

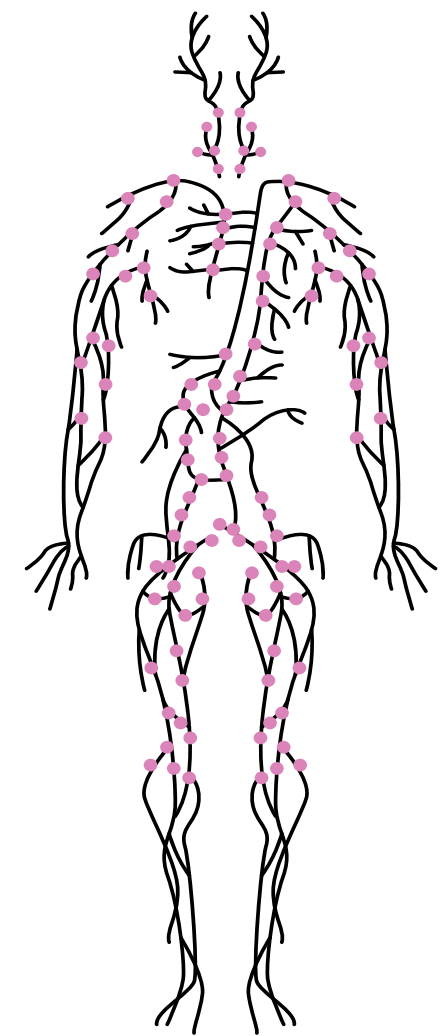
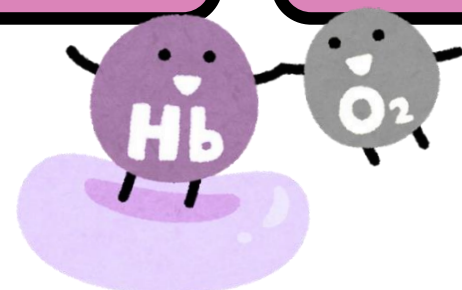
MID | Lecture 1-11

﴿وَقُلْ رَبِّ ادْخُلْنِيْ مُدْخَلَ صِدْقٍ وَّاَخْرِجْنِيْ مُخْرَجَ صِدْقٍ وَاَجْعَلْ لِّيْ مِنْ لَّدُنْكَ سُلْطٰنًا نَّصِيْرًا﴾

Past Papers

Written by : Sara Masadeh
Sara Qudaisat

Reviewed by : Mais
alrahahleh



Q1: The inhibition of C5 causes efficient decrease in the following:

Answer: MAC

Q2: How can the classical pathway of complement system be activated?

Answer: C1q binds to the fc portion of the antibody.

Q3: Which of the following antibodies is the most abundant in the mucosa?

- A. IgM
- B. IgA
- C. IgG
- D. IgD
- E. IgE

Answer: B

Q4: Which of the following is a soluble recognition molecule of the innate immunity?

- A. TLR
- B. RLR
- C. NLR
- D. Ficolin
- E. C5

Answer: D

Q6: One of the following is wrong regarding interferons:

- A. Inhibit assembly of virus components
- B. Increase transcription of RNase
- C. Downregulate the expression of MHC I

Answer: C

Q7: Small cationic peptides, produced by epithelial cells of mucosal surfaces and by granule-containing leukocytes:

- A. Lectins
- B. Defensins
- C. Cathelicidin

Answer: B

Q8: Networks of extracellular fibers, primarily composed of DNA from phagocytes, which bind pathogens:

Answer: Neutrophil extracellular traps (NETs)

Q9: DAMPs are:

Answer: Endogenous molecules that are produced by or released from damaged and dying cells.

Q10: Which of the following increases phagocytosis to bacterial cell?

- A. Binding of an immunoglobulin to the bacteria.
- B. Deposition of c3b on the bacterial surface.

Answer: B

Both answers could be right

Q11: Which of the following happens to a B cell after its interaction with the ligand?

A. increase in the RNA and ribosomes

B. decrease cell size

Answer: A

Q12: Which antibody transmits inhibitory signals to B cells?

Answer: FcγRIIb

Q13: Correct about interepithelial T cells:

A. are $\alpha\beta$ T cells

B. have limited antigen diversity

Answer: B

Q14: Which factor is needed for the survival and functioning of regulatory T cells?

- A. INF
- B. TNF
- C. IL-2
- D. IL-10
- E. CD38

Answer: C

Q15: Positive selection of thymocytes in the thymus occurs when they express the functional critical receptor:

- A. CD28
- B. MHC I
- C. MHC II
- D. TCR
- E. Fc receptor

Answer: D

Q16: When a T cell is cultured with an antigen-presenting cell (APC), which molecule's increased expression would suppress T cell activation?

- A. CTLA-4
- B. IL-2 receptor
- C. IL-2
- D. b7-1

Answer: A

Q17: Which of the following statements about sepsis is correct?

