகுந்த விளக்கங்களை பெறவும் வாய்ப்பளிக்கப்பட்டுள்ளது என அறிந்து கொண்டேன்.	☐
2.	நான் இவ்வாய்வில் தன்னிச்சையாக தான் பங்கேற்கிறேன். எந்த காரணத்தினாலோ எந்த கட்டத்திலும், எந்த சட்ட சிக்கலுக்கும் உட்படாமல் நான் இவ்வாய்வில் இருந்து விலகி கொள்ளலாம் என்றும் அறிந்து கொண்டேன்.	☐
3.	இந்த ஆய்வு சம்பந்தமாகவோ, இதை சார்ந்து மேலும் ஆய்வு மேற்காள்ளும் போதும் இந்த ஆய்வில் பங்குபெறும் மருத்துவர் என்னுடைய மருத்துவ அறிக்கைகளை பார்ப்பதற்கு என் அனுமதி தேவையில்லை என அறிந்து கொள்கிறேன். நான் ஆய்வில் இருந்து விலகிக் கொண்டாலும் இது பொருந்தும் என அறிகிறேன்.	☐
4.	இந்த ஆய்வின் மூலம் கிடைக்கும் தகவலையோ, முடிவையோ பயன்படுத்திக் கொள்ள மறுக்க மாட்டேன்.	☐
5.	இந்த ஆய்வில் பங்கு கொள்ள ஒப்புக் கொள்கிறேன் எனக்கு கொடுக்கப்பட்ட அறிவுரைகளின் படி நடந்து கொள்வதுடன், ஆய்வை மேற்கொள்ளும் மருத்துவ அணிக்கு உண்மையுடன் இருப்பேன் என்று உறுதியளிக்கிறேன். என் உடல் நலம் பாதிக்கப்பட்டாலோ, அல்லது எதிர்பாராத, வழக்கத்திற்கு மாறான நோய்குறி தென்பட்டாலோ உடனே இதை மருத்துவ அணியிடம் தெரிவிப்பேன் என உறுதி அளிக்றேன்.	☐

பங்கேற்பவரின் கையொப்பம் / ..... இடம் .....
கட்டைவிரல் ரேகை
பங்கேற்பவரின் பெயர் மற்றும் விலாசம் .....
ஆய்வாளரின் கையொப்பம் /..... இடம் .....
ஆய்வாளரின் பெயர் .....
மையம் .....
கல்வியறிவு இல்லாதவற்கு (கைரேகை வைத்தவர்களுக்கு) இது அவசியம் தேவை
சாட்சியின் கையொப்பம் /..... இடம் .....
பெயர் மற்றும் விலாசம் ....

INFORMED CONSENT FORM

Study Title Clinical study of profile of Adolescent dermatoses and their effect on Quality of life in adolescents – Prospective Observational Study in a Tertiary care Hospital in South India

Study Number _____

Subject's Full Name _____

Date of Birth/Age _____

Address _____

1. I confirm that I have read and understood the information sheet dated for the above study and have had the opportunity to ask questions.
   OR I have been explained the nature of the study by the Investigator and had the opportunity to ask questions
2. I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason and without my medical care or legal rights being affected.
3. I understand that the sponsor of the clinical trial/project, others working on the Sponsor's behalf, the Ethics Committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further research that may be conducted in relation to it, even if I withdraw from the trial. However, I understand that my Identity will not be revealed in any information released to third parties or published.
4. I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s)
5. I agree to take part in the above study

Signature (or Thumb impression) of the Subject/Legally Acceptable Representative: _____

