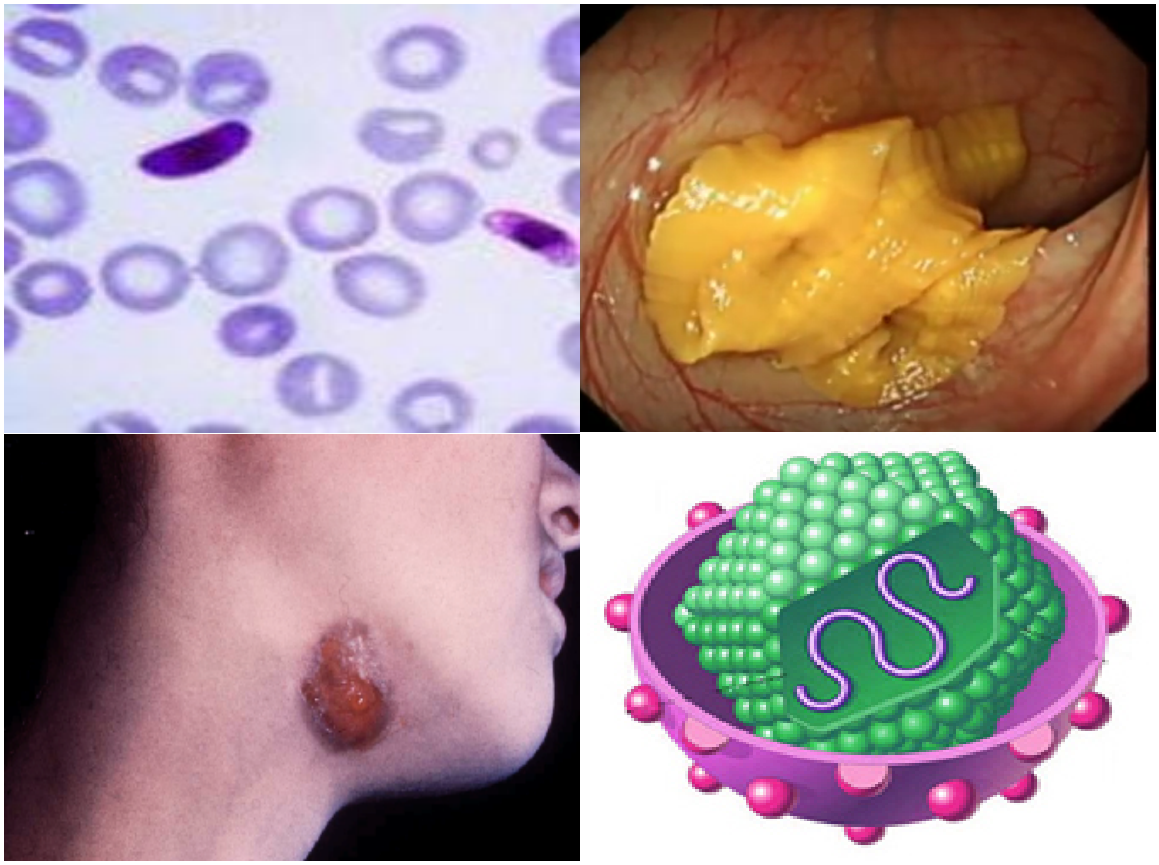
AJK Medical College, Muzaffarabad

Infectious Diseases Module (ID-0205)
3rd Year MBBS



Duration: **4-weeks**
Starting on:

DEPARTMENT OF MEDICAL EDUCATION

CONTENTS

MODULE TEAM

NAME	DESIGNATION
Prof. Muhammad Munir	(Module Planner)
Prof. Muhammad Arif	(Module Coordinator)
Dr. Ziyad Afzal Kayani	(DME)
Brig. (Rtd) Prof. Dr. Ahmed Khan	(Member)
Lt. Col. Dr. Kamran Butt	(Member)
Dr. Naeem Ahmed	(Member)
Dr. Naheed Akhter	(Member)
Dr. Seemab	(Member)

MODULE THEMES

SR. NO	THEME
1	PUO (Pyrexia of Unknown Origin)
2	Abdominal Discomfort
3	Insect Bite
4	Infected Skin Lesions
5	Infection Control

TABLE SPECIFICATIONS (TOS)

THEME	WEIGHTAGE (%)
PUO (Pyrexia of Unknown Origin)	30
Abdominal Discomfort	25
Insect Bite	15
Infected Skin Lesions	10
Infection Control	20

RATIONALE:

Despite the availability and use of effective vaccines and antibiotics, infectious diseases remain an important health problem worldwide. Infectious diseases are leading causes of death. They are particularly important causes of death among the elderly, people with chronic diseases, people with acquired immunodeficiency syndrome (AIDS), and those receiving immunosuppressive drugs. In our country unsanitary living conditions and malnutrition contribute to a massive burden of infectious diseases. More deaths due to infectious diseases are among children, especially from respiratory and diarrheal infections. Infectious agents belong to a wide range of classes and vary in size from the approximately 27-kD nucleic acid–free prion to 20-nm poliovirus to 10-m tapeworms

Of diseases affecting humans, most that are curable and preventable are caused by infectious agents. To the student, an understanding of infectious diseases offers insights into medicine as a whole

Microbes can enter the host by inhalation, ingestion, sexual transmission, insect or animal bites, or injection .The placental-fetal route is an important mode of transmission

The first defenses against infection are intact skin and mucosal surfaces, which provide physical barriers and produce antimicrobial substances.

