

PROPOSED CURRICULUM FOR THE
DEPARTMENT OF DERMATOLOGY,
VENEREOLOGY AND LEPROSY

FACULTY OF MEDICAL SCIENCES,

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Dermatology Curriculum For undergraduates:

Overall Aims

- To provide an integrated undergraduate course in clinical dermatology for medical students.
- Students completing the course should have attained a level of clinical competence sufficient to allow them to deal competently with dermatology cases presenting in the general practice.
- They should also have had sufficient exposure to dermatology to allow them to make an informed decision about dermatology as a possible career option.

Course Objectives

On completion of the course the student should know the following:

1. Basic structure, and function of the skin and its appendages, (including hair, nail, sebaceous glands, and sweat glands (eccrine and apocrine) and an understanding of the principles of the skin immune system.
2. Dermatological terminology of skin lesions (Primary and secondary).
3. Dermatological history taking and examination.
4. Demonstrate good knowledge of common skin diseases, clinical manifestations & bedside investigations.
5. Demonstrate adequate knowledge of various dermatological therapies with special emphasis on mode of topical therapy.
6. Should be able to recapitulate the mode of action of commonly used dermatological drugs including their indications, dose, toxicity, metabolism & drug interactions.

On completion of the course the student should be able to:

1. Demonstrate the knowledge necessary to be able to diagnose and treat common skin conditions.
2. Utilize this knowledge to interpret evidence, formulate simple management plans and communicate effectively.
3. Recognize and be aware of the significance of less common but important skin problems including dermatological emergencies.
4. Perform/ observe skills utilized in the field of dermatology.
5. Be aware of the psychosocial impact of skin diseases.

Recommended Texts:

'Dermatology, an illustrated colour text' *Gawkrodgers*

'Clinical Dermatology' *Hunter/Savin/Dahl*

'Textbook of Dermatology' *Roxburg*

Clinical Content of Dermatology Course For UG's

I. HISTORY AND EXAMINATION

History

- 1) Presenting complaints and Duration
- 2) History Of Present Complaints
- 3) Relevant personal / past / family history
- 4) Relevant occupational exposure associated with presenting complaints / disease
- 5) Treatment history – topical / systemic
 - Duration of use, method of application
 - Application of substances: mustard oil / soaps / cosmetics / neem / home remedies
 - History of drug intake-prescription drugs/self-medication
- 6) Sexual history – marital status/ PMC / EMC / single / multiple / hetero / homo / protected / unprotected / nature of contact
- 7) Personal history of
 - Atopic diathesis
 - Change of climate or environment
 - Dietary history
 - H/O substance abuse/addictions
- 8) Systemic complaints: Respiratory – TB / sarcoidosis / SS
Cardiovascular – SS / Lentiginosis
GI – DH, HS Purpura
Neurological – Leprosy
Constitutional symptoms
- 9) Obstetric/Gynecologic History
- 10) Family History

EXAMINATION

A) Dermatologic

- 1) Identify all types of lesions – primary / secondary

- 2) Distribution of lesion
 - Photoexposed
 - Exposed but photoprotected
 - Flexural
 - Acral
 - Site of contact of particular allergen
- 3) Pattern
 - Segmental
 - Zosteriform
 - Nevoid / Blaschkoid
 - Linear
- 4) Site
- 5) Number
- 6) For an individual lesion
 - Type, number, colour, margins (definition, regularity), edge, surface, scaling, crusting, any discharge
 - Signs of acute inflammation-redness, temperature, tenderness, swelling
- 7) Examination of hair – Scalp, axillary, pubic
 - Change in colour, texture, density, distribution of terminal hair
 - Scaling/ crusting
 - Alopecia - scarring / non-scarring
- 8) Nails
 - Proximal and lateral nail folds
 - Nail plate – surface, colour
 - Nail bed
- 9) Mucosa – oral, ocular, nasal, anal, genital
- 10) Relevant systemic examination

B)General physical examination

- Pallor, icterus, cyanosis
- Lymphadenopathy
- Facies

Structure of skin and its appendages

- a) Skin as an organ system
- b) Development of skin and its structure

- c) Functions of skin
- d) Layers of skin, different cell types and their functions
- e) Racial and regional variations
- f) Basis of keratinization
- g) Skin
- h) Epidermis
- i) Dermis- papillary and reticular

Hair : Structure of hair follicle

Distribution – age, sex and racial variations

Types of hair

Hair cycle

Rate of hair growth and Regulation of hair growth

Nail: Structure and Growth rate

Primary and Secondary skin lesions: definitions and examples:

Primary

- Macule: •Hyperpigmentation •Hypopigmentation •Vascular abnormalities •Capillary dilatation-erythema •Purpura
- Papules: •Acuminate •Dome shaped •Flat-topped •Scaly erythematous •Yellowish
- Necrotic •Waxy •Succulent
- Plaques and Nodules
- Wheals
- Vesicles/bullae: •Intraepidermal •subcorneal •suprabasal •Subepidermal
- Pustules
- Petechiae •Purpura •Ecchymoses
- Telangiectasias
- Erythema
- Comedones
- Burrow

Secondary

- Scale •Crust
- Erosion •Excoriation
- Ulcer
- Atrophy : Epidermal and Dermal

- Scar- hypertrophic, keloid
- Fissure
- Lichenification –hyperpigmentation, thickening, accentuated skin markings
- Sclerosis •Fibrosis: formation of excessive fibrous tissue
- Callus
- Miliium
- Sinus
- Cyst
- Fistula •Poikiloderma

II. Signs and Symptoms in Dermatology and Laboratory Methods / staining

Symptoms

- a. Pruritus
- b. Burning sensation
- c. Pain
- d. Paresthesia
- e. Hypo/Anaesthesia

For all S/S – Onset, duration, site, diurnal variation, aggravating and relieving factors, grade

Signs

- a. Grattage
- b. Auspitz
- c. Buschke Ollendroff's sign
- d. Tin tack
- e. Dariers
- f. Bulla spread
- g. Nikolsky's sign
- h. Koebner's phenomenon

Laboratory Methods / staining

1) Potassium hydroxide

- | | |
|--------|-------------------------|
| - Skin | - Hyphae |
| - Hair | - Pseudohyphae |
| - Nail | - P. versicolor, Spores |

2) Giemsa stain: To demonstrate Giant cells, Acantholytic cells, Molluscum contagiosum bodies,

LD bodies / donovan bodies

- 3) Gram's stain
- 4) AFB – ZN staining
- 5) Methods of demonstration of mite / lice
- 6) Tissue smears / Crush smear
- 7) Dark ground microscopy

Parasitic infections

Scabies

- 1) Etiological agent and Structure of the mite – male / female
- 2) Life cycle
- 3) Incubation period and Mode of transmission
- 4) Host / site specificity and Immunity
- 5) Clinical features –lesion morphology and their distribution
- 6) Variants
 - Crusted / norwegian scabies
 - Scabies incognito
 - Infantile scabies and scabies in pregnancy / Scabies in the elderly
- 7) Diagnosis:
 - a. demonstration of mites / eggs
 - b. Epiluminescence microscopy
- 8) Management
 - General measures
 - Topical antiscabietics
 - Systemic antiscabietics
 - Community Treatment
- 12) Complications

Pediculosis

- 1) Etiological agent
- 2) Different species – morphology- structural differences of pediculosis humanus var. capitis and corporis and Pthirus pubis
- 3) Life cycle
- 4) Clinical features and Complications
- 5) Laboratory diagnosis
- 6) Management

Bacterial Infections

- 1) Normal skin flora
 - a) Age / sex / racial variation
 - b) Site variation – flora of specialized areas
 - c) Role of skin flora in skin in defense
- 2) Primary and secondary infections
- 3) Primary
 - Gram positive bacteria
 - a. Staphylococcus
 - b. Streptococci

Cutaneous infections:

Impetigo, ecthyma, cellulitis, erysipelas, folliculitis, furuncle, carbuncle, SSSS

Predisposing factors

Treatment-general, topical, systemic

c. Corynebacteria

Cutaneous infections- Erythrasma, Trichomycoses axillaris, Pitted keratolysis.

Salient features

Causative organisms, predisposing factors, pathology, clinical features and variants, complications, lab diagnosis, treatment.

Pigmentary disorders

- 1) Epidermal melanin unit
- 2) Normal skin colour and variation
- 3) Define hyper and hypo-pigmentation
- 4) Different types – epidermal / dermal
- 5) Clinical patterns – reticulate, acral, flexural, variegate, rippled
- 6) Melasma
- 7) Vitiligo
- 8) Role of woods lamp in diagnosis of pigmentary diseases

Vitiligo

- (1) Definition
- (2) Pathogenesis and Pathology
- (3) Clinical features and variants-Sign of trichome, Associations (
- (4) Diagnosis and Management

Melasma

- (1) Definition
- (2) Etiology
- (3) Clinical types
- (4) Diagnosis and Management

Papulosquamous

Psoriasis,

- 1) Definition
- 2) Predisposing / provoking factors
- 3) Epidemiology and Pathogenesis
- 4) Clinical features and PASI
- 5) Clinical variants – by Site, Distribution, Morphology
- 6) Koebner's phenomenon
- 7) Investigations: Histopathology
- 8) Complications: Pustular psoriasis, Psoriatic arthritis
- 9) Treatment