Signatory's Name _____ Date _____

Signature of the Investigator _____ Date _____

Study Investigator's Name _____

Signature of the Witness _____ Date _____

Name of the Witness

Sl no	Name	Age	Gender	Domains affected	Education	Duration	Presentation	complaints	Past history	Medical history	Family history	Treatment history	Use of topical steroids	Developmental history	Menarche	Menstrual abnormalities	SMR	Personal History	Exposure history	Primary lesion	Secondary lesion	Special lesion	Diagnosis	Full diagnosis	DLQI score	Domain severely affected	New complaints	Improvement in score	Diagnosis group
1	Balanandhini	2	2	1,4	6	3	5	6	2	2	2	1	2	1	2	7	5	4	2	2	13	7	34	opecia area	3	1,2	2	1	11
2	Boopathy Raja	2	1	7	6	3	1	2	2	2	2	2	2	1	3	7	5	4	2	2	5	7	1	uris, Tinea	4	1,2,5	2	1	1
3	Jenifer	3	2	1,3,5	5	5	1	2	2	2	2	2	2	1	1	5	5	4	2	3,4	1	7	2	ant plaque	3	5	2	1	8
4	Bharath Raj	3	1	1,2,3,6	5	4	1	2	1	2	1	1	1	1	3	7	4	4	2	2	13	7	1	Tinea cruris	2	1	2	1	1
5	Athisayaraj	3	1	1,2,3,5	5	3	1	2	2	2	2	2	2	1	3	7	5	4	2	2	13	7	1	Tinea cruris	2	1	2	1	1
6	Sivasanmugam	1	1	1	6	4	1	2,3	2	2	2	2	2	1	3	7	5	4	2	4	1	7	11	D to footwe	3	1	2	1	5
7	Sankari	3	2	1,2,3,6	5	2	1	2	2	2	2	2	2	1	1	2	5	4	2	3	5	7	3	scabies	3	1	2	1	6
8	Irudhayaraj	1	1	7	3	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	4	thyosis vulg	2	1	2	2	21
9	Thangam	3	2	1,2,6	5	5	1	2,4	2	2	2	1	2	1	1	1	4	4	2	3,5	13	7	32	eloidal acn	5	1	2	1	4
10	Esakki	2	1	1,2,3,5	6	5	1	2	2	2	2	1	2	1	3	7	5	4	2	2	13	7	6	tiligo vulgar	2	1	2	1	9
11	Madhan raj	2	1	1,6	4	4	1	2	2	2	2	2	2	1	3	7	4	4	2	2,5	7	7	62	LLHD	3	2,6	2	1	2
12	Dinesh	3	1	3,4	5	4	1	2	2	2	2	2	2	1	3	7	5	4	2	2	7	7	62	BTHD	2	3	2	1	2
13	Suresh	3	1	1,2,3,4	5	3	1	2	1	2	2	1	2	1	3	7	5	4	2	2	1	7	7	xerosis	1	1	2	1	18
14	Selvamadasamy	2	1	1,2,6	5	4	1	2	2	2	1	2	2	1	3	7	5	4	2	3	5	7	3	scabies	3	1	2	1	6
15	Saravanan	2	1	1,2,5	4	3	1	2	2	2	2	2	2	1	3	7	4	4	2	2	13	7	1	Tinea cruris	2	1	2	1	1
16	Sankari	2	2	1,2,5,6	5	5	1	2	2	2	1	1	2	1	1	2	5	4	2	2,4	1	13	64	eratoderma	3	1	2	1	21
17	Navikannan	3	1	1,6	5	3	1	2,3	2	2	1	2	2	1	3	7	4	4	2	2	1	7	1	uris with id	3	1	2	1	1
18	Nagarani	3	2	1,2,3,4,5,6	6	4	1	2,3	1	2	2	1	2	1	1	1	5	4	2	2	13	7	1	ruris, Tinea	4	1,3	2	1	1
19	Mohammed Thowfiq	3	1	3	6	5	1	2	2	2	2	1	2	1	3	7	5	4	2	3	7	1	5	vulgaris gr	3	2	2	1	4
20	Alavudeen	3	1	1,4	6	4	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	11	D to footwe	3	1	2	1	5
21	Vadivukarasi	2	2	1	4	3	1	2,3,4	2	2	2	2	2	1	2	7	3	4	2	2	13	7	11	scoid eczer	1	7	2	2	5
22	Nicholo	2	1	7	3	4	1	2	2	2	2	2	2	1	3	7	3	4	2	3	13	7	12	icum contag	1	7	2	1	3
23	Sundari	3	2	1,2	6	2	1	2,3,4	2	2	2	1	2	1	1	1	5	4	2	2	3	7	20	derus derm	3	1,4	2	1	18
24	Sri Ramakrishnan	3	1	1,2	5	2	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	1	ruris, tinea	2	1	2	1	1
25	Jones	1	1	1	5	4	1	2,3	2	2	2	2	2	1	3	7	5	4	2	4	1	7	2	oriasis vulg	3	1	2	1	8
26	Griso	2	1	1	3	4	1	2	2	2	2	2	2	1	3	7	1	4	2	3	13	7	31	anthoma e	3	1,2	2	2	10
27	Ramkumar	3	1	1	5	3	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	1	7	1	Tinea cruris	4	1,3	2	1	1
28	Kannimani	2	2	7	6	5	1	2	2	2	2	1	2	1	1	6	5	4	2	4	13	7	18	riungual wa	1	6	2	1	3
29	denish	3	1	1,2,3,4	3	5	1	2	2	2	2	2	2	1	3	7	1	4	2	2	13	7	6	Vitiligo	1	7	2	1	9
30	Sasikala	3	2	1,3	5	2	1	2	2	2	2	2	2	1	1	1	5	4	2	13	2,4	7	17	Pyoderma	2	1	2	1	2
31	Gowsalya	3	2	1,2,3,5,6	5	4	1	2	2	2	2	2	2	1	1	1	5	4	2	3	13	7	5	vulgaris gr	3	1	2	1	4
32	Naveena	2	2	7	5	3	1	2	2	2	2	1	1	1	2	7	5	4	2	3	13	1	5	vulgaris gr	3	1,2	2	1	4
33	Mahalakshmi	1	2	7	4	5	1	2	2	2	2	1	2	1	2	7	3	4	2	2	13	7	6	tiligo vulga	3	2	2	2	9
34	Madhu	3	2	6	4	2	1	2,4	2	2	2	2	2	1	1	1	4	4	2	6	3	7	49	erpes labial	3	1	2	1	3
35	sanjiv kumar	3	1	1,6	5	3	2	2	2	2	2	2	2	1	3	7	4	4	2	13	2	7	22	ctinic cheilit	3	1	2	1	18
36	Vignesh	3	1	1,2,5	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	1	Tinea cruris	3	1	2	1	1
37	Sandhiya	3	2	1,3,4,6	2	5	1	1,2	2	2	2	2	2	1	1	1	1	4	2	5	2	7	42	Meningocel	1	7	2	1	18
38	Muthumukila	2	2	7	3	4	1	2	2	2	2	2	2	1	2	7	2	4	2	3	13	7	23	hrynoderm	1	7	2	2	21
39	Aseena Banu	3	2	1,2,3,5,6	6	3	1	2,3	2	2	2	1	1	1	1	1	5	4	2	2	1	7	1	nea corpor	2	1	2	1	1
40	Kalaiselvi	3	2	1,3,4,6	5	4	1	2,3	2	2	1	2	2	1	1	1	5	4	2	3	13	7	3	Scabies	3	1	2	1	6
41	Ananthapitchammal	1	2	1,2,6	4	5	1	2	2	2	2	1	2	1	1	1	2	4	2	4	6	7	8	lantar kerat	3	1	2	1	21
42	Jeba Pavala	2	2	1,2,3,4,6	5	3	1	2,3	2	2	2	2	2	1	2	7	5	4	2	3	5	7	3	scabies	2	1	2	1	6
43	Annalakshmi	3	2	1,4	5	3	1	2	2	2	2	2	2	1	1	1	4	4	2	1	5	7	24,25	urigo simpl	3	1	2	1	22
44	Mageshwaran	1	1	1,2,6	4	4	1	2	2	2	2	2	2	1	3	7	4	4	2	3	13	7	12	icum contag	1	7	2	1	3
45	Parameshwari	1	2	1,6	3	4	1	2	2	2	2	2	2	1	2	7	2	4	2	3	13	7	12	icum contag	1	7	2	1	3
46	Gokila	3	2	1,3,6	6	5	1	2	2	2	2	2	2	1	1	1	5	4	2	4	13	7	27	epidermal	3	1	2	1	13
47	Mariselvi	3	2	1,6	5	4	1	2,3	2	2	1	2	2	1	1	1	3	4	2	2	1	7	1	Tinea cruris	2	1	2	1	1
48	pandiselvi	2	2	1,2,3	4	5	1	2	2	8 (CSOM)	2	1	2	1	2	7	5	4	2	1,2	1,4	13	19	yria cutanea	4	1,3,5	2	1	19
49	Abirami	3	2	2,4	6	3	1	2,3	2	2	2	2	2	1	2	7	5	4	2	2	13	7	1	tinea cruris	3	2	2	1	1
50	Durga	3	2	2,3,4	5	5	1	2,5	2	2	1	2	2	1	1	1	5	4	2	4	13	7	45	TBVC	3	1	2	1	2
51	Levin raja	1	1	1,2,5	3	5	1	2	2	2	2	2	2	1	3	7	2	4	2	2	13	7	46	nevus of ota	1	1	2	2	13
52	Udhayaselvi	1	2	1,6	4	3	1	2,3	1	2	2	2	2	1	2	7	4	4	2	14	13	7	30	urticaria	2	1	2	1	7
53	Indhumathi	1	2	1,2	3	4	1	2	2	2	2	2	2	1	2	7	2	4	2	3	13	13	31	Cutis laxa	4	3	2	2	10
54	Anandaselvakumar	2	1	1,2,6	3	5	1	2	2	2	2	2	2	1	3	7	1	4	2	5	13	7	44	mpound ne	2	1,2	2	1	13
55	Rino Fathima	3	2	1,6	6	3	1	2,3	2	2	2	1	1	1	1	1	5	4	2	2	1	7	1	nea corpor	3	1	2	1	1
56	Meera banu	2	2	1	5	2	1	2,3	2	2	2	2	2	1	1	1	5	4	2	2	1	7	1	nea corpor	3	1	2	1	1
57	Arunkumar	3	1	1,4	6	3	1	2,4	2	2	2	2	2	1	3	7	5	4	2	3	13	7	5	vulgaris gr	3	1	2	1	4
58	Dhushyanth	2	1	1,2,3	3	3	1	2	2	2	2	2	2	1	3	7	3	4	2	13	2,4,6	7	3	Scabies	3	1	2	1	6
59	Umar kaif	2	1	7	3	4	1	2	2	2	2	2	2	1	3	7	2	4	2	13	13	7	28	dromhidrosi	4	1,4	2	2	20
60	Jaker Khan	2	1	1,2,3,6	6	3	1	2,3,4	2	2	2	2	2	1	3	7	5	4	2	3	13	1	5	vulgaris gr	4	1,4	2	1	4
61	Mahesh	3	1	1,2,3,4	4	3	1	2,3	2	2	2	1	1	1	3	7	3	4	2	2	1	7	1	tinea cruris	2	1,2,3	2	1	1
62	Suresh kumar	3	1	1,6	3	4	5	1	2	2	2	2	2	1	3	7	2	4	2	2	13	7	34	opecia area	1	1	2	1	11
63	Pradeep	3	1	7	6	3	1	2,3	2	2	1	2	2	1	3	7	5	4	2	2	13	7	1	tinea cruris	3	2	2	1	1
64	Balasubramanian	3	1	1,2,3,6	6	3	1	2,3,4	1	2	2	1	2	1	3	7	5	4	2	3	13	7	5	vulgaris gr	3	3	2	1	4
65	Dharmaraj	2	1	1,3,6	3	3	1	2,3	2	2	2	2	2	1	3	7	2	4	2	2	1	7	1	nea corpor	2	1	2	2	1
66	Sivachidambaram	3	1	4,6	6	5	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2,3	13	1	5,21	cne vulgari	2	4	2	1	4
67	Sasikumar	3	1	1,2,6	5	2	1	2	2	2	2	1	2	1	3	7	5	4	2	13	2	7	17	pyoderma	2	1	2	1	2
68	Chitharanjan	3	1	1	5	2	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	13	7	1	tinea cruris	2	1	2	1	1
69	Subin prabu	3	1	1,6	5	4	1	2	2	2	2	2	2	1	3	7	4	4	2	3	13	1	5	vulgaris gr	2	1,4	2	1	4
70	Rathnaprakash	3	1	1,2,3,5,6	4	3	1	2,3	2	2	1	2	2	1	3	7	3	4	2	3	2,5	7	3	scabies	3	1	2	1	6
71	Rajendran	3	1	1,6	5	4	1	2,3	2	2	2	2	2	1	3	7	4	4	2	2,3	1	7	1	, Seborrhei	2	1	2	1	1
72	Aathithyan	2	1	1	6	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	35	rrheic derm	3	1,2,3	2	1	5
73	Mahesh	3	1	1,6	5	3	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	1	7	1	inea corpor	2	1	2	1	1
74	Durga	3	2	1,3,6	6	3	1	2,3	2	2	2	2	2	1	1	2	5	4	2	2	13	7	1	nea corpor	3	1	2	1	1
75	Kowshik	3	1	7	2	5	1	2	2	2	2	1	2	1	3	7	1	4	2	2	13	7	4	Ichthyosis	1	7	2	3	21
76	Poolraja	3	1	1,5,6	3	3	1	2,3	2	2	2	2	2	1	3	7	2	4	2	2	1	7	1	tinea cruris	2	1	2	1	1

