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***Lahore Medical & Dental College, Lahore***

***Department of Pharmacology***

***Study Guide***

***For***

***PHARMACOLOGY***

**(2nd Year B.D.S)**

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1. ***Introduction*:-**

It is the science that deals with the origin, nature, chemistry, effects, and uses of drugs. it includes pharmacognosy, pharmacokinetics, pharmacodynamics, pharmacotherapeutics and toxicology.

**Teaching in Year**

**2nd Year B.D.S**

**Duration of Course**

 **One Year**

1. ***Learning Objectives: -***
2. **GOAL:** The broad goal of teaching under graduate students in pharmacology is to inculcate rational and scientific basis of therapeutics keeping in view of dental curriculum and Profession.
3. **OBJECTIVES**:

**a) KNOWLEDGE & UNDERSTANDING**

 At the end of the course the student shall be able to:

1. Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs in general and in dentistry in particular,
2. List the indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason,
3. Tailor the use of appropriate drugs in disease with consideration to its cost, efficacy, safety for individual and mass therapy needs,
4. Indicate special care in prescribing common and essential drugs in special medical situations such as pregnancy, lactation, old age, renal, hepatic damage and immunocompromised patients,
5. Integrate the rational drug therapy in clinical pharmacology,
6. Indicate the principles underlying the concepts of "Essential drugs".

 **b) SKILLS:**

 At the end of the course the student shall be able to:

1. Prescribe drugs for common dental and medical ailments.
2. To appreciate adverse reactions and drug interactions of commonly used drugs.
3. Observe experiments designed for study of effects of drugs.
4. Critically evaluate drug formulations and be able to interpret the clinical pharmacology of marketed preparations commonly used in dentistry.

**c) INTEGRATION**

Practical knowledge of use of drugs in clinical practice will be acquired through integrated teaching with clinical departments.

1. ***Syllabus (PMDC)***

**Topic**

# ***General Pharmacology***

# Introduction

## Routes of Administration

Transport across cell membrane

Absorption+ Bioavailability

Distribution

Biotransformation

# Excretion, 1/2 Life, Kinetics

## Pharmacodynamics

Dose response curve + Therapeutic Index

Drug allergy & Adverse effects

Drug dependence, addiction

Posology

Pharmacogenetics

Bioassay & Standardization

Locally acting drugs & Chelating agents

Disinfectants & Antiseptics + Phenol Chemo

### Autonomic Nervous System

Introduction

Cholinergic Drugs

Anticholinergic Drugs

Muscle Relaxants

Ganglion Blockers

Catecholamines

Non-Catecholeamines

Beta Blockers

Alpha Blockers

Adrenergic Neuron Blockers

#### GIT Drugs

Bitters & Sialogogues

Emetics & Anti emetics

Purgatives & Laxatives

Treatment of P.U & Antacids

Anti diarrheals & Bacillaryt Dysentry

#### Respiratory System Drugs

Mucolytics, Expectorants & Antitussives

Bronchodilators & Treatment of Asthma

#### Cardiovascular System Drugs

Vasodilators: Direct & Ca++ Channel Blockers

Antihypertensive drugs & Treatment of Hypertension

ACE Inhibitors

Antianginal Drugs

Treatment of CCF

Anti arrythmic Drugs

Diuretics

**DRUGS ACTING ON BLOOD**

Coagulants, Anti coagulants & Thrombolytic agents

Anti Platelets

##### *Drugs acting on CNS*

Introduction

General Anesthetics

Local Anesthetics

Anti Psychotic drugs

Antidepressants

Sedative & Hypnotics + Anti anxiety Drugs

Alcohol & Drug abuse

Trea arcotic Analgesics

Non-narcotic Analgesics

Treatment of Rheumatoid arthritis

Treatment of Epilepsy

CNS Stimulants & Xanthines

Treatment of gout

.