Some microorganisms proliferate locally, at the site of infection, whereas others penetrate the epithelial barrier and spread to distant sites via the lymphatics blood and nerves.

The major manifestations of infectious disease may appear at sites distant from the point of microbe entry. Microbial damage to host tissues depends on the ability of the microbes to adhere to host cells, invade cells and tissues, or deliver toxins.

ORGANIZATION OF MODULE:

The module consists of 5 Themes and 2 PBL each based on a real life situation. Each theme has clear learning objectives. Major emphasis will be on real Patient Examination, Discussion, Laboratory and Imaging investigation and Interpretation, Case analysis, diagnosis and management plan will be made by student under the guidance of faculty supervisors.

The Theme one real life scenarios, and will give a fair idea to the student that how patients present in day to day clinical practices. Your daily activities would be divided into different states. Please refer to time table for more details regarding organization of learning objectives.

TEACHING STRATEGIES:

The content of this module will be delivered by a combination of different teaching strategies. These include small group discussions (SGD), large group interactive sessions (LGIS), history taking, patient examination, laboratory investigations and tests interpretation, Clinico-pathological conferences (CPCs), discussions and journal club. Entire curriculum will be delivered by clinical case scenarios each covering a theme. Read the cases and the objectives of the theme which you are supposed to encounter next day, understand and explain the case to yourself and study the relevant information. The students will present clinical cases based on scenarios themselves and display the relevant radiological and pathological features. Following learning/teaching strategies will be used in this module;

Small Group Discussion (SGD):

Main bulk of the course content will be delivered in small group sessions. Each theme has an associated case. The case will be centered around which learning will take place. Every group will have a facilitator assigned to it. The facilitator will be there to keep you on track, giving you maximum liberty to discuss and achieve the objectives as a group. Small groups will be followed by a wrap up session to standardize learning. Rest of the information will be in the schedule/ time table.

Large Group Interactive Sessions (LGIS):

LGIS will be employed at times to augment small groups. By and large they will be used to pass on general concepts regarding the theme. Large group instruction will be employed at times sparingly. Attend large group sessions with the following focus:

- Identify important points.
- Ask questions on concepts not well understood in the text books.
- Measure your learning comprehension

CLINICO-PATHOLOGICAL CONFERENCES (CPCS):

The students will be required to present cases related to the themes in groups. They will collect the information about the different facets of patient's disease and present to the whole class with the help of appropriate histopathological, radiological and clinical slides. It will be followed by question, answer and discussion.

PRACTICAL SKILLS:
Selection of tests, collection of the specimen, examination and interpretation of specimens/test reports, microscopic slides, culture plates/media examination and radiological images.

SELF-DIRECTED LEARNING (SDL):
A task will be given in SDL regarding the theme to be discussed before PBL. This will help to prepare you a bit before the theme is under discussion. A few SDLs have been added in between to create an environment for you to search literature as well as to deduce and synthesize information from different sources to meet the learning objectives.

ASSESSMENT:
In this module, you will have formative and summative assessment. This will give you an idea about the format of the examination that you will go through at the end of the year. This will be followed by feedback on your performance in the exam. Marks obtained in the module examination will contribute 30% (internal assessment) towards end of year Professional University Examination. There is no re-sit exam for module written assessment and block IPE under any circumstances. If you miss them, your internal assessment will be recorded as zero. No excuse of any kind is permissible for absence in module or IPE assessment.

THEME: 1 (PUO (Pyrexia of Unknown Origin)

LEARNING OBJECTIVES

At the end of the theme the theme will be able to:

1. Know and understand the names of different species of Chlamydiae and the diseases caused by them
2. Know the important properties of Chlamydiae
3. Know the morphological features ,cultural characters ,pathogenesis and pathology ,salient clinical features of the diseases caused by different species of Chlamydiae
4. Know the specimens required to be collected for the laboratory diagnosis, the general principles of methods required for the lab diagnosis of diseases caused by different species.
5. The student will know and understand the names of different species of mycoplasma and the diseases caused by them
6. Know the important properties of mycoplasma
7. Know the morphological features ,cultural characters ,pathogenesis and pathology ,salient clinical features of the diseases caused by different species of mycoplasma
8. Will be able to know the specimens required to be collected for the laboratory diagnosis , the general principles of methods required for the lab diagnosis of diseases caused by different species.
9. Know and understand the laboratory methods employed for the lab diagnosis mycoplasmal infections
10. The student will know and understand the names of different species of the genus Brucella and the different types of fevers caused by them
11. Will know the role of different types of animals in the transmission of brucella species
12. Know the important properties of Brucellae
13. Know the morphological features ,cultural characters ,pathogenesis and pathology ,salient clinical features brucellosis.
14. Will be able to know the specimens required to be collected for the laboratory diagnosis ,the general principles of methods required for the lab diagnosis of diseases caused by different species.
15. The student will know and understand the laboratory methods employed for the lab diagnosis different types of brucellosis.
16. Will be able to know the Taxonomy of Onchocerca Volvolus and Loa Loa
17. Will know and understand the geographical distribution,salient and important morphological features ,mode of transmission ,life cycle,pathogenesis and pathology of disease caused by Onchocerca Volvolus and Loa Loa
18. Will know the salient clinical features of the diseases caused by Onchocerca Volvolus and Loa Loa
19. Will know and understand the lab diagnosis of the diseases caused by Onchocerca Volvolus and Loa Loa
20. the student will be able to know and understand the taxonomy of Measles Virus
21. The important properties the pertinent replicative cycle transmission, pathogenesis and pathology, salient clinical features of Measles
22. Will be able to know the specimens required to be collected for the laboratory diagnosis
23. The student will know and understand the laboratory methods employed for the lab diagnosis of Measles