77	Arulsamy	3	1	1,2,3	5	3	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	1	7	1	nea corpor	2	1,2,3	2	1	1
78	Arumugaperumal	3	1	1,2,3,6	6	3	1,3	2,3	2	2	1	2	2	1	3	7	5	4	2	3,8	2	7	3	scabies	3	1	2	1	6
79	Parthiban	3	1	1,6	6	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	3	3,5	7	3	scabies	3	1	2	1	6
80	Prakash raj	2	1	1,2,3,4,5,6	5	3	1	2,3	2	2	1	2	2	1	3	7	5	4	2	13	3	7	3	scabies	3	1	2	1	6
81	Patturaji	3	2	1,2,3,4,5,6	6	4	1	2	2	2	2	1	2	1	1	1	5	4	2	1,2	13	7	21	riasis versic	3	1	2	1	1
82	Savanthakumar	3	1	1,6	4	4	1	2,3,6	2	2	2	1	2	1	3	7	3	4	2	2	1	7	35	rrheic derm	1	1	2	1	5
83	Ananthamoorthy	3	1	1,2,5,6	6	4	1	2	2	2	2	1	2	1	3	7	5	4	2	1	1	7	21	riasis versic	2	1	2	1	1
84	John praveen	1	1	7	6	3	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	1	7	1	tinea cruris	2	1	2	2	1
85	Ameer	3	1	1	3	4	1	2	2	2	2	2	2	1	3	7	1	4	2	3	13	7	23	rma with bi	1	7	2	1	21
86	Sumithra	2	2	1,2,4,6	2	3	1	2,3	2	2	1	2	2	1	1	4	1	4	2	3	2	7	3	scabies	3	1	2	1	6
87	Sharmila	3	2	1,2,4	3	3	1	2,3	2	2	1	2	2	1	1	1	2	4	2	3	5	7	3	scabies	2	1	2	1	6
88	Nandhini	3	2	1,6	5	4	1	2	2	2	2	2	2	1	1	5	4	4	2	2	1	7	50	ityriasis alb	1	7	2	2	5
89	Devalakshmi	1	2	1,4	3	4	1	2,3	2	2	2	2	2	1	2	7	2	4	2	2	13	7	58	ioral derma	2	1	2	1	5
90	Jeyajaron	3	1	1,6	5	3	1	2	2	2	2	2	2	1	3	7	4	4	2	1	13	7	21	riasis versic	2	1	2	1	1
91	Suganya	3	2	1,5,6	6	3	1	2	2	2	2	2	2	1	1	1	5	4	2	1	13	7	21	riasis versic	1	7	2	1	1
92	Esakkimuthu	3	1	1,6	5	3	1	2	2	2	2	2	2	1	3	7	5	4	2	1,2	13	7	21	riasis versic	1	7	2	1	1
93	Mohammed Shafiq	1	1	1,6	3	3	1	2,3	2	2	2	1	2	1	3	7	2	4	2	13	1,8	7	39	Intertrigo	2	1,6	2	1	1
94	Prema	3	2	1,6	3	3	1	2,3	2	2	1	2	2	1	1	1	1	4	2	3	3,5	7	3	scabies	4	1	2	1	6
95	Ashpak	3	1	1,2,3,6	4	4	1	2	2	2	1	2	2	1	3	7	3	4	2	4	1	7	2	oriasis vulg	3	1,2	2	1	8
96	Bejuna Beevi	3	2	1,2,3,6	3	4	1	2	2	2	2	2	2	1	1	1	3	4	2	1	1	7	21	riasis versic	1	7	2	1	1
97	Gokul	2	1	6	6	4	1	2	2	2	2	2	2	1	3	7	5	4	2	2	1	7	7	Xerosis	4	1,2,3	2	1	18
98	Esakkimuthu	2	1	1,3,6	3	3	1	2,3	2	2	2	1	2	1	3	7	1	4	2	3	2	7	3	scabies	3	1	2	1	6
99	Venkadesh	3	1	7	5	5	1	2	2	2	2	2	2	1	3	7	5	4	2	4	12	7	38	orokeratos	1	1	2	1	21
100	Srithar	3	1	1	6	4	1	2	1	2	2	1	1	1	3	7	5	4	2	3,5	13	7	32	eloidal acn	2	1	2	1	4
101	Sivasankar	2	1	7	4	2	1	2	2	2	2	2	2	1	3	7	4	4	2	3	7	7	16	Papular PR	1	7	2	1	3
102	Kishor	3	1	1,3	5	3	1	2,3	2	2	1	2	2	1	3	7	4	4	2	3	13	7	3	scabies	3	1	2	1	6
103	Maheshwari	2	2	1	4	4	1	2	2	2	2	2	2	1	1	2	3	4	2	1,2	13	7	21	riasis versic	1	7	2	1	1
104	Padmaraj	1	1	1	5	5	1	2	2	2	2	2	2	1	3	7	2	4	2	2	13	7	1	nea corpor	2	1	2	1	1
105	jeeva	1	2	1,3,4,6	6	2	1	2	2	2	1	2	2	1	2	7	5	4	2	6	3	7	20	derus derm	4	1	2	1	18
106	Bargavi	2	2	5,6	3	5	1	2	2	2	2	2	2	2	2	7	2	4	2	4	13	7	27	ucous epide	2	1,2	2	1	13
107	Mariammal	1	2	1,6	6	4	1	2,3	2	2	2	1	1	1	2	7	5	4	2	2	1	7	2	antar psoria	2	1,6	2	1	8
108	Vignesh	1	1	1,3	2	5	1	2	2	2	2	1	2	1	3	7	1	4	2	2	13	7	29	s depigmen	1	7	2	2	13
109	Saravanan	1	1	7	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	1	tinea cruris	3	1	2	1	1
110	Madhan	2	1	1	5	3	1	2,3	1	2	2	1	1	1	3	7	5	4	2	2	1	7	1	tinea cruris	2	1	2	1	1
111	Anandkumar	3	1	1,2,6	3	2	1	2,3,4,5	2	2	2	1	2	1	3	7	2	4	2	4	2	7	17	ndary pyod	2	1	2	1	2
112	jeniferjeyaprakash	3	1	1,2,3	3	3	1	2,3	2	2	2	2	2	1	3	7	3	4	2	3	3	7	3	enital scabi	3	1	2	1	6
113	balamurugan	3	1	1,3,6	4	2	1	2	2	2	2	2	2	1	3	7	3	4	2	13	1	7	33	ia with exfo	1	7	2	1	20
114	Ananth	2	1	1,2,3	2	3	1	2,3	2	2	2	1	1	1	3	7	1	4	2	2	1	7	1	nea corpor	2	1	2	1	1
115	Murugesh	2	1	1	3	3	1	2,3	2	2	1	2	2	1	3	7	2	4	2	3	5	7	3	scabies	3	1	2	1	6
116	Abubhakkar	3	1	1,2,6	3	4	1	2	2	2	2	1	2	1	3	7	2	4	2	4	12	7	40	morphoea	2	1	2	1	18