Topical drugs- emollients, coal tar, salicylic acid, retinoids, topical steroids

Systemic drugs- methotrexate, cyclosporine, PUVA, retinoids,

- 10) Natural history and prognosis

Similar salient features for **lichen planus, pityriasis rosea, seborrheic dermatitis**

Hair & nail

Hair : Hypertrichosis, hirsutism, hypotrichosis, telogen effluvium

Alopecia

- a) Androgenetic, areata
- b) Cicatricial, non-cicatricial

Nail

Clubbing, koilonychias, platyonychia, micro/macronychia, anonychia, onycholysis, onychomadesis, Beau's lines, pitting, leukonychia, Terry's nail, Whitlow's, paronychia

Viral Infections

- 1) Definition of exanthems and enanthems
- 2) Different types of rash – roseolar/ scarlatiniform/ morbilliform
- 3) Individually in each virus group
 - clinical S/S, diagnosis, investigations, vaccines, association with HIV, complications, variable presentations

- structure, cellular characteristics, modes of transmission, epidemiology
- Management, prophylaxis, prognosis

Different groups

- POX – Molluscum contagiosum
- Herpes – HSV, Varicella and Zoster
- HPV
- Measles

Mycology

- 1) Definition of fungus, classification
- 2) Predisposing factors
- 3) Lab diagnosis
 - a) Sampling techniques – skin scraping, nail, hair in 10% KOH
 - b) Wood's lamp
 - c) Culture – media, characteristics

Disease caused by

Yeast

- c) Pityriasis versicolor, other disorders associated with malassezia yeast
- d) Candida
 - Normal carriage
 - Pathogenesis and Predisposing factors
 - Candidiasis and HIV
 - Clinical presentation – oral candidiasis (types), flexural candidiasis, Vulcovaginal, Balanoposthitis, perianal and scrotal, napkin candidiasis, paronychia, onychomycoses
 - Lab diagnosis-pseudohyphae, BYC, culture
 - Management-general measures, drugs
- e) **Dermatophytosis** – Host specificity, pathogenesis, HPE
 - Clinical forms – Tinea capitis, Tinea corporis, barbae, faciei, pedis, manuum, cruris, unguum, incognito, id eruptions
 - Lab diagnosis
 - Management
- f) **Subcutaneous and deep mycoses**- just names and predisposing factors

Eczemas and adverse drug reactions

ECZEMAS

- 1) Definition – acute, subacute and chronic
- 2) Endogenous vs exogenous
- 3) Histopathology
- 4) Endogenous – atopic, seborrheic dermatitis, discoid, pityriasis alba, hand eczema, gravitational eczema
- 5) Exogenous – irritant, allergic, photoallergic, PMLE, infective, dermatophytid
- 6) Diagnosis
- 7) Treatment – general measures, topical & systemic
- 8) Erythroderma

Adverse drug reactions

- 1) Definition and Classification by mechanism
- 2) Association with HIV
- 3) Major reactions – erythema multiforme, SJS syndrome, TEN
- 4) For each salient features including – causative drugs, clinical features and variants, systemic involvement, lab diagnosis including HPE, scoring methods, treatment

Tuberculosis

- a) Causative organism
- b) Classification of mycobacteria
- c) Immunity, natural history, pathogenesis, Tuberculin test
- d) Cutaneous TB – classification
- e) Types: Lupus vulgaris, TBVC, TB chancre, miliary TB, scrofuloderma, orificial TB, gumma
- f) Tuberculids
- g) Atypical mycobacterial infections

For all types - clinical features, HPE, Mantoux test, complications

Vesicobullous disorders

- a) Classification – infective, autoimmune, hereditary, drug induced
- b) BMZ structure and function
- c) Basic pathogenesis – acantholysis and acantholytic cells
- d) Signs – Nikolsky's and bulla spread

- a) Intraepidermal – pemphigus
- b) Sub-epidermal – bullous pemphigoid, cicatricial pemphigoid, dermatitis herpetiformis
- c) For each salient features including clinical features & variants, pathogenesis, HPE, lab diagnosis, target antigen
- d) Management –
 - Investigations –Tzanck smear
 - Histopathology
 - DIF & IIF
 - Treatment –
 - General measures
 - Topical therapy
 - Systemic therapy-steroids (daily, pulse therapy), immunosuppressives

Connective tissue disorders

- a. Lupus erythematosus
- b. Classification – DLE, SCLE, SLE, RA
- c. Scleroderma / morphea
- d. Dermatomyositis

For each salient features including - clinical features, systemic manifestations, diagnostic criteria, investigations and treatment