24. the student will be able to know and understand the taxonomy of Mumps Virus
25. The important properties the pertinent replicative cycle transmission, pathogenesis and pathology ,salient clinical features of Mumps
26. Will be able to know the specimens required to be collected for the laboratory diagnosis ,the general principles of methods required for the lab diagnosis Mumps
27. The student will know and understand the laboratory methods employed for the lab diagnosis of Mumps
28. Define antimicrobials and write down the biochemical processes in microbes which they target.
29. Describe the factors involved in the selection of antimicrobial agents.
30. Empiric therapy prior to identification of the organism
31. Determining antimicrobial susceptibility of infective organisms
32. Bacteriostatic versus bactericidal drugs.
33. Minimum inhibitory concentration
34. Minimum bactericidal concentration
35. Effect of the site of infection on therapy
36. Factors determine the selection of an antimicrobial
37. FDA categories of antimicrobials and fetal risk.
38. Route of administration of antimicrobials
39. Determinants of rational dosing
40. Concentration-dependent killing
41. Time-dependent (concentration-independent) killing
42. Postantibiotic effect
43. Highlight spectrum of antimicrobial agents.
44. Enlist advantages and disadvantages of antimicrobial drug combinations.
45. Describe the sites of action of antimicrobial agents.
46. Describe the mechanisms of development of antimicrobial resistance.
47. Describe the antimicrobial prophylaxis.
48. Describe the complications of antimicrobial therapy.
49. Classify cell wall synthesis inhibitors.
50. Classify Penicillins and describe the pharmacokinetic properties of Penicillins.
51. Write down the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Penicillins.
52. Describe the adverse effects , contraindications / precautions and drug interactions of Penicillins.
53. Classify Cephalosporins and describe the pharmacokinetic properties of Cephalosporins and Cephamycins.
54. Describe the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Cephalosporins and Cephamycins..
55. Describe the adverse effects , contraindications/ precautions and drug interactions of Cephalosporins and Cephamycins.
56. Describe the examples and pharmacokinetic properties of Carbapenems.
57. Describe the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Carbapenems.
58. Describe the adverse effects , contraindications/ precautions and drug interactions of Carbapenems
59. What is cilastatin and what is its role in carbapenem therapy.
60. Describe the examples and pharmacokinetic properties of Monobactams
61. Write down the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Monobactams.
62. Describe the adverse effects , contraindications/ precautions and drug interactions of Monobactams.
63. Describe the Beta-lactamases and what are their types and which organisms produce these.
64. Mention various Beta-lactamase inhibitors.
65. Describe the significance of these Beta-lactam inhibitors when given in combination with Beta- lactam antibiotics.
66. Describe the pharmacokinetic properties of Vancomycin.
67. Write down the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Vancomycin.
68. Describe the adverse effects , contraindications/ precautions & drug interactions of Vancomycin.
69. How do Teicoplanian, telavamcin and dalbavancin differ from Vancomycin.
70. Describe the pharmacokinetics, mechanism of action and effects of Daptomycin.

71. Describe the clinical applications, toxicities and interactions and contraindications/ precautions of Daptomycin.
72. Describe Pharmacology of Fosfomycin, Bacitracin and Cycloserine.
73. Describe Pharmacology of Polymyxins.
74. Classify Tetracyclines and describe the pharmacokinetic properties of Tetracyclines.
75. Write down the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Tetracyclines.
76. Describe the adverse effects , contraindications / precautions and drug interactions of Tetracyclines.
77. Describe Pharmacology of Glycylcyclines.
78. Enlist Macrolides and ketolides and describe the pharmacokinetic properties of Macrolides and ketolides.
79. Describe the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Macrolidse and ketolides.
80. Describe the adverse effects, contraindications / precautions and drug interactions of Macrolides and ketolides.
81. Describe the pharmacokinetic properties of Clindamycin.
82. Describe the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Clindamycin.
83. Describe the adverse effects, contraindications / precautions and drug interactions of Clindamycin.
84. Describe the pharmacokinetic properties of Chloramphenicol.
85. Describe the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Chloramphenicol.
86. Describe the adverse effects , contraindications / precautions and drug interactions of Chloramphenicol.
87. Write examples of Streptogramins & Oxazolidinones.
88. Write down the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Streptogramins & Oxazolidinones.
89. Describe the adverse effects, contraindications / precautions and drug interactions of Streptogramins & Oxazolidinones.
90. Aminoglycosides & Spectinomycin:
91. Classify Aminoglycosides and describe the pharmacokinetic properties of Aminoglycosides.
92. Describe the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Aminoglycosides.
93. Describe the adverse effects , contraindications/ precautions and drug interactions of Aminoglycosides.
94. How Spectinomycin is different from Aminoglycosides. Describe its Pharmacology.
95. How Netilmicin is active in other Aminoglycoside resistant infections.
96. Describe Pharmacology of Fidaxomicin.
97. Sulphonamides, Trimethoprim & Quinolones:
98. Classify Suphonamides and describe the pharmacokinetic properties of Suphonamides & Trimethoprim.
99. Describe the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Sulphonamides & Trimethoprim.
100. Describe the adverse effects , contraindications/ precautions & drug interactions of Suphonamides and Trimethoprim.
101. Classify Quinolones and describe the pharmacokinetic properties of Quinolones.
102. Describe the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Quinolones.
103. Describe the adverse effects, contraindications/ precautions & drug interactions of Quinolones.
104. Describe Pharmacology of Cotrimoxazole.
105. Describe Pharmacology of Urinary Tract Antiseptics/Antimicrobials
106. Describe Pharmacology of other Miscellaneous Antimicrobial Agents; Disinfectants, ntiseptics & Sterilants
107. Explain the morphology, types and lab diagnosis of Aspergilosis
108. Enlist the fungal agents causing systemic mycosis.
109. Explain the morphological features and lab diagnosis of agents causing systemic mycosis