117	Balaji	2	1	1	6	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	14	13	7	30	Urticaria	2	1	2	1	7
118	Edwin	3	1	1	6	4	1	2	2	2	2	1	2	1	3	7	5	4	2	3	13	7	18	warts	1	7	2	2	3
119	Priyadharshini	3	2	1,5	6	4	1	2	2	2	2	1	2	1	1	1	5	4	2	4,5	13	7	13	Corn foot	3	1	2	1	18
120	Maharasi	2	2	1,2,3,4	4	3	1	2,3	2	2	2	2	2	1	1	1	4	4	2	3	5	7	3	scabies	2	1	2	1	6
121	Buvaneshwari	2	2	1,2,3,4	3	3	1	2,3	2	2	1	2	2	1	1	2	1	4	2	3	3	7	3	scabies	2	1	2	1	6
122	Poovarasi	3	2	1,2,3,6	6	3	1	2,3	2	2	1	2	2	1	1	1	5	4	2	3	5	7	3	scabies	3	1,3	2	1	6
123	vasanthakumar	3	1	1,6	3	3	1	2,3	2	2	2	2	2	1	3	7	1	4	2	2	13	7	1	nea corpor	2	1	2	1	1
124	somavignesh	3	1	1,2,3,5	5	3	1	2,4	2	2	2	2	2	1	3	7	5	4	2	3,8	13	7	5	acne vulgari	3	1	2	1	4
125	sankarram	3	1	1,2,3	2	3	1	2	2	2	2	2	2	1	3	7	1	4	2	1	1	7	21	riasis versic	1	1	2	2	1
126	meera	3	2	1,2	3	3	1	2,3	2	2	2	2	2	1	1	1	3	4	2	2	1	7	11	D to footw	2	1,2	2	1	5
127	jeyalakshmi	3	2	1,2,3	4	4	1	2,3	1	2	1	1	2	1	1	2	3	4	2	3	5,8	7	24	capitis with	3	1	2	1	6
128	pavithra	3	2	1,2,3,6	5	5	1,5	1,3	2	2	1	2	2	1	1	1	5	4	2	4	2	7	24	liculosis ca	3	1,4	2	1	6
129	kumari	3	2	7	6	4	1	2	2	2	2	2	2	1	1	1	5	4	2	3	13	7	18	rruca vulga	2	1	2	2	3
130	shanmugapriya	3	2	1,3	5	4	1	2,3	2	2	2	1	2	1	1	5	5	4	2	2	13	7	1	tinea cruris	2	1	2	1	1
131	karthik	2	1	1	6	4	1	2	2	2	2	2	2	1	3	7	5	4	2	3	13	7	18	rruca vulga	2	1	2	1	3
132	pandiyan raja	3	1	1,2,3,6	4	2	1	2	2	2	2	2	2	2	3	7	1	4	2	2	1	7	1	inea corpor	1	1	2	1	1
133	subbulakshmi	2	2	1	3	5	1	1	2	2	2	2	2	1	1	2	1	4	2	2	13	7	44	npound ne	1	1	2	1	13
134	rajarajeshwari	2	2	1,2,3,4,6	3	2	1	2,4	2	2	2	2	2	1	1	1	1	4	2	13	13	7	47	paronychia	4	1	2	1	12
135	Irudhayaraj	2	1	1,2,3,6	5	3	1	2	2	2	2	1	1	1	3	7	5	4	2	3,5	7	7	5	vulgaris gr	3	1	2	1	4
136	chinnu	3	2	1,2	5	2	1	2	2	2	1	2	2	1	3	7	4	4	2	2	1	7	1	inea corpor	2	1,2,3,6	2	1	1
137	mukundhan	2	1	1,2,3	4	4	1	2,4	2	2	2	1	2	1	3	7	4	4	2	3	13	1	5	vulgaris gr	3	1	2	1	4
138	balaji	1	1	1,2,3	3	4	1	3	2	2	1	1	2	1	3	7	2	4	2	3	3	7	24	liculosis ca	4	1,2	2	1	6
139	sheik	2	1	1	4	5	1	2,3	2	2	2	2	2	1	3	7	3	4	2	2	1	13	4	ellar ichth	4	3	2	1	21
140	ganesamoorthi	2	1	7	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	13	7	1	tinea cruris	2	1	2	1	1
141	gunavathy	1	2	1,2,3,4,6	3	3	1	2,3	2	2	1	1	2	1	1	5	2	4	2	3	13	7	24	liculosis ca	3	1	2	1	6
142	gomathi	3	2	1,2	5	4	1	2	2	2	2	2	2	1	3	7	5	4	2	1,2	1	7	21	riasis versic	3	1,2	2	2	1
143	eswar	2	1	1,2,4	5	4	1	2	2	2	2	1	1	1	3	7	5	4	2	2	1	7	1	orporis, tin	3	1,3	2	1	1
144	krishnan	3	1	1,2	3	2	1	2,5	2	2	2	1	2	1	3	7	3	4	2	3,4	2	7	17	pyoderma	2	1	2	1	2
145	syed rahman	3	1	1,2,3	3	2	1	2,4	2	2	2	2	2	1	3	7	3	4	2	5	13	7	17	Furuncle	2	1	2	1	2
146	saraswathy	3	2	1,2,4,6	6	2	1	2,4	2	2	2	1	2	1	1	1	5	4	2	13	13	7	47	paronychia	3	1	2	1	12
147	dhanush	2	1	1,2,3	3	3	1	2,3	2	2	2	1	2	1	3	7	2	4	2	3	2	7	24	liculosis ca	3	1	2	1	6
148	balaji	3	1	1,2,3	3	3	1	2	2	2	2	2	2	1	3	7	2	4	2	2	1	7	11	licular ecze	1	1	2	1	5
149	sakthi	2	1	1,2,3,6	4	4	1	2	2	2	2	2	2	1	3	7	2	4	2	2	13	7	1	uris, Tinea	3	1,2	2	1	1
150	yuvaraj	1	1	1	6	4	1	2	1	2	2	2	2	1	3	7	5	4	2	1,2	1	7	21	riasis versic	1	7	2	1	1
151	vel	2	1	1,2,6	6	4	1	2	2	2	2	1	1	1	3	7	5	4	2	2	1	7	1	orporis, tin	2	1	2	1	1
152	esakkimuthu	2	1	1,2,3,4	2	2	1	2,3	2	2	2	2	2	1	3	7	1	4	2	3	5	7	3	scabies	3	3	2	1	6
153	ashwin	1	1	1,2,3,4	3	3	1	2	2	2	2	2	2	1	3	7	1	4	2	3,4	5	7	24	liculosis ca	3	1	2	1	6
154	kiruthika	2	2	1,2,3,4	2	3	1	2,3	2	2	2	1	2	1	1	2	1	4	2	13	5	7	24	liculosis ca	3	1	2	1	6
155	rajathi	3	2	1	5	2	1	2,3,5	2	2	1	2	2	1	1	1	5	4	2	4	2	7	17	llous impet	4	1,2,6	2	1	2
156	keerthana	3	2	1,2	5	3	1	2,4	2	2	2	2	2	1	1	1	5	4	2	3	13	7	5	acne vulgari	2	1	2	1	4