#### Drugs acting on Endocrine System

Pituitary hormones& Parathyroid drugs

Antithyroid

Corticosterroids

Antidiabetic Drugs(Insulin, Oral Hypoglycemic)

#### Therapeutics

Antibiotics: Introduction

**Cell wall synthesis inhibitors**

Penicillins & Cephalosporins

Bacitracin, Vancomycin, Monobactam,

carbapenems,aztreonam

**Protein Synthesis Inhibitors**

Aminoglycosides Macrolides

Tetracyclines & Chloramphenicol

**Antifolates Drugs**

Sulphonamides & Cotrimoxazole+

Trimethoprine and Pyrimethamine

**DNA Synthesis Inhibitors**

Urinary Antiseptics & Quinolone derivatives

Anti Cancer Drugs

Anti Viral Drugs

Antifungal Drugs

Anti TB & Leprosy drugs

Antimalarial

Anti amoebic Drugs

Anthelmintics

**Dental Pharmacology:-**

Antimicrobial agents used in Dentistry

Analgesic used in Dentistry

Antiseptics and Disinfectants

Agents used for the prevention of dental caries

Agents used for maintenance of oral hygiene

Dentin desensitizing agent

Agent used in root canal therapy

Local anesthetics used in dentistry

**Practical Pharmacology:-**

Measurments System

Common drug Preprations:-

 Lotion

Ointment

Solution

Emulsion

Powder

Mixtures

Suspensions

1. ***Teaching & Learning Methodologies***
2. Interactive Lectures
3. Tutorials
4. Practicals
5. Small Group Discussions
6. Batch Wise Viva Voce
7. Monthly bases tests (MCQ’s and SEQ’s)
8. Long Tutorial Sessions
9. Topic Wise Practice Test
10. Using Latest Techniques of electronic facilities like Audio Visual and Multimedia
11. Recommended E. Books
12. ***Attendance Required***
13. 75% Attendance is mandatory in (Lectures, Practical and Tutorials)
14. A minimum 75% Attendance is required for eligibility to appear in Annual Examination according to University of Health Sciences, Lahore
15. Attendance will be marked through the Bio- Metric Attendance Systems (thumb Impression) and also record in Attendance Registers.
16. Absences due to Sickness/ Illness must be certified by a Medical Officer and approved by Principal and Head of Department also.
17. ***Learning Resources***

***Recommended Books:-***

1. Goodman & Gilman’s - The Pharmacological Basis of Therapeutics
2. Basic & Clinical Pharmacology by Bertram G, Katzung
3. Clinical Pharmacology by DR Lawrence, PN Bennett & MJ Brown
4. Essentials of Medical Pharmacology by K.D. Tripathi
5. Lippincott Illustrated Review Pharmacology
6. Lecture Notes on Drugs for Dental Students by Wilkin & Davidson
7. Clinical Pharmacology in Dental Practice by S V Holroyd
8. Clinical Dental Pharmacology Kamran Ali
9. ***Technologies to be Used: -***
10. Text Books are the Most Important source to learn for this Subject
11. Hand Outs (by Senior Faculty Members)
12. E. Books (Available)
13. Multimedia (Power Point)
14. Tables of Drugs Chart
15. Discussions
16. Viva Voce type Practice
17. Departmental Library
18. ***Assessments Methods***

***Formative:-***

* MCQ’s and SEQ’s type Test will be held at the end of the every topic.
* Viva Voce will be held at the end of every major topic.
* Assignments given, checked and marked for 10 % Internal Assessment marks
* Summer Vacation work (assignments type)
1. ***Exam Rules and Regulation***

**Examination will be held at the end of the session of the year**

Marks Distribution According to University of Health Sciences Rules and Regulation:-

Total Marks of the subject in Professional examination----**200 Marks**

**Theory Examination:**

* 45 Multiple Choice Questions (1 Mark for Each Question) -------------– 45 Marks
* 15 Short Essay Questions (3 marks for Each Question) ----------------45 Marks
* Internal Assessment ---10 Marks