Theme: 2 (Abdominal Discomfort)

LEARNING OBJECTIVES

At the end of the theme the theme will be able to:

1. Will be able to define urinary tract infections.
2. Will be able to enumerate the general characters of the family Enterobacteriacae
3. Will be able to enumerate the names of organisms causing the urinary tract infections.
4. Will be able to revise the cultural characters and morphological features of these organisms.
5. Will be able to understand the other diseases caused by these organisms.
6. Will be able to understand the collection of midstream urine specimen for the diagnosis of urinary tract infections
7. Will be able to know and understand the different cultural methods employed for the lab diagnosis of urinary tract infections.
8. Will be able to know the significance of bacterial count in defining the urinary tract infections in males, non pregnant females and pregnant females
9. Will be able to know the Taxonomy of Trichomonas Vaginalis
10. Will know and understand the geographical distribution,salient and important morphological features ,mode of transmission ,life cycle,pathogenesis and pathology of trichomoniasis.
11. Will know the salient clinical features of Trichomoniasis.
12. Will know and understand the lab diagnosis of Trichomoniasis.
13. Will be able to know the Taxonomy of different Species of Schistosoma
14. Will know and understand the geographical distribution,salient and important morphological features, mode of transmission ,life cycle,pathogenesis and pathology of Schistosomaiasis
15. Will know the salient clinical features of Schistosomaiasis
16. Will know and understand the lab diagnosis of Schistosomaiasis
17. Will be able to know the Taxonomy of Diphylobothrium latum
18. Will know and understand the geographical distribution,salient and important morphological features ,mode of transmission ,life cycle,pathogenesis and pathology of disease caused by Diphylobothrium latum
19. Will know the salient clinical features of the diseases caused by Diphylobothrium latum
20. Will know and understand the lab diagnosis of the disease caused by Diphylobothrium latum
21. Will be able to know the Taxonomy of Echinococus Granulosis
22. Will know and understand the geographical distribution,salient and important morphological features ,mode of transmission ,life cycle,pathogenesis and pathology of Hydatid Cyst of liver, lung and different other organs
23. Will know the salient clinical features of the dydatid disease of different organs
24. Will know and understand the lab diagnosis of the Hydatid disease of different organs
25. Know and understand the taxonomy of Hepatitis A and Hepatitis E Viruses
26. The important properties the pertinent replicative cycles transmission ,pathogenesis and pathology ,salient clinical features of Hepatitis A and Hepatitis E Viruses
27. Will be able to know the specimens required to be collected for the laboratory diagnosis ,the general principles of methods required for the lab diagnosis of Hepatitis A and Hepatitis E Viruses
28. Know and understand the laboratory diagnosis of Hepatitis A and Hepatitis E Viruses
29. Know and understand the taxonomy of Hepatitis B Virus
30. The important properties the pertinent replicative cycles transmission ,pathogenesis and pathology ,salient clinical features of Hepatitis B Virus
31. Will be able to know the specimens required to be collected for the laboratory diagnosis ,the general principles of methods required for the lab diagnosis of Hepatitis B Virus
32. The student will know and understand the laboratory diagnosis of Hepatitis B virus
33. Classify Antiamebic Drugs and describe the pharmacokinetic properties of Antiamebic Drugs.
34. Describe the mechanism of action, resistance, Spectrum and clinical uses of Antiamebic Drugs.
35. Describe the adverse effects, contraindications/ precautions & drug interactions of Antiamebic Drugs.
36. Describe The Pharmacology of Drugs used in the treatment of Giardiasis, Trichomoniasis, trypanosomiasis, Leishmaniasis and other protozoal infections .
37. Describe oral rehydration solution in terms of its composition/uses.
38. Classify antihelminthic (anthelmintic) Drugs

39. Enlist and describe the pharmacokinetic properties of antinematodes Drugs.
40. Describe the mechanism of action, resistance, Spectrum, and clinical uses of antinematodes Drugs.
41. Describe the adverse effects, contraindications/ precautions & drug interactions of antinematodes Drugs.
42. Enlist and describe the pharmacokinetic properties of antitrematodes Drugs.
43. Describe the mechanism of action, resistance, Spectrum, and clinical uses of antitrematodes Drugs.
44. Describe the adverse effects, contraindications/ precautions & drug interactions of antitrematodes Drugs.
45. Enlist and describe the pharmacokinetic properties of anticestodes Drugs.
46. Describe the mechanism of action, resistance, Spectrum, and clinical uses of anticestodes Drugs.
47. Describe the adverse effects, contraindications/ precautions & drug interactions of anticestodes Drugs.
48. Classify, describe Pharmacokinetics, mechanism of action, clinical uses and adverse effects, contraindications / precautions and drug interactions of important anthelmintic drugs.
49. Classify Antiviral Agents and describe the pharmacokinetic properties of Antiviral Agents.
50. Describe the mechanism of action, resistance, Spectrum and clinical uses of Antiviral Agents.
51. Describe the adverse effects, contraindications/ precautions & drug interactions of Antiviral Agents
52. Explain the morphological feature, clinical features, lab diagnosis and treatment of HCV

Theme: 3 (Insect Bite)