157	lavanya	3	2	1,2,3	5	3	1	2	2	2	2	1	1	1	1	1	5	4	2	2	13	7	1	Tinea cruris	2	1,2	1	2	1
158	navaneedhan	2	1	1,3	6	4	1	2	2	2	2	1	2	1	3	7	5	4	2	13	4	7	56	ma gangrer	3	1,2	1	2	2
159	raghavi	3	2	1,2	5	4	1	2	2	2	2	2	2	1	1	1	5	4	2	3	13	1	5	vulgaris gr	2	1	2	1	4
160	maheshwari	3	2	1	3	3	1	2,3	2	2	2	2	2	1	1	1	1	4	2	1,2	1	7	21	riasis versic	1	7	2	2	1
161	arun	3	1	1,2	5	3	1	2	1	2	2	2	2	1	3	7	5	4	2	2	13	7	1	inea corpor	2	1	2	1	1
162	shanmugasundaran	2	1	1,2,3,4	2	2	1	2,3	2	2	2	2	2	1	3	7	1	4	2	6	2,3	7	17	llous impet	3	1,2	2	1	2
163	ramar	3	1	1,3,4,6	6	4	1	2,4	2	2	2	2	2	1	3	7	5	4	2	5	13	7	48	keloid	3	1	2	1	10
164	shruthi	2	2	1,2,3,4	3	3	1	2,3	2	2	2	1	2	1	1	6	1	4	2	3	13	7	3	scabies	2	1	2	1	6
165	rajeshwari	3	2	1,3,4,6	2	3	1	2	2	2	2	2	2	1	1	1	1	4	2	1,2	1	7	16	tyriasis ros	2	1	2	2	3
166	magesh	2	1	1,3,4	4	2	1	2,4	2	2	2	1	2	1	3	7	4	4	2	13	13	7	47	paronychia	2	1	2	1	12
167	padma	1	2	1,2,3	6	3	1	2	2	2	1	2	2	1	2	7	5	4	2	2,3	7	7	17	oderma , s	3	1	1	2	2
168	rosy	1	2	1	3	4	1	2	2	2	2	2	2	1	2	7	1	4	2	2	1	7	21	riasis versic	1	7	2	1	1
169	muthukumar	1	1	1,3	5	4	1	2	2	2	2	2	2	1	3	7	5	4	2	3	13	7	18	rruca vulga	2	1	2	1	3
170	lavanya	1	2	7	6	3	1	2	2	2	2	1	1	1	2	7	5	4	2	2	1	7	16	tyriasis ros	1	7	2	1	3
171	stella	3	2	1,2,4	2	3	1	2	2	2	2	2	2	1	1	1	5	4	2	2	1	7	1	inea corpor	3	1	2	1	1
172	subba	3	2	1,2,3,4,6	6	3	1	2,4	1	2	2	2	2	1	1	1	5	4	2	3,5	13	7	5	vulgaris gr	3	1	2	1	4
173	karthik	3	1	1,2,3	3	4	1	2	2	2	2	2	2	1	3	7	1	4	2	4	1	7	35	rrheic derm	2	1,4	2	1	5
174	aravind	1	1	7	3	4	1	2,3	1	2	2	1	2	1	3	7	2	4	2	2	1	7	11	erotic eczer	1	1	2	1	5
175	shyam	1	1	1,3	2	3	1	2,3	2	2	2	2	2	1	3	7	1	4	2	13	5	7	24	liculosis cap	2	1	2	1	6
176	vignesh	1	1	1,4	2	3	1	2,3	2	2	2	1	2	1	3	7	1	4	2	3	8	7	24	liculosis cap	3	1	2	1	6
177	sarbini	1	2	1,3	4	2	1	2	2	2	1	2	2	1	2	7	2	4	2	3	5	7	3	Scabies	3	1	2	1	6
178	kannika	2	2	1,2,3,6	3	3	1	2,3	2	2	2	1	2	1	3	7	2	4	2	3	13	7	51	PMLE	4	2	2	1	14
179	jeyasri	3	2	1,2	4	3	1	2,3	1	2	1	2	2	1	1	1	3	4	2	2	1	7	1	Tinea cruris	3	1	2	1	1
180	tamilselvi	3	2	1,4,6	3	2	1	2,3	2	2	2	2	2	1	1	1	2	4	2	3	13	7	52	ect bite alle	2	1	2	1	18
181	punathi	1	2	1,2,4	3	2	1	2	1	2	2	2	2	1	2	7	1	4	2	14	13	7	30	urticaria	2	1	2	1	7
182	balamurugan	3	1	1,3,4	5	3	1	2,3	1	2	1	1	1	1	3	7	4	4	2	2	13	7	1	Tinea cruris	2	1	2	1	1
183	aathimuthu	3	1	1,3	6	5	1	2,3	1	2	1	1	2	1	3	7	5	4	2	3	5	7	3	Scabies	4	1	2	1	6
184	jenifer jayaprakash	3	1	1	5	3	1	2,3	1	2	1	1	2	1	3	7	5	4	2	3	5	7	3	Scabies	3	1	2	1	6
185	pavithra	3	2	7	6	2	1	2,4	2	2	2	2	2	1	1	1	5	4	2	6	3	7	49	erpes labial	2	1	2	1	3
186	saranya	1	2	1,3,4	6	3	1	2,3	1	2	1	2	2	1	2	7	5	4	2	3	5	7	3	scabies	3	1	2	1	6
187	selvakripa	3	2	1,3	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2,3	13	7	1	uris with id	2	1,6	2	1	1
188	murugavel raj	2	1	1	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	3	13	7	33	Miliaria rubr	3	1,3	2	1	20
189	murugeshwari	3	2	1,2,3	6	4	1	2,3	2	2	2	2	2	1	1	1	5	4	2	4	13	7	11	D to footwe	2	1	2	1	5
190	selvakumar	3	1	1,2,3,4,6	6	4	7	7	2	2	2	2	2	1	3	7	5	4	2	13	13	7	53	antar hype	4	1,2,3,4	2	2	20
191	muthuvel	1	1	7	5	5	1	2	2	2	2	2	2	1	3	7	4	4	2	3	13	7	23	hrynoderm	1	7	2	1	21
192	mathuraja	3	1	1,3	6	4	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	12	7	1	nea incogni	2	1,5,6	2	1	1
193	anbarasan	3	1	1,3	5	4	1	2,3	2	2	1	2	2	1	3	7	5	4	2	3	1,2,5	7	3	Scabies	2	1	2	1	6
194	vijay pradap	3	1	1,3,6	6	4	1	2	2	2	2	1	2	1	3	7	5	4	2	2,3	13	1	1,5	s grade 2, t	3	1	2	1	4
195	varun	3	1	1,2,3,4	3	2	1	2	1	2	2	2	2	1	3	7	1	4	2	3	13	7	5	Truncal acn	1	7	2	1	4
196	kathar mydeen	3	1	1	6	4	1	2,3	2	2	1	1	1	1	3	7	5	4	2	2	13	7	1	orporis, tine	3	1	2	1	1
197	duraipandi	2	1	1,3	3	4	1	2,3	2	2	2	1	2	1	3	7	2	4	2	3	5	7	3	Scabies	4	1,2	2	1	6
198	ponmurugan	2	1	1,2	4	4	1	2,3	2	2	2	1	2	1	3	7	2	4	2	3	5	7	3	Scabies	3	1	2	1	6
199	suntharapandiyan	3	1	1,3	3	4	1	2	2	2	2	2	2	1	3	7	2	4	2	3	13	7	5	acne vulgari	1	7	2	1	4
200	mahalakshmi	2	2	1,3	6	2	1	2	2	2	2	2	2	1	1	2	5	4	2	4,8	13	7	20	derus derm	4	2	2	2	18
201	anandhi	2	2	1,3	6	4	1	2,3	2	2	2	2	2	1	1	1	5	4	2	2	13	7	1	ruris, tinea	3	1,2	2	1	1
202	ramanathan	2	1	1	3	4	1	2	2	2	2	2	2	1	3	7	2	4	2	2	1	7	50	ityriasis alb	1	7	2	1	5
203	indra	3	2	1,3	6	2	1	2	2	2	1	2	2	1	1	1	5	4	2	6	2	7	26	aricella zost	4	1,2,4	2	1	3
204	karpagam	1	2	1,2	5	4	1	2,3	2	2	2	1	2	1	2	7	5	4	2	4	1	7	2	antar psoria	2	1	2	1	8
205	anandhi	3	2	7	4	4	1	2	2	2	2	2	2	1	1	1	2	4	2	2	1	7	21	riasis versic	2	1	2	1	1
206	manikandan	2	1	1	5	4	1	2,3	2	2	2	1	2	1	3	7	5	4	2	2	1	7	1	Tinea cruris	2	1	2	1	1
207	syed	3	1	1	3	4	1	2	2	2	2	1	1	1	3	7	2	4	2	1	13	7	21	riasis versic	1	7	2	1	1
208	aslam	1	1	1,3	5	2	1	2	1	2	2	2	1	1	3	7	3	4	2	3	13	7	17	folliculitis	3	1	2	1	2
209	jesim	2	1	1,3,4	5	3	1	2,3	2	2	1	2	2	1	3	7	5	4	2	3	13	7	3	Scabies	5	1	2	1	6
210	santhya	2	2	1,3	3	4	1	2,3	2	2	2	2	2	1	1	1	1	4	2	3	5	7	11	D to footwe	2	1	2	1	5
211	soumya	3	2	7	6	3	1	2,3	2	2	2	2	2	1	1	1	5	4	2	3	1	7	37	pholyx ecz	2	1	2	2	5
212	rajeshwar	2	1	1	6	4	1	2,3	2	2	1	1	1	1	3	7	5	4	2	2	13	7	1	tinea corpo	2	1	2	1	1
213	sumithra	2	2	1,2,3	2	3	5	2,4,5	2	2	2	2	2	1	1	1	1	4	2	5	13	7	1	on(Tinea ca	2	1	2	1	1
214	sunitha	3	2	1,2,3	6	4	1	2	1	2	2	1	2	1	1	1	5	4	2	3,8	7	1	5	vulgaris, Acı	2	1	2	1	4
215	vanitha	3	2	1,4	4	3	1	2	1	2	2	2	2	1	1	1	3	4	2	3	7	7	5	garis with a	2	1,2,3,6	2	1	4
216	ashwin	1	1	2,3	6	2	1	2	2	2	2	2	2	1	3	7	5	4	2	3	13	7	17	folliculitis	3	1	2	1	2
217	abdul	2	1	1	3	2	1	2,3	2	2	2	1	2	1	3	7	1	4	2	14	13	7	30	urticaria	3	1	2	1	7
218	mahesh	3	1	1,2,3	4	2	1	2,3	2	2	2	2	2	1	3	7	2	4	2	4	2	7	17	pyoderma	3	1	2	1	2
219	vanamayil	2	2	1,2,3	5	4	1	2,3	2	2	2	1	1	1	1	1	5	4	2	4	1	7	2	antar psoria	2	1	2	1	8
220	shruthi	3	2	1,3	5	5	1	2	2	2	2	2	2	1	1	1	4	4	2	3,5	7	7	5	keloidal acn	4	1,2	2	1	4
221	ashwin	3	1	1,4	4	2	1	2,3	2	2	2	2	2	1	3	7	2	4	2	13	2,3	7	17	pyoderma	3	2	2	1	2
222	esakkimuthu	1	1	1	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	3	13	7	3	enital scabi	2	1	2	1	6
223	gopal	3	1	1	4	2	1	2,3	2	2	2	2	2	1	3	7	2	4	2	2	1	7	1	nea corpor	3	1	2	1	1
224	shanthi	2	2	1,3	4	2	1	2	2	2	2	1	2	1	1	1	2	4	2	14	13	7	30	cute urticar	3	1	2	1	7
225	poomalai	1	2	1,2,3	3	5	1	2	2	2	2	1	2	1	1	2	1	4	2	5	13	7	14	/pertrophic	1	1	2	1	8
226	manju	2	2	7	5	4	1	2,3,5	2	2	2	2	2	1	1	1	5	4	2	4	13	7	11	ironic eczer	2	1	2	1	5
227	rajalakshmi	3	2	1	5	2	1	2	2	2	2	2	2	1	1	1	4	4	2	2	13	7	11	ACD to soap	2	1,4	2	1	5
228	subash	2	1	1	2	2	1	2,3	2	2	2	1	2	1	3	7	1	4	2	13	2	7	17	impetigo	2	1	2	1	2
229	harini	3	2	1,3,4,6	5	4	1	2	2	2	2	1	1	1	1	1	4	4	2	3	13	1	5	cne with sc	2	1	2	2	4
230	subashini	2	2	1,6	4	3	1	2,4	2	2	2	2	2	1	1	1	2	4	2	13	13	7	47	paronychia	3	1	2	1	12
231	david	2	1	1,3	3	4	1	2,3	2	2	2	2	2	1	3	7	2	4	2	3	13	7	14	ichen planu	2	1	2	1	8
232	sumathi	3	2	1,6	5	4	1	2,3,4	2	2	2	1	1	1	1	1	5	4	2	4	1	7	2	antar psoria	3	1	2	1	8
233	sumanth	2	1	1,3,6	4	4	1	2,3	2	2	2	1	2	1	3	7	4	4	2	14	13	7	30	urticaria	2	1	2	1	7
234	praveen	3	1	1	5	3	1	2	2	2	2	2	2	1	3	7	5	4	2	3	13	1	5	vulgaris gr	4	1	2	1	4
235	ragu	2	1	1,5	6	4	1	2,3	2	2	2	1	2	1	3	7	5	4	2	3	13	7	41	eratosis pila	1	7	2	1	21
236	mani	3	2	7	4	4	1	2	2	2	2	1	1	1	1	1	3	4	2	3	13	7	23	hrynoderm	1	1	2	2	21