Total Marks 100 Marks

**Oral//Practical & Viva Voce Examination:**

**Viva Voce Examination:-**

* Viva Voce will be held after Theory Examination
* Viva Voce (Internal Examiner): 30 Marks and 05 Marks for Note Book ---35 Marks
* Viva Voce (External Examiner): 30 Marks---------------------------------------30 Marks

**OSPE Examination: -**

* 05 Observed and non-Observed Stations (Each Station having 03 Marks)-- 15 Marks
* Pharmacy Practical: ---10 Marks
* Internal Assessment: ----10 Marks

 Total Marks: 100 Marks

1. ***Schedule / Planner / Timetable***

***Schedule / Planner for the Year 2018-2019***

**Topic Teacher No of Lect**

# ***General Pharmacology***

# Introduction Dr. Ajaz Fatima 01

## Routes of Administration Dr. Ajaz Fatima 02

Absorption+ Bioavailability Dr.Shazia Asim 01

Distribution Dr. Ajaz Fatima 02

Biotransformation Dr. Shazia Asim 02

# Excretion, 1/2 Life, Kinetics Dr. Asia Firdous 02

## Pharmacodynamics Dr. Awais 04

Dose response curve + Therapeutic Index Dr. Awais

Drug allergy & Adverse effects Dr.Awais Qarni 02

Drug dependence, addiction Dr.Awais Qarni 02

Posology Dr. Wardah 01

Pharmacogenetics Dr. Ajaz Fatima 01

Bioassay & Standardisation Dr.Wardah 01

Locally acting drugs & Chelating agents Dr. Awais 02

Disinfectants & Antiseptics + Phenol Dr. Awais 02

### Autonomic Nervous System

Introduction Dr. Asia Firdous 01

Cholinergic Drugs Dr. Asia Firdous 01

Anticholinergic Dr. Ajaz Fatima 02

Muscle Relaxants Dr. Awais Qarni 01

Ganglion Blockers Dr. Wardah 01

Catecholamines Dr. Ajaz Fatima 03

Non-Catecholeamines Dr. Asia Firdous 02

Beta Blockers Dr. Asia Firdous 02

Alpha Blockers Dr. Asia Firdous 01

Adrenergic Neuron Blockers Dr.Wardah 02

Ergot Alkaloids & Bromocryptine Dr. Wardah 01

Centrally acting sympathoplegics Dr. Wardah 01

#### GIT Drugs

Emetics & Anti emetics Dr. Asia Firdous 01

Purgatives & Laxatives Dr. Wardah 01

Treatment of P.U & Antacids Dr. Wardah 03

#### Cardiovascular System Drugs

Vasodilators: Direct & Ca++ Channel Blockers Dr. Ajaz Fatima 03

Antihypertensive drugs & Treatment of Hypertension Dr. Ajaz Fatima 02

ACE Inhibitors Dr. Ajaz Fatima 02

Antianginal Drugs Dr. Awais Qarni 03

Treatment of CCF Dr. Ajaz FAtima 03

Anti arrythmic Drugs Dr. Asia Firdous 03

Diuretics Dr. Wardah 02

**DRUGS ACTING ONBLOOD**

Antihyperlipidemic Drugs Dr. Asia Firdous 01

Coagulants, Anti coagulants & Thrombolytic agents Dr.Awais **02**

Anti Platelets Dr. Awais Qarni 01

##### Autocoids:-

Histamine & Anti histamine Dr. AsiaFirdous 02

Prostaglandins & Serotonins Dr. Wardah 02

##### *Drugs acting on CNS*

Introduction Dr. Ajaz Fatima 01

General Anesthetics Dr. Ajaz Fatima 03

Local Anesthetics Dr. Wardah 02

Anti Psychotic drugs Dr. Awais 02

Antidepressants Dr. Ajaz Fatima 02

Antimaniacs Dr. Asia Firdous 01