Learning Objectives

At the end of the theme the theme will be able to:

1. The student will know and understand the names of different species of rickettsiae and the diseases caused by them
2. Will know the role of different types of insects in the transmission of rickettsial infections .
3. Know the important properties of rickettsiae
4. Know the morphological features ,cultural characters ,pathogenesis and pathology ,salient clinical features of the diseases caused by different species of rickettsiae
5. Will be able to know the specimens required to be collected for the laboratory diagnosis , the general principles of methods required for the lab diagnosis of diseases caused by different species of rickettsiae, The student will know and understand lab diagnosis of the diseases caused by different species of rickettsiae
6. Will be able to know the Taxonomy of Plasmodium
7. Will be able to know the names of different species of Plasmodium and the types of malaria caused by them.
8. Will know and understand the geographical distribution,salient and important morphological features ,mode of transmission ,life cycle,pathogenesis and pathology of Malaria
9. Will know the salient clinical features of different forms of malaria.
10. Will know the complications of malaria especially cerebral malaria.
11. Will know and understand the lab diagnosis of malaria
12. Will be able to know the Taxonomy of different Species of Leishmania
13. Will be able to know and understand the different forms of Leishmaniasis and the role played by different species of Leishmania in causing them.
14. Will know and understand the geographical distribution,salient and important morphological features ,mode of transmission ,life cycle,pathogenesis and pathology of Leishmaniasis.
15. Will know the salient clinical features of Leishmaniasis.
16. Will know and understand the lab diagnosis of Leishmaniasis
17. Will be able to know the Taxonomy of Wuchreria Bancrofti
18. Will know and understand the geographical distribution,salient and important morphological features ,mode of transmission ,life cycle,pathogenesis and pathology of disease caused by Wuchreria Bancrofti
19. Will know the salient clinical features of the Filariasis
20. Will know and understand the lab diagnosis of Filariasis
21. Will be able to know the Taxonomy of Onchocerca Volvolus and Loa Loa
22. Will know and understand the geographical distribution,salient and important morphological features ,mode of transmission ,life cycle,pathogenesis and pathology of disease caused by Onchocerca Volvolus and Loa Loa
23. Will know the salient clinical features of the diseases caused by Onchocerca Volvolus and Loa Loa

24. Will know and understand the lab diagnosis of the disease caused by Onchocerca Volvolus and Loa Loa
25. know and understand names of the important arthropod transmitted viruses
26. The important properties the pertinent replicative cycles transmission, pathogenesis and pathology ,salient clinical features of Eastern Equine encephalitis ,St loius encephalitis and Colarado Tick viral fever.
27. The student will know and understand the laboratory methods employed for the lab diagnosis of eastern equine encephalitis ,St loius encephalitis and Colarado Tick viral fever.
28. know and understand the taxonomy of yellow fever virus
29. The important properties the pertinent replicative cycles transmission ,pathogenesis and pathology ,salient clinical features of yellow fever
30. Will be able to know the specimens required to be collected for the laboratory diagnosis , the general principles of methods required for the lab diagnosis of Yellow fever.
31. The student will know and understand the lab diagnosis of Yellow fever
32. know and understand the taxonomy of Dengue Virus and its different types
33. The important properties the pertinent replicative cycles transmission ,pathogenesis and pathology ,salient clinical features of Dengue fever
34. Should be able to understand the pathogenesis of Dengue fever, Dengue Haemorrhagic fever , Dengue haemorrhagic shock.
35. Will be able to know the specimens required to be collected for the laboratory diagnosis, the general principles of methods required for the lab diagnosis of Dengue fever Dengue Haemorrhagic fever, Dengue haemorrhagic shock.
36. The student will know and understand the laboratory diagnosis of Dengue fever Dengue Haemorrhagic fever ,Dengue haemorrhagic shock
37. Classify Antiprotozoal Drugs.
38. Classify Antimalarial Drugs and describe the pharmacokinetic properties of Antimalarial Drugs.
39. Describe the mechanism of action, resistance, Spectrum and clinical uses of Antimalarial Drugs.
40. Describe the adverse effects, contraindications/ precautions & drug interactions of Antimalarial Drugs.

Theme: 4 (Infected Skin Lesions)

Learning Objectives

At the end of the theme the theme will be able to:

1. The morphological features ,cultural characters ,pathogenesis and pathology ,salient clinical features of actimycosis and Nocardiosis
2. Will be able to know the specimens required to be collected for the laboratory diagnosis ,the general principles of methods required for the lab diagnosis of actinomycosis and Nocardiosis.
3. The student will know and understand the laboratory methods employed for the lab diagnosis of Actinomycosis and Nocardiosis.
4. the student will be able to know and understand the taxonomy of Herpes Viruses
5. Will be able enumerate different herpes viruses
6. The important properties the pertinent replicative cycles transmission ,pathogenesis and pathology ,salient clinical features lesions caused by Herpes simplex virus I ,Herpes simplex Virus II and Varicella Zoster virus
7. Will be able to know the specimens required to be collected for the laboratory diagnosis , the general principles of methods required for the lab diagnosis Herpes simplex virus I , Herpes simplex Virus II and Varicella Zoster virus
8. The student will know and understand the laboratory methods employed for the lab diagnosis of Herpes simplex virus I ,Herpes simplex Virus II and Varicella Zoster virus
9. Know the important properties of Pseudomonas Aeuroginosa
10. Know the morphological features ,cultural characters ,pathogenesis and pathology ,salient clinical features Pseudomonas Aeuroginosa.
11. Will be able to know the specimens required to be collected for the laboratory diagnosis , the general principles of methods required for the lab diagnosis of burn wounds
12. The student will know and understand the laboratory diagnosis of the Pseudomonas Aeuroginosa
13. Classify Antifungal Drugs and describe the pharmacokinetic properties of Antifungal Drugs.
14. Describe the mechanism of action, resistance, Spectrum and clinical uses of Antifungal Drugs.