237	seethalakshmi	2	2	1	6	3	1	2,3,5	2	2	2	2	2	1	1	5	5	4	2	2	1	7	11	d to deterg	3	1	2	1	5
238	eswari	1	2	1,6	3	2	1	2,3,4	2	2	2	2	2	1	1	1	2	4	2	4	2	7	17	llous impet	2	3	2	1	2
239	raguraman	3	1	1,6	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	39	intertrigo	2	1,6	2	1	1
240	jothy	3	2	1,2,6	5	4	1	2,3	2	2	2	1	1	1	1	1	3	4	2	2	1	7	1	tinea cruris	3	1	2	1	1
241	subramanian	3	1	1,2,3,4	4	2	1	2	1	2	2	1	1	1	3	7	3	4	2	3,8	13	7	5	acne vulgari	4	1	2	1	4
242	jeyalakshmi	3	2	7	5	3	1	2	2	2	2	2	2	1	1	1	4	4	2	1	13	7	21	riasis versic	2	1	2	1	1
243	manonmani	3	2	1,6	6	3	1	2	2	2	2	2	2	1	1	1	5	4	2	13	3	7	10	ted keratol	2	1	2	1	2
244	sundaravalli	2	2	1,2,3,6	5	3	1	2,3	2	2	1	2	2	1	3	7	4	4	2	4	2	7	17	pyoderma	3	1	2	1	2
245	lavanya	2	2	1,2,4,6	6	3	1	2	2	2	2	2	2	1	1	1	5	4	2	2	1	7	16	tyriasis ros	1	7	2	1	3
246	senthamarai	3	2	1,2,3	5	5	5	1	2	2	2	1	1	1	1	1	5	4	2	13	13	7	34	ecia univer	2	1	2	1	11
247	Raman	2	1	1,6	4	3	1	2	2	2	2	1	1	1	3	7	3	4	2	3	13	7	5	acne vulgari	3	1	2	1	4
248	Manonmani	2	2	7	2	4	1	2	2	2	2	2	2	1	1	1	1	4	2	1	13	7	21	riasis versic	2	1	2	2	1
249	Gopichand	3	1	1,3,6	6	3	1	2,4	2	2	2	2	2	1	3	7	5	4	2	4	2	7	17	pyoderma	2	1,4	2	1	2
250	Muthuselvi	3	2	1,2,3,4,6	6	3	1	2	2	2	2	2	2	1	1	1	5	4	2	2	1	7	16	tyriasis ros	2	1	2	1	3
251	Pappathi	3	2	1	6	2	1	2,4	2	2	2	2	2	1	1	1	5	4	2	6	2	7	55	herpes zoste	3	1	2	1	3
252	Mani	1	2	1,4	5	3	1	2,3	2	2	1	2	2	1	1	5	5	4	2	3	13	7	3	scabies	2	1	2	1	6
253	Murali	2	1	1,2,6	5	3	1	2,3	1	2	2	1	1	1	3	7	5	4	2	2	1	7	1	nea corpor	3	1,2	2	1	1
254	Arumugam	3	1	1,2,3,4,6	4	3	1	2	2	2	2	2	2	1	3	7	2	4	2	2	1	7	16	tyriasis ros	2	1	2	2	3
255	Gunaselvi	2	2	1,3,6	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	1	nea corpor	4	1	2	1	1
256	Muthuselvan	3	1	1,2,5	6	3	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	1	7	1	nea corpor	3	1	2	1	1
257	Raja	3	1	1,3,6	5	3	1,3	2,3	2	2	1	2	2	1	3	7	5	4	2	3	2,3,5	7	3	scabies	3	1	2	1	6
258	Samuel	3	1	1	3	3	1	2,3	2	2	2	1	1	1	3	7	2	4	2	2	1	7	1	tinea cruris	3	1	2	1	1
259	Sneha	3	2	1,3	4	3	1	2,3	2	2	1	2	2	1	1	1	2	4	2	3	3	7	3	scabies	2	1	2	1	6
260	Kousalya	2	2	1,6	3	3	2	2,3	1	2	1	2	2	1	3	7	1	4	2	3	3	7	3	scabies	4	1,2	2	1	6
261	Atlin mary	2	2	1	5	4	1	2,3	2	2	1	2	2	1	1	1	5	4	2	3	13	7	11	CD to ceme	2	1	2	1	5
262	veeralakshmi	2	2	7	4	3	1	2	2	2	2	1	2	1	1	1	3	4	2	2	1	7	16	tyriasis ros	1	1	2	1	3
263	Dhanush	3	1	1	4	3	1	2,3	2	2	1	2	2	1	3	7	3	4	2	3	2	7	3	scabies	4	1	2	1	6
264	Harikrishnan	3	1	1	5	4	1	2,3	2	2	2	1	2	1	3	7	5	4	2	4	13	7	11	ironic eczer	3	1	2	1	5
265	Kasi	1	1	1	3	3	1	2,3	2	2	2	1	1	1	3	7	2	4	2	2	13	7	39	intertrigo	2	1	2	1	1
266	Sanummammal	3	2	1	4	3	1	2	2	2	2	2	2	1	1	1	3	4	2	14	13	7	30	urticaria	2	3	2	1	7
267	Arunkumar	3	1	7	5	3	1	2	2	2	2	2	2	1	3	7	4	4	2	1,2	1	7	21	riasis versic	2	1	2	2	1
268	Muthukumar	1	1	1,3	4	2	1	2	2	2	2	2	2	1	3	7	4	4	2	4	2	7	17	impetigo	2	1	2	1	2
269	Ashwinimayil	3	2	1,3	5	3	1	2,3	2	2	1	1	2	1	1	1	5	4	2	2,4	1	7	11	CD to ceme	2	1	2	1	5
270	Kevin raj	1	1	1,2	3	5	1	2	2	2	2	2	2	1	3	1	1	4	2	2	13	7	29	s depigmen	1	7	2	1	13
271	Natarajan	3	1	1,3	3	4	1	2	2	2	2	1	2	1	3	7	2	4	2	4	12	7	40	ea(En coup	2	6	2	2	18
272	Ranjan	3	1	1,2,4	6	4	1	2	2	2	2	1	2	1	3	7	5	4	2	3	7	7	5	vulgaris gr	3	1,3	2	1	4
273	Kalaiarasi	3	2	1,3	3	4	1	2	2	2	2	1	1	1	1	1	3	4	2	4	13	7	2	antar psoria	2	1	2	1	8
274	Prabu	3	1	1,2	6	2	1	2,3	2	2	2	2	1	1	3	7	5	4	2	3	13	7	35	rrheic derm	1	1	2	1	5
275	Nahar surya	2	2	1	4	3	1	2,3,4,5	2	2	2	2	2	1	1	1	4	4	2	6	2	7	17	pyoderma	3	1	2	1	2
276	Sivaranjini	3	2	1	4	3	1	2,3	2	2	2	1	1	1	1	1	3	4	2	2	1	7	1	tinea cruris	4	1	2	1	1
277	Maniselvan	3	1	1,2	6	5	1,5	2,6	2	2	1	1	2	1	3	7	5	4	2	3,4	1,6	13	63	xos syndro	4	1,2,4	2	2	18
278	Ashwini	3	2	1,2	4	3	1	2,3	2	2	2	2	2	1	1	1	3	4	2	2	1	7	1	nea corpor	3	1	2	1	1
279	Ravikishore	1	1	1,2,3	4	3	1	2,3	2	2	1	2	2	1	3	7	2	4	2	3	3	7	3	scabies	4	1	2	1	6
280	syed ali fathima	3	2	1,2	3	3	1	2,3	2	2	2	2	2	1	1	1	2	4	2	2	1	7	35	rrheic derm	2	1,3	2	1	5
281	Anburaj	2	1	1,2	5	2	1	2,3,4,5	2	2	2	2	2	1	3	7	5	4	2	4	2	7	17	Pyoderma	2	1	2	1	2
282	rajesh	3	1	1,3,4	6	4	1	2,4	2	2	2	1	1	1	3	7	5	4	2	3,5	13	7	5	dulocystic a	3	1	2	1	4
283	santhi	1	2	7	5	4	1	2,4	2	2	2	1	2	1	2	7	5	4	2	3	7	7	5	vulgaris gr	2	1	2	1	4
284	santhosh	1	1	1,3	2	3	1,3	2,3	2	2	1	2	2	1	3	7	1	4	2	3,5	5	7	3	enital scabi	3	1	2	1	6
285	abinaya	1	2	1	4	4	1	2,3	2	2	2	1	2	1	1	1	2	4	2	4	8	7	54	simplex chr	2	1	2	1	5
286	vignesh	1	1	1,3	3	3	1	2,3	2	2	1	2	2	1	3	7	2	4	2	3	13	7	3	scabies	2	1,3	2	1	6
287	Monika	2	2	1,2,3,4	6	4	1	2,4	2	2	2	1	2	1	1	1	5	4	2	3	13	1	5	vulgaris gr	3	1	2	1	4
288	Selvakumari	2	2	1,2,4,6	2	3	1	2,3	2	2	2	2	2	1	1	1	1	4	2	3,4	2	7	3	scabies	3	1,4	2	1	6
289	Vignesh	1	1	1	6	3	1	2,3	2	2	1	2	2	1	3	7	5	4	2	3	13	7	3	scabies	3	1,3	2	1	6
290	chendur	3	1	1,2,3	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	35	rrheic derm	1	1	2	1	5
291	Raja mohammad	3	1	1	6	3	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	1	7	39	intertrigo	2	1	2	1	1
292	anjel	1	2	1	5	3	1	2,3	2	2	2	2	2	1	2	7	5	4	2	3	13	7	3	enital scabi	2	1	2	1	6
293	Kaveri	3	2	1	3	4	1	2,3	2	2	2	1	2	1	1	1	2	4	2	3	13	7	14	ichen planu	3	1,2	2	1	8
294	selvamani	3	1	1,2,5	6	3	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	1	7	1	nea corpor	3	1	2	1	1
295	sinchu	1	2	1	5	3	1	2,3	2	2	2	1	1	1	2	7	5	4	2	2	1	7	1	nea corpor	2	1	2	1	1
296	sankari	3	2	1,2	2	2	1	2	2	2	1	2	2	1	1	1	1	4	2	3,6	5	7	26	aricella zost	3	1,2	2	1	3
297	Kavitha	3	2	1,2	6	3	1	2,4	2	2	2	2	2	1	1	1	5	4	2	3	13	7	5	vulgaris gr	1	1	2	1	4
298	Noorjahan	1	2	1,2,3	5	3	1	2,3	2	2	1	2	2	1	1	1	5	4	2	3	3	7	3	scabies	2	1	2	1	6
299	Pushpa	2	2	1,2,6	3	4	1	2,3	2	2	2	1	2	1	2	7	2	4	2	13	13	7	24	liculosis ca	2	1	2	1	6
300	kaliappan	2	1	1,3	4	3	1	2,3	2	2	2	1	2	1	3	7	3	4	2	14	13	7	30	Urticaria	2	1	2	1	7
301	Sheik mohaideen	3	1	1,2,3	2	5	1	2,3	2	2	2	2	2	1	3	7	1	4	2	4	1,4	7	2	near Psoria	2	1	2	1	8
302	Rooban	3	1	1	5	3	1	2,3	2	2	2	1	1	1	3	7	5	4	2	2	1	7	1	nea corpor	2	1	2	1	1
303	Sharan	3	1	7	5	4	6	2	2	2	2	2	2	1	3	7	5	4	2	13	13	7	59	ychomyco	1	7	2	1	12
304	arun kumar	3	1	7	6	2	1	2,3	2	2	1	1	2	1	3	7	5	4	2	6	2	7	26	aricella zost	4	1,2	2	1	3
305	Muthukumar	1	1	1,2,3	3	3	1	2,5	2	2	2	1	2	1	3	7	2	4	2	3	2	7	17	llous impet	2	1	2	1	2
306	vasugi	3	2	1,4	5	3	1	2,4	2	2	2	1	2	1	1	1	5	4	2	3	13	1	5	acne vulgari	3	1,2,3	2	1	4
307	Malathi	2	2	7	6	4	1	2	2	2	2	2	2	1	1	2	5	4	2	1	13	7	21	riasis versic	1	7	2	1	1
308	Ishwamayil	3	2	1,2,3,6	5	3	1	2,3	2	2	2	1	1	1	1	1	5	4	2	2	1	7	35	rrheic derm	3	1	2	1	5
309	Kevin raj	1	1	7	3	5	1	2	2	2	2	2	2	1	3	7	2	4	2	13	7	1	43	us comidor	1	6	2	1	13
310	Nagarajan	3	1	1,2,3,6	5	4	1	2,4	2	2	1	2	2	1	3	7	5	4	2	13	6	7	57	lantar fissu	2	1	2	1	18
311	parvathi	2	2	1	6	2	1	2,4	1	2	2	1	2	1	1	1	5	4	2	13	2,4	7	49	erpes labial	3	1	2	1	3
312	Ranjan	3	1	1,2	4	3	1	2,4	2	2	2	2	2	1	3	7	4	4	2	3,8	13	7	5	vulgaris gr	1	1	2	1	4
313	kanimozhi	3	2	1,2,3	2	4	1	2	2	2	2	1	2	1	1	1	1	4	2	4	1	7	2	psoriasis	2	1,2	2	1	8
314	prabu	3	1	1	3	3	1	2,3	2	2	2	1	2	1	3	7	3	4	2	2	1	7	35	rrheic derm	2	1	2	1	5
315	sabarimuthu	3	1	1,2	5	3	1	2,3	1	2	2	1	2	1	3	7	5	4	2	14	13	7	30	Urticaria	3	1	2	1	7
316	sundar	3	1	1,2,3	5	2	1	2,3	2	2	2	2	2	1	3	7	5	4	2	3	3	7	3	scabies	3	1,3	2	1	6

