

Paramedical Program

Specialization	Medical Laboratories
Course Number	21107251
Course Title	Immunology
Credit Hours	(3)
Theoretical Hours	(2)
Practical Hours	(3)



Brief Course Description:

This course deals with innate and acquired defense mechanisms. It focuses on the involvement of the immune system in various disease states and clinical conditions. It also provides an introduction to the principles of antigen-antibody reactions and their application in many laboratory tests.

Course Objectives:

Upon the completion of the course, the student should be able to:

1. Explain the process of immunity.
2. Discuss the principles of antigen-antibody interactions.
3. Discuss test methods used to detect antigen-antibody reactions.
4. Discuss the pathophysiology of hypersensitivity reactions.
5. Discuss common immunological disease states.



Detailed Course Description:

Unit Number	Unit Name	Unit Content	Time Needed
1	Introduction	1-Definition 2- Self & non self recognition (innate) 3- Immunity types.	
2	Natural Immunity	1. Definition. 2. Factors. 3. Mechanism. 4. Mechanical & physical & chemical. 5. Cellular factors.	
3	Antigen & Antibody	1. General specification of Antigen & chemical structure. 2. Antigen specificity. 3. Antibody structure (Immunoglobulin) & the relation with Efficiency. 4. Type of Antibody arranged according to Immuno electrophoresis : IgM , IgG , IgE , IgD , IgA , & The importance of each one in diagnosis. 5. Complement definition, types, importance, serological test uses.	
4	Antigen Antibody Reaction	Serological Test: 1. Precipitation. 2. Agglutination. 3. Complement fixation. 4. ELISA test. 5. Immunofluorescence. 6. Polymerase chain reaction (PCR). 7. Radioimmunoassay (RIA).	
5	Acquired immunity	1. Definition. 2. Humeral Response. 3. Cellular Response. 4. Acquired immunity: active, passive. 5. Vaccines: a) Toxoid b) Dead c) Attenuated 6. Childhood vaccines program.	

6	Agents of Immunity	<ol style="list-style-type: none"> 1. Viruses include : Polio virus ,Measles , Mumps , Varicella Zoster, Rubella , Hepatitis :B,C 2. Bacteria include : Dephtheroid bacilli ,TB , Typhoid bacilli , Streptococci. 3. Parasite include : Toxoplasma , Malaria , Worms . 4. Fungi . 	
7	Hypersensitivity & Autoimmunity:	<ol style="list-style-type: none"> 1. Definition 2. Types ,causes & mechanism . 3. Autoimmunity diseases , causes & types. 4.Immunodeficiency <ul style="list-style-type: none"> - definition - types 	
8	Several tests study	<ol style="list-style-type: none"> 1. FTA-ABS 2. Immunoelectrophoresis. 3. ELISA 	
9	Practical Part	<ol style="list-style-type: none"> 1- Widal tset. 2- Detection of Brucellosis. 3- ASO titer. 4- CRP test. 5- RF test. 6- Pregnancy test. 7- ToRCH. TEST 8- Paul bunnel test. 9- Detection of Mycoplasma Pneumonia. 10- VDRL. 11- RPR. 12- Gel diffusion test. 13- Skin sensitivity test. 14- Cold agglutinin. 	



Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Practical Exam	10%	--/--/----
	Final Exam	35%Theory 15%Practical	--/--/----

Teaching Methodology:

- ❖ Lectures
- ❖ Slides and posters
- ❖ Practice inside labs

Text Books & References:

Reference

Reference1-1P. Parham, Peter Parham, The Immune System, Garland Pub2004: 0815340931

2-Richard A. Goldsby (Editor}, Barbara A. Osborne, Thomas J. Kindt, Janis Kuby, Janis Kuby, Richard A. Goldsby Immunology: W H Freeman & Co 2006 ISBN-10: 0716785900

3-Charles Janeway, Paul Travers, Mark Walport, Mark Shlomchik, Mark J. Shlomchik, Immunobiology: The Immune System in Health and Disease Garland Pub2004, ISBN-10 0815341016

4-Abul K. Abbas, Andrew H. Lichtman Basic Immunology: Functions And Disorders of the Immune System, 2006-2007 W B Saunders Co,2006 ISBN-10: 1416029745