15. Describe the adverse effects, contraindications/ precautions & drug interactions of Antifungal Drugs.
16. Explain the morphology, pathogenesis and lab diagnosis of Actinomyces
17. Classify dermatophytes, Explain the morphological features, lab diagnosis and diagnosis of dermatophytes

Theme: 5 (Infection Control)

Learning Objectives

At the end of the theme the theme will be able to:

1. Explain importance, composition and functions of ICC and ICT
2. Explain and demonstrate the standard and transmission precautions
3. Explain and manage a case of accidental exposure of HBV and HCV
4. Define HAIs.
5. Classify HAIs
6. Enlist important organisms causing HAIs
7. Explain the precautions to prevent the HAIs
8. Explain the surveillance system of HAIs
9. Classify Hospital waste
10. Explain the segregation and disposal of hospital waste
11.
12. Classify Antimycobacterial Drugs and describe the pharmacokinetic properties of Antimycobacterial Drugs.
13. Describe the mechanism of action, resistance, antibacterial activity (Spectrum) and clinical uses of Antimycobacterial Drugs.
14. Describe the adverse effects, contraindications/ precautions & drug interactions of Antimycobacterial Drugs.
15. Empiric Antimicrobial Therapy
16. Empiric Antimicrobial Therapy Based On Microbiologic Etiology
17. Empiric Antimicrobial Therapy Based On Site Of Infection
18. Antimicrobial Therapy Of Infections With Known Etiology
19. Interpretation Of Culture Results
20. Guiding Antimicrobial Therapy Of Established Infections
21. Monitoring Therapeutic Response: Duration Of Therapy
22. Antimicrobial Pharmacodynamics
23. Pharmacokinetic Considerations
24. Management Of Antimicrobial Drug Toxicity
25. Antimicrobial Drug Combinations
26. Antimicrobial Prophylaxis

PRACTICAL LEARNING OBJECTIVES

The student will be able to know;

1. Collection of the different specimens for microbiological investigation and culture
2. Different cultural techniques utilized to isolate the different types of micro-organisms
3. Preparation of the different types of culture media.
4. Sterilization of the different types of culture media.
5. Use of the incubator and hot air oven
6. Methods employed to create the anaerobic conditions in the laboratory
7. Performance of different biochemical tests
8. Setting up of API-10 & API-20

PBL-1A

A 46-years-old man from a remote area of Forward Kahutta, Shepard by profession presented to you in BHU with complaints of pain in right Hypochondrium, off and on fever for the last six months. On palpation liver was non-tender but enlarged by two finger breadth. Ultrasound shows a singly multiloculated cyst in the right lobe of liver.

PBL-2A

A 45-year-old man with no medical history was admitted to the intensive care unit (ICU) 10 days ago after suffering third-degree burns over 40% of his body. He had been relatively stable until the last 24 hours. Now he is febrile (39.5°C [103.1°F]), and his white blood cell count has risen from 8,500 to 20,000/mm 3. He has also had an episode of hypotension (86/50 mm Hg) that responded to a fluid bolus. Blood cultures were obtained at the time of his fever and results are pending.

PBL-3A

A 28-years-old female with 2nd degree burn admitted in burn unit with BP 90/70mmHg, Pulse 114bpm, RR 22/min. You provided basic burn care, maintained fluid intake and output and she is now hemodynamically stable. After a week of admission, she developed severe fever and draining pus from the site of burn. Patient is in septic shock.

RLEARNING RESOURCES

Reference Books

- **ROBBINS BASIC PATHOLOGY 8th ED**
- **ROBBINS AND CORTAN PATHOLOGY BASIS OF DISEASE WITH SEARCHABLE FULL TEXTONLINE 8th ED**
- **ROBBINS AND CORTAN ATLAS OF PATHOLOGY 2nd ED.**
- **ROBBINS AND COTRAN REVIEW OF PATHOLOGY 3rd ED**
- **BRS PATHOLOGY**
- **MEDICAL MICROBIOLOGY BY JAWETZ, MELNICK & ADELBERG'S 25TH EDITION**
- **CLINICAL PHARMACOLOGY BY KATZUNG**
- **RANGE AND DALE'S PHARMACOLOGY WITH ONLINE ACCESS 7th ED**
- **MCQs IN PHARMACOLOGY WITH EXPLANATORY ANSWER**

Web Links

Following online medical dictionaries can be referred

www.nlm.nih.gov
www.medterms.com
www.bloodmed.com
www.online-medical-dictionary.org
www.medscape.com
www.jpathology.com
www.cdc.com

Caution!
Eighty percent (80%) attendance is mandatory to appear in Module/Professional/University Examination as per Pakistan Medical and Dental Council (PMDC) regulations.