317	sivaprasanth	3	1	7	4	4	1	2	2	2	2	2	2	1	3	7	4	4	2	3	13	7	41	eratosis pila	2	1	2	1	21
318	Jeysingh	3	1	1,2	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	2	1	7	1	nea corpor	2	3	2	1	1
319	surya	3	2	1,2,3	6	3	1	2,3,4	2	2	2	1	2	1	1	1	5	4	2	3,5	13	7	5	vulgaris gr	2	1	2	1	4
320	subitha	3	2	1,2,3,5,6	3	2	1	2,3,5	2	2	2	1	2	1	1	1	2	4	2	4	2	7	17	llous impet	3	1,2	2	1	2
321	sundhar	3	1	1,2	5	4	1	2,4	2	2	1	1	1	1	3	7	5	4	2	13	6	7	57	antar fissur	3	1	2	1	18
322	Piliaraj	3	1	1,2	5	3	1	2,3	2	2	1	2	2	1	3	7	5	4	2	2	1	7	1	tinea cruris	2	1	2	1	1
323	revathi	3	2	1	5	4	1	2	2	2	2	2	2	1	1	1	5	4	2	2	13	7	6	gmental viti	4	1,3,4	2	1	9
324	jaffer	2	1	1,2,3	4	3	1	2,3	2	2	2	2	2	1	3	7	4	4	2	3	13	7	5,9	truncal acn	2	1	2	1	4
325	chithra	2	2	1,2	4	3	1	2,3	2	2	2	2	2	1	1	1	3	4	2	3	5	7	3	enital scabi	3	1,3	2	1	6
326	sithi	3	2	1	2	3	1	2	2	2	2	2	2	1	1	1	1	4	2	3	13	7	12	cum conta	1	7	2	1	3
327	thangaarthi	3	2	1,3	6	3	1	2,3	2	2	2	2	2	1	1	1	5	4	2	2	1	7	35	rrheic derm	2	1	2	1	5
328	pramila	3	2	1,2,3,4	6	4	1	2,3	2	2	2	2	2	1	1	1	5	4	2	2	1	7	35	rrheic derm	3	1	2	1	5
329	sathish kumar	3	1	1,2,4	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	14	13	7	30	Urticaria	2	1	2	1	7
330	Indumathi	2	2	1,2	6	2	1	2,3	2	2	2	2	2	1	1	5	5	4	2	4	1	7	2	Psoriasis	2	1,2,3,6	2	1	8
331	Pon abisha	2	2	1,2	3	3	1	2,3	2	2	2	2	2	1	1	2	2	4	2	2	1	7	1	tinea cruris	3	1	2	1	1
332	malathy	3	2	1,2,3	4	3	1	2,3	2	2	2	1	1	1	1	1	3	4	2	2	1	7	1	nea corpor	2	1	2	1	1
333	Panja varman	3	2	1,4	3	2	1	2	2	2	1	2	2	1	1	1	1	4	2	3,6	3	7	26	aricella zost	3	1	2	1	3
334	sangeetha	3	2	1,3,4	3	2	1	2,3	2	2	1	2	2	1	1	1	2	4	2	3	3	7	3	scabies	2	1	2	1	6
335	pavithra	1	2	1	5	2	1	2,4	2	2	1	1	2	1	1	5	5	4	2	6	3	7	20	beetle der	3	1	2	1	18
336	Thangaraj	3	1	1,3,4	3	3	1	2,3	2	2	2	1	2	1	3	7	2	4	2	3	3	7	3	scabies	3	1	2	1	6
337	jeyasri	1	2	1,3,4	3	3	1	2,3	2	2	2	2	2	1	2	7	4	4	2	2	1	7	1	tinea cruris	2	1	2	1	1
338	kalathiya	3	1	1,3	5	3	1	2,3	2	2	2	2	2	1	3	7	5	4	2	3	3	7	3	scabies	3	1	2	1	6
339	maharajan	3	1	1	3	3	1	2,3	2	2	2	2	2	1	3	7	3	4	2	2	1	7	1	Tinea cruris	3	1	2	1	1
340	Muthu	3	1	1,3	3	3	1	2,3	2	2	2	1	2	1	3	7	3	4	2	2	1	7	1	nea corpor	3	1	2	1	1
341	Mahaboop	3	1	1	3	3	1	2,3	2	2	1	2	2	1	3	7	2	4	2	3	3	7	3	enital scabi	2	1	2	1	6
342	Mallika	3	2	1,2,3,4,5,6	5	2	1	2,4	2	2	2	2	2	1	1	1	5	4	2	5	13	7	61	genic granu	3	1	2	1	18
343	Vijay	3	1	1,2,3,4,5,6	3	5	1,5	2,6	2	2	1	1	2	1	3	7	5	4	2	3,4	1,6	13	63	xos syndro	4	1,2,3,4,6	2	2	18
344	Sindhamudhan	2	1	1,2,3,4,5,6	5	4	1	2	2	2	2	2	2	1	3	7	5	4	2	3	13	7	23	hrynoderm	1	7	2	1	21
345	Siddhiqa parvin	3	2	1,2,3,4,5,6	5	3	1	2	2	2	2	2	2	1	1	1	5	4	2	13	1	7	60	colysis exfol	1	7	2	1	21
346	Arunkumar	3	1	1,2,3,4,5,6	3	3	1	2,3	2	2	2	2	2	1	3	7	2	4	2	3	5	7	52	IBA	1	1	2	1	18
347	Ganesan	2	1	1,2,3,4,5,6	4	5	1	2,3	2	2	2	2	2	1	3	7	3	4	2	3	13	13	65	xanthoma e	4	3	2	2	10
348	Paruvadharvardhini	3	2	1,2,3,4,5,6	5	5	1	2	2	2	2	2	2	1	1	1	5	4	2	4	13	13	66	rofibromat	3	2	2	1	23
349	Sudalaikani	3	1	1,2,3,4,5,6	5	4	1,6	2	2	2	2	2	2	1	3	7	5	4	2	1,2,3	13	13	67	nerous scler	4	1,2,3	2	2	23
350	Indumathi	1	2	1,2,3,4,5,6	4	3	1	2	2	2	2	2	2	1	2	7	4	4	2	13	13	6	15	ar focal elas	2	1	2	2	10
351	Sivasubramanian	3	1	1,2,3,4,5,6	5	4	1,6	2	2	2	1	2	2	1	3	7	5	4	2	2	13	13	68	ia pigment	4	3	2	2	9
352	Nishanth	3	1	1,2,3,4,5,6	5	5	1,5	2	2	tuberculos	1	1	2	1	3	7	5	4	2	3	3,7	13	19	yria cutane	4	3	2	2	19
353	Velayudham	3	1	1,2,3,4,5,6	5	5	1	2	2	2	2	2	2	1	3	7	5	4	2	1,2	13	13	69	chetti Jada	1	3	2	2	9
354	Santhiya	3	2	1,2,3,4,5,6	4	5	1	2	2	2	1	2	2	1	1	1	5	4	2	1,3	13	13	67	nerous scler	4	3	2	1	23
355	Rajalakshmi	3	2	1,2,3,4,5	6	5	1	2	2	hrotic synd	2	2	2	1	1	5	5	4	2	1,2,5	13	13	66	rofibromat	3	2	2	1	23
356	Manikandan	2	1	1,2,3,4,5,6	3	5	1	2	2	2	2	1	2	1	3	7	3	4	2	1,2,3,4	13	13	70	ng Degos d	3	1,2,3,5,6	2	2	9
357	Denish	2	1	1,2,3,4,6	3	5	1	2	2	2	2	2	2	1	3	7	2	4	2	2	13	13	62	BTHD	3	1,4	2	2	2
358	Moosai	3	1	1,2,3,4	5	5	1	2	2	2	2	2	2	1	3	7	5	4	2	4	13	13	62	TTHD	3	1,2,3,4	2	1	2