Acne and acneiform disorders

- a) Definition
- b) Pathogenesis- 4 factors
- c) Clinical feature and Grading and clinical variants
- d) Differential Diagnosis
- e) Complications
- f) Systemic associations
- g) Management-general measures, topical and systemic drugs

Topical / Systemic drugs in dermatology and OT procedures

Principles of topical therapy

- a) Factors affecting percutaneous absorption
- b) Classification of topical preparations
- c) Ideal vehicle
- d) Uses of different preparations

• **Topical**

Emollients, soap substitutes, shampoos, antiseptics, antifungals, antibiotics, steroids, steroid antibiotic combinations, retinoids, keratolytics, dithranol, tar, calcipotriol, wet wraps, bandages and compression hosiery.

Local anaesthetics

- **Systemic drugs:** Students should be aware of the indications for and side effects of dermatological treatments including:

Systemic steroids

Immunosuppressives, Methotrexate, azathioprine, cyclosporin, dapsone, Isotretinoin,, acitretin and systemic steroids.

Antileptotics

Antibiotics, antifungals, antivirals

Penicillamine, colchicine, sulfasalazine, chloroquin

OT procedures in dermatology

- a) Sampling – blood, pus, throat swab, nasal smear – universal precautions
- b) Extirpation – milia, molluscum
- c) Intralesional injections
- d) Cautery – chemical (TCA, phenol), electrical, radiocautery
- e) Skin biopsy
- f) Cryotherapy

Emergencies in dermatology: Recognition, Salient feature, and management

- a. Adverse drug eruptions –
- b. EM, SJS, TEN
- c. Acute urticaria, angioedema and Anaphylaxis
- d. Pemphigus
- e. Staphylococcal scalded skin syndrome
- f. Erythroderma
- g. Acute generalised pustular psoriasis
- h. Acute skin loss syndrome

Students should have witnessed and understand the indications for and side effects of the following procedures if available:

Examination under Woods light

Patch testing

UVB and PUVA therapy

Ellipse biopsy and punch biopsy

Curettage and cautery

Cryotherapy

Skills required

At the end of the course students should be able to :

- Take an appropriate history from a patient presenting with dermatological symptoms.
- Perform an appropriate physical examination of the patient.
- Recognise normal cutaneous changes.
- Distinguish between dermal and epidermal changes.
- Describe a solitary skin lesion and a cutaneous eruption using dermatological terms correctly
- Carry out simple bedside investigations like Gram stain, Slit skin smear examination, KOH scraping for fungus and Tzanck smear examination.

Sexually transmitted diseases

- a) History and examination pertaining to an STD patient
- b) Counselling
- c) Syndromic approach – definition, advantages / disadvantages, flow charts
- d) Major STD pathogens
- e) Major & minor STDs
- f) Difference between STD and STI
- g) Bed side procedures- DGI, gram's stain, Tzanck smear
- h) Culture methods
- i) Lab diagnosis –, serological tests
- j) Newer Techniques-CFT, ELISA, MIF, PCR
- k) For each disease – salient features including causative organism, incubation period, risk factors, pathogenesis, immunity, natural history, clinical features and variants, lab diagnosis, complications, treatment and association with HIV

LEPROSY

- a) Etiological agent- name, characteristics and mode of transmission
- b) Epidemiology
- c) Immunity
- d) Cardinal signs & Classification-spectrum
- e) Clinical spectrum –Facies, mucosal involvement and ocular involvement
- f) Patterns of nerve damage
- g) Diagnosis- BI, MI, nerve conduction studies, Lepromin test, histopathology
- h) Management: Anti-leprosy Drugs (First line, second line)
- i) Reactions- Type I , Type II, lazarine leprosy, Lucio Reaction and Management
- j) Types of deformities and WHO grading, Trophic ulcer
- k) Management
- l) Disabilities and Rehabilitation
- m) National Programmes

Teaching Methods/Aids

A variety of teaching methods and aids, as outlined below, are to be used during this course:

1. Lectures by dermatology specialists with AV aids.
2. Attendance at out patients where a group of students will be seeing and, where possible, examining a variety of cases under the guidance of dermatology specialists.
3. Students will also attend sessions of phototherapy, patch testing, and Will have the opportunity to observe biopsy and laser clinic sessions.

Evaluation

Dermatology has emerged as a rapidly evolving specialty with new developments every year. In this scenario, the students are made conversant with the latest developments. Dermatology contributes significant number of the general practitioners case load. In this situation it is only logical that the evaluation of the students be also conducted by a dermatologist and the marks allocated should be up to 20% of the total marks available in internal medicine. Therefore theory and clinical examination should be formulated and evaluated by Dermatological faculty members.