AJK Medical College, Muzaffarabad

Infectious Diseases Module (3rd Year)

WEEK-I

DATE					
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8:00am-9:00 am	**LGIS** Introduction to Module **Prof. Munir & Team**	**LGIS** Brucella **Dr. Munir**	**National Holiday**	**LGIS** Aspergillosis **Dr. Mumtaz**	**SGD** Cell wall Synthesis Inhibitors-IV
9:00am-10:00am	**Clinical Rotation**	**LGIS** Mumps/Measles **Dr. Munir**		**Clinical Rotation**	**Wrap up** **Dr. Arif Dr. Inayat**
		Break (10:00am-10:30am)			
10.30am-11.30am		**SGD** Cell wall Synthesis Inhibitors II **Wrap Up** **Dr. Arif/Dr. Inayat**	**National Holiday**		**LGIS** Systemic Mycosis **Dr. Mumtaz**
11:30am-12:30pm					**LGIS** Trichomoniasis **Dr. Seemab**
12:30pm-01:30pm	**LGIS** Common terminology used in infection disease module **Brig® Ahmed Khan/Dr. Uzma**	**LGIS** Mumps/Measles prevention **Brig® Ahmed Khan/Dr. Batool**		**LGIS** Cell wall Synthesis Inhibitors-III **Dr. Arif/Dr. Inayat**	**LGIS** Protein Synthesis inhibitors I/Prof Arif **Dr. Inayat**
	Lunch Break (01:30pm- 2:00pm)				
02:00pm-3:00pm	**LGIS** Principles of antimicrobial therapy **Dr. Arif/Dr. Inayat**	**LGIS** Cell wall Synthesis Inhibitors I **Dr. Arif/Dr. Inayat**	**National Holiday**	**Practical** Preparation and inoculation of Culture media **Dr. Mumtaz & Team-3**	**SDL**
3:00pm-4:00pm	**LGIS** Chlaymidial Diseases **Dr. Munir**	**LGIS** Mycoplasmal Diseases **Dr. Uzma**			

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AJK Medical College, Muzaffarabad

Infectious Diseases Module (3rd Year)

WEEK-2

DATE					
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8:00am-9:00am	**LGIS** Herpes Viruses **Dr. Semaab**	**LGIS** Rikettsial diseases **Dr. Munir Sh.**	**LGIS** Entomology (Insect Bite) **Brig® Ahmed Khan**	**LGIS** Nucleic Acid Synthesis Inhibitors-III **Dr. Arif/Dr. Inayat**	**LGIS** Histopathological diagnosis of infectious diseases **Dr. Sarosh**
9:00am-10:00am	**Clinical Rotation**	**LGIS** Protein synthesis Inhibitors-III **Dr. Arif**	**LGIS** Malarialogy **Brig® Ahmed Khan**	**Clinical Rotation**	**LGIS** Burn wound infections (Pseudomonas) **Dr. Mumtaz**
		Break (10:00am-10:30am)			**Break**
10.30am-11.30am		**LGIS** Leishmaniasis **Dr. Munir Sh.**	**SGD** Nucleic Acid Synthesis Inhibitors-I		LGIS Dracunculous medinensis Dr Munir
11:30am-12:30pm		**SGD** Protein Synthesis Inhibitors-IV **Wrap-up**	**LGIS** Actinomycosis **Dr. Mumtaz**		
12:30pm-01:30pm	**PBL-1A** **Dr. Munir & Team 3**			**LGIS** **LGIS** Arbo viruses Dengue fever **Dr. Munir/ Dr. Mumtaz**	**LGIS** Cutaneous and Sub cutaneous Mycosis **Dr. Mumtaz**
	Lunch Break (01:30pm- 2:00pm)				
02:00pm-3:00pm	**SGD** Protein Synthesis Inhibitors-II **Wrap Up** **Dr. Arif/Dr. Inayat**	**Practical** Setting up of Culture Incubator Hot Air oven Anaerobic Jar **Dr. Munir & Team-3**	**LGIS** Yellow fever Virus **Dr. Munir Sh.**	**LGIS** Malaria **Dr. Munir Sh.**	**SDL**
3:00pm-4:00pm			**LGIS** Nucleic Acid Synthesis-II **Dr. Arif/Dr. Inayat**	**LGIS** **Filariasis** **Dr Munir**	

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AJK Medical College, Muzaffarabad

Infectious Diseases Module (3rd Year)

WEEK-III

DATE					
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8:00am-9:00am		**LGIS** Urinary tract Infections **Dr. Mumtaz**	**LGIS** Hepatitis C **Dr. Mumtaz**	**LGIS** Antifungal Drugs-I **Dr. Arif/Dr. Inayat**	**SGD** Antiviral Drugs-I **Wrap up** **Dr. Arif/Dr. Inayat**
9:00am-10:00am		**LGIS** Antimycobacterial Drugs-I **Dr. Arif/Dr. Inayat**	**LGIS** Antimycobacterial Drugs-III **Dr. Arif/Dr. Inayat**	**Clinical Rotation**	
		Break (10:00am-10:30am)			**Break**
10.30am-11.30am		**SGD** Antimycobacterial Drugs-II **Wrap up** **Dr. Arif/Dr. Inayat**	**SGD** Antimycobacterial Drugs-IV **Wrap up** **Dr. Arif/Dr. Inayat**		**LGIS** Hepatitis B Dr. Munir
11:30am-12:30pm	**Holiday**				**LGIS** Antiviral Drugs-II **Dr. Arif/Dr. Inayat**
12:30pm-01:30pm		**LGIS** Schistomiasis **Dr. Mumtaz LGIS**	**LGIS** Hospital acquired infections **Dr. Mumtaz**	**LGIS** Diphylobothrium latum **Dr. Munir**	**LGIS** Dracunculous medinensis **Dr. Munir**,
		Lunch Break (01:30pm- 2:00pm)			
02:00pm-3:00pm		**PBL-1B** **Dr Mumtaz ,Dr wafa & Team 3**	**PBL-2A** **Dr. Arif & Team**	**SGD** Antifungal Drugs-II **Wrap up** **Dr. Arif/Dr. Inayat**	**SDL**
3:00pm-4:00pm					