KEY TO MASTER CHART

Age

1	10-12
2	13-15
3	16-19

Gender

1	Male
2	Female

Education

1	Uneducated
2	Primary school(1-5)
3	Middle school(6-8)
4	High school(9,10)
5	Highersecondary(11,12)
6	Graduate

Presentation

1	Skin
2	Oral mucosa
3	Genital mucosa
4	Perianal
5	Hair
6	Nail
7	Sweating

Complaints

1	Asymptomatic
2	Skin/nail/mucosa lesions
3	Itching
4	Pain
5	Discharge
6	Hairfall
7	Sweating

Site

1	Scalp
2	Face
3	Neck
4	Chest
5	Abdomen
6	Upper back
7	Lower back
8	Upper Limb
9	Lower Limb
10	Genitals
11	Gluteal region
12	Palms
13	Soles
14	Axilla
15	Groin
16	Fingers
17	Toes
18	Nails

Past History/Family history

1 Yes

2 No

Treatment History

1 Yes

2 No

Duration

1 Hours

2 Days

3 Weeks

4 Months

5 Years

Medical History

1 Nil

2 Diabetes

3 Hypertension

4 Asthma

5 Tuberculosis

6 Epilepsy

7 Jaundice

8 Others

Use of topical steroids

1 Yes

2 No

Developmental History

1 Normal

2 Abnormal

Attained menarche

1 Yes

2 No

3 Not applicable

Menstrual abnormalities

1 Nil

2 Menorrhagia

3 Polymenorrhoea

4 Metrorrhagia

5 Oligomenorrhoea

6 Hypomenorrhoea

7 Not applicable

Sexual maturity rating

1 Tanner stage 1

2 Tanner stage 2

3 Tanner stage 3

4 Tanner stage 4

5 Tanner stage 5

Personal History

1 Alcohol

2 Smoking

3 Both

4 Nil

Exposure History

1 Present

2 Absent

Primary lesion

1 Macule

2 Patch

3 Papule

4 Plaque

5 Nodule

6 Vesicle

7 Bulla

8 Pustule

9 Abscess

10 Cyst

11 Petechiae

12 Ecchymosis

13 Nil

14 weal

Secondary lesion

1 Scale

2 Crust

3 Erosion

4 Ulcer

5 Excoriation

6 Fissure

7 Scar

8 Lichenification

9 Poikiloderma

10 Eschar

11 Sclerosis

Special lesion

1 Comedones

2 Burrow

3 Telangiectasia

4 Target lesion

5 Sinus

6 Striae

7 Nil

DLQI score

1 0-1 (no effect)

2 2-5 (small effect)

3 6-10 (moderate effect)

4 11-20 (very large effect)

5 21-30 (extremely large effect)

Domain severely affected

1 Symptoms and feelings(1,2)

2 Daily activities(3,4)

3 Leisure(5,6)

4 Work and school(7)

5 Personal relationships(8,9)

6 Treatment(10)

7 Not applicable

Follow up

1 Yes

2 No

12 Atrophy

13 Nil

New complaints

1 Yes

2 No

Improvement in DLQI score

1 Yes

2 No

3 Not applicable

Domains affected

1 Symptoms and feelings

2 Daily activities

3 Leisure

4 Work and school

5 Personal relationships

6 Treatment

7 Not affected

Diagnosis group

1 Fungal infection

2 Bacterial Infection

3 Viral infection

4 Pilo Sebaceous gland disorders

5 Eczema

6 Infestations/ Parasite

7 Urticaria

8 Papulosquamous

9 Pigmentary disorders

10 Disorders of dermal connective tissue

11 Hair disorders

12 Nail disorders

13 Nevi

14 Photosensitive disorders

15 Vascular malformations

16 Genital lesions

17 Connective tissue disorders

18 Others

19 Metabolic disorders

20 Sweat gland disorders

21 Keratinization disorders

22 Psycho cutaneous disorders

23 Hamartoneoplastic syndrome

Diagnosis

1 Dermatophytosis
2 Psoriasis
3 Scabies
4 Ichthyosis
5 Acne
6 Vitiligo
7 Xerosis
8 Palmoplantar keratoderma
9 Scar
10 Pitted keratolysis
11 Eczema
12 Molluscum contagiosum
13 Corn foot, Callositiy
14 Lichen planus
15 Linear focal elastoses
16 Pityriasis rosea
17 Pyoderma
18 Warts
19 Porphyria
20 Paederus dermatitis
21 Pityriasis versicolor
22 Cheilitis
23 Phrynoderma
24 Pediculosis capitis
25 Prurigo simplex
26 Varicella zoster
27 Linear epidermal nevus
28 Bromhidrosis
29 Nevus depigmentosus
30 Urticaria
31 Cutis laxa
32 Keloidal acne
33 Miliaria
34 Alopecia areata
35 Seborrheic dermatitis
36 Xerotic eczema
37 Pompholyx
38 Porokeratosis
39 Intertrigo
40 Morphoea
41 Keratosis pilaris
42 Meningocele
43 Nevus comidonicus
44 Nevus
45 TBVC
46 Nevus of ota
47 Paronychia
48 Keloid
49 Herpes labialis
50 Pityriasis alba
51 PMLE
52 IBA
53 Hyperhidrosis
54 Lichen simplex chronicus

55 Herpes zoster

56 Ecthyma gangrenosum

57 Plantar fissures

58 Perioral dermatitis

59 Onychomycosis

60 Keratolysis exfoliativa

61 Pyogenic granuloma

62 Hansen’s disease

63 Familial palmoplantar keratoderma with wooly hair (Naxos)

64 Erythrokeratoderma variabilis

65 Pseudoxanthoma elasticum

66 Neurofibromatosis

67 Tuberous sclerosis

68 Dermatopathia pigmentosa reticularis

69 Naegeli Franceschetti Jadassohn syndrome

70 Dowling degos disease