Sedative & Hypnotics + Anti anxiety Drugs Dr. Ajaz Fatima 03

Alcohol & Drug abuse Dr. Awais Qarni 02

Treatment of Epilepsy Dr. Asia Firdous 02

Narcotic Analgesics Dr. Asia Firdous 02

Non-narcotic Analgesics Dr. Ajaz Fatima 03

Treatment of Rheumatoid arthritis Dr. Ajaz Fatima 01

Treatment of gout Dr. Wardah 01

#### Drugs acting on Endocrine System

Pituitary hormones& Parathyroid drugs Dr. Wardah Siddique 01

Antithyroid Dr. Wardah 02

Corticosterroids Dr. Ajaz Fatima 02

Antidiabetic Drugs Dr. Awais Qarni 03

#### Therapeutics

Antibiotics: Introduction Dr. Asia Firdous 01

**Cell wall synthesis inhibitors**

Penicillins & Cephalosporins Dr. Wardah 02

Bacitracin, Vancomycin, Monobactam,

carbapenems,aztreonam Dr. Wardah 01

**Protein Synthesis Inhibitors**

Aminoglycosides Macrolides Dr. Asia Firdous 02

Tetracyclines & Chloramphenicol Dr. Asia Firdous 01

**Antifolates Drugs**

Sulphonamides & Cotrimoxazole+ Dr. Ajaz Fatima 02

Trimethoprine and Pyrimethamine

**DNA Synthesis Inhibitors**

Urinary Antiseptics & Quinolone derivatives Dr. Ajaz Fatima 01

Anti Cancer Drugs Dr. Wardah 03

Anti Viral Drugs Dr. Ajaz Fatima 02

Antifungal Drugs Dr. Asia Firdous 01

Anti TB & Leprosy drugs Dr. Awais 02

Antimalarial Dr. Asia Firdous 02

Anti amoebic Drugs Dr. Ajaz Fatima 02

Drug Interactions Dr. Wardah 01

**Time Table for 2nd Year B.D.S (Weekly Schedule)**

**Lahore Medical & Dental College, Lahore.**

**2nd Year BDS**

**Weekly Lectures Schedule**

**Date: from: to:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Day** | **TIME** | **TOPIC** | **TEACHER** |
| **Monday** | **09:30am** **to** **10:15 am** |  |  |
| **Tuesday** | **11:30am****To****12:15pm** |  |  |
| **Wednesday** | **09:30am****To****10:15am** |  |  |
| **Friday** | **08:15am** **To****09:00am** |  |  |

**Weekly Practical Schedule**

**Time: 07:30AM to 09:30AM**

|  |  |  |  |
| --- | --- | --- | --- |
| **Day** | **Batch** | **Practical Topic** | **Teacher** |
| **Monday** | **Batch B** |  |  |
| **Tuesday** | **Batch A**  |  |  |
| **Wednesday** | **Batch B** |  |  |
| **Thursday** | **Batch A** |  |  |

**Teaching Hours:-**

For 2nd Year B.D.S

For Lectures: 108 hours

For Practical & Tutorials: 288 hours

1. ***ORGANOGRAM OF PHARMACOLOGY DEPARTMENT***

***Prof. Dr. Ajaz Fatima***

***MBBS, M Phil***

***Head of department of Pharmacology***

1. Dr. Ajaz Fatima

MBBS, M.Phil Professor (H.O.D)

Dr. Shazia Asim

MBBS, M.Phil Professor

Dr. Wardah Siddique

 MBBS, M.Phil,Assisstant Professor

Dr. Asia Firdous

MBBS, M.Phil Assisstant Professor

Dr. Ghulam Awais Qarni

MBBS, M.Phil (part 1) Senior Lecturer

Dr. Rubina Raza (MBBS)

Dr. Bushra Haider (MBBS)

Dr. Humaira Mushtaq (MBBS)

1. Khalid Masood(computer operator)
2. Saif ul Mulook (lab technician)
3. Mohammad Amin(lab assistant)
4. Jan Mohammad (office boy)
5. Mohammad Kashif (store keeper)