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AJK Medical College, Muzaffarabad

Infectious Diseases Module (3rd Year)

WEEK-III

DATE					
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8:00am-9:00am	**Holiday**	**LGIS** Urinary tract Infections **Dr. Munir**	**LGIS** Diphylobothrium latum **Dr. Munir**	**LGIS** Antifungal Drugs-I **Dr. Arif/Dr. Inayat**	**SGD** Antiviral Drugs-I **Wrap up** **Dr. Arif/Dr. Inayat**
9:00am-10:00am		**LGIS** Antimycobacterial Drugs-I **Dr. Arif/Dr. Inayat**	**LGIS** Antimycobacterial Drugs-III **Dr. Arif/Dr. Inayat**	**Clinical Rotation**	**LGIS** Schistomiasis **Dr. Mumtaz**
		Break (10:00am-10:30am)			**Break**
10.30am-11.30am		**PBL-1B** **Dr. Munir & Team 3**	**SGD** Antimycobacterial Drugs-IV **Wrap up** **Dr. Arif/Dr. Inayat**		**SEMINAR** Hepatitis B Dr. Munir, Dr. Shafaq Hanif, Dr. Khalid Awan, Dr. Tahir Aziz
11:30am-12:30pm					
12:30pm-01:30pm		**LGIS** Hydatid Disease **Dr. Munir**	**LGIS** Onchcerca Volvolus Loa Loa **Dr. Munir**	**LGIS** Hospital acquired infections **Dr. Mumtaz**	**LGIS** Antiviral Drugs-II **Dr. Arif/Dr. Inayat**
	Lunch Break (01:30pm- 2:00pm)				
02:00pm-3:00pm	**Holiday**	**PBL-2A** **Dr. Arif & Team**	**LGIS** Hepatitis C **Dr. Mumtaz**	**SGD** Antifungal Drugs-II **Wrap up** **Dr. Arif/Dr. Inayat**	**SDL**
3:00pm-4:00pm		**SGD** Antimycobacterial Drugs-II **Wrap up** **Dr. Arif/Dr. Inayat**			

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AJK Medical College, Muzaffarabad

Infectious Diseases Module (3rd Year)

WEEK-IV

DATE					
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8:00am-9:00am	**LGIS** Clinical use of antimicrobials-I **Dr. Arif/Dr. Inayat**	**LGIS** Clinical use of Antimicrobials-II **Dr. Arif/Dr. Inayat**	**LGIS** Miscellaneous Antimicrobials-II **Dr. Arif/Dr. Inayat**	**LGIS** Anti malarial Drugs-II **Dr. Arif/Dr. Inayat**	**SGD** Antiamebic drugs-III **Wrap up** **Dr. Arif/Dr. Inayat**
9:00am-10:00am	**Clinical Rotation**	**LGIS** Dynamics of transmission of infectious disease **Brig® Ahmed Khan**	**SGD** Antiamebic Drugs-I **Wrap up** **Dr. Arif/Dr. Inayat**	**Clinical Rotation**	**LGIS** Antimalarials-IV **Dr. Arif/Dr. Inayat**
Break		**Break (10:00am-10:30am)**			**Break**
10.30am-12.30pm		**LGIS** Miscellaneous Antimicrobials-I **Dr. Arif/Dr. Inayat**	**LGIS** Employees Health **Dr. Mumtaz**		**LGIS** Antihelmenthics Drugs-I **Dr. Arif/Dr. Inayat**
12:30pm-01:30pm	**LGIS** Biosaftey requirements for Microbiology Lab **Dr. Munir**	**LGIS** ZICA Virus **Dr. Munir**	**LGIS** Antiamebic Drugs-II **Dr. Arif/Dr. Inayat**	**SGD** Antimalarials-III **Wrap up** **Dr. Arif/Dr. Inayat**	**PBL-3B** **Dr. Munir & Team 3**
Lunch Break (1:30 to 2:00 PM)					
02:00pm-3:00pm	**PBL-2B** **Dr. Arif & Team**	**PBL-3A** **Dr. Munir & Team 3**	**LGIS** Anti malarial Drugs-I **Dr. Arif/Dr. Inayat**	**LGIS** Infection control; Infection control team Infection Control committee **Dr. Mumtaz**	**SDL**
3:00pm-4:00pm			**PRACTICAL** Hand washing Setting up of API-10 and API-20 **Dr. Munir/Dr. Mumtaz & Team-3**		

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AJK Medical College, Muzaffarabad

Infectious Diseases Module (3rd Year)

WEEK-V

DATE					
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8:00am-9:00am	**LGIS** Infection Control; Device associated infections **Dr. Mumtaz**	**Sports Week**			
9:00am-10:00am	**LGIS** Infection control; Hospital waste management Brig® Ahmed Khan /Dr. Sarwat				
	SGD Antihelmenthic Drugs-II **<u>Wrap up</u>** **Dr. Arif/Dr. Inayat**				
10.30am-11.30am					
11:30am-12:30pm					
12:30pm-01:30pm					
Break (01:30pm- 2:00pm)					
02:00pm-3:00pm	**LGIS** Antihelmenthic Drugs-III **Dr. Arif/Dr. Inayat**				
3:00pm-4:00pm	**SDL**				

Inquires & trouble shooting

Department of Medical Education,
AJK Medical College, Muzaffarabad, AJK, Pakistan
Email: ayub@ajkmc.edu.pk, DME@ajkmc.edu.pk
Tel: +92-5822-920527-8/808, 816