- A. According to 2016 Sepsis 3 definitions, it can occur with or without infection.
- B. It may lead to immunosuppression.
- C. It has as a low mortality rate of 2%.
- D. It is common in healthy female adults

Answer: B

Q18: What is the correctly matched choice about T helper cells function:

- A. TH1: activate eosinophils
- B. TH17: secrete IFN- γ
- C. TH1: activate macrophages to kill the ingested microbe

Answer: C

Q19: Which receptor is encoded by somatic DNA recombination:

- A. RIG like receptor
- B. B cell receptor
- C. NOG like receptor
- D. Toll like receptor
- E. Pattern recognition receptor

Answer: B

استغفر الله العظيم واتوب إليه **

Q20: Which is an example of an antimicrobial peptide:

- A. C₃
- B. Human Defensins
- C. Mucin
- D. Natural antibodies
- E. Pentraxin

Answer: B

Q21: Which of the following is considered a soluble pattern recognition molecule:

- A. NOD like Receptor
- B. C₅
- C. Toll like Receptor
- D. MBL
- E. C₃

Answer: D

Q22: Which of the following is found in germinal centers:

Answer: Memory B cell formation

Q23: Which type of cell bound receptor can recognize LPS:

- A. TLR₄
- B. B cell receptor
- C. NLR
- D. T cell receptor
- E. TLR₂

Answer: A

Q24: Which of the following is true regarding primary and secondary immune responses:

- A. Secondary response produces more antibodies
- B. Primary response produces more antibodies
- C. Both produce the same amount of antibodies
- D. Secondary produces antibodies slower
- E. Primary response produces antibodies faster

Answer: A

Q25: Which of the following initiates the classical pathway of the complement System:

- A. C1q
- B. C1r
- C. C1s
- D. C3b
- E. C4

Answer: A

Q26: The correct statement about neutrophils:

Answer: Production of neutrophils is stimulated by granulocyte colony-stimulating factor (G-CSF)

Q27: Which of the following doesn't Express MHC II:

- A. Neutrophil
- B. Endothelial stimulated cell
- C. C Macrophage
- D. B cell
- E. Dendritic cell

Answer: A

Q28: One mouse (Mouse 1) is injected with a drug that causes the degradation of all antibodies, while the other mouse (Mouse 2) is a control (not injected), both are exposed to Staphylococcus bacteria, which of the following is true:

- A. The number of phagocytosed bacteria is less in mouse 1
- B. Monocytes in the circulation in mouse 1 is higher
- C. No difference in the mice
- D. The number of C1q molecules will be less in mouse 2
- E. More antibodies will be produced in mouse 1

Answer: A

Since ABs are used for opsonization

Q29: One of these is considered as primary lymphoid organ:

- A. Thymus
- B. Lymph nodes
- C. Lymph vessels
- D. Spleen
- E. None of the above

Answer: A

Q30: The relationship between innate and adaptive immunity can be described by one of the following:

- A. Innate immunity can recognize foreign antigens while adaptive immunity cannot.
- B. Adaptive immunity has evolved before innate immunity in all life forms.
- C. Innate immune responses are activated following the recognition of antigens by adaptive immunity
- D. Adaptive immune responses are activated several days after innate immunity.
- E. Adaptive immunity can recognize foreign antigens while innate immunity cannot.

Answer: D

Q3 1: Which of the following describes the immune system:

Answer: The immune system includes the role of physical, cellular, and chemical systems that are in place and that respond to all aspects of foreignness

Q32: Which of the following cell types is expected to participate last in the immune response during the first exposure to a viral pathogen?

- A. $\gamma\delta$ T cells
- B. Neutrophils
- C. Naïve CD8+ T cells
- D. Natural killer cells
- E. Macrophages

Answer: C

Since innate immunity starts response first

Q33: One Of the following in not a symptom of DiGeorge's Syndrome:

- A. Cardiac abnormalities
- B. Abnormal facies
- C. Cleft palate
- D. Hypoglycaemia
- E. All of the above are symptoms

Answer: D

Q34: What cells have IgM & IgD receptors on their surface:

- A. Mature T cells
- B. Mature naïve B cells
- C. Immature B cells
- D. Neutrophils
- E. Immature T cells

Answer: B

Q35: The recombination activating genes (RAGs) encode parts of a protein complex that plays important roles in:

- A. Activating complement proteins
- B. Maturation of neutrophils
- C. Assembling MHC peptide complex
- D. Initiation of V(D)J recombination

Answer: D

Q36: Which of the following regarding the process of the B cell receptor BCR gene rearrangement is correct?

- A. Gene rearrangement takes place in mature B cells only
- B. Light and heavy chains both contain diversity, variable, and joining regions (VDJ)
- C. The gene rearrangement of the light chain happens first
- D. VDJ recombination occurs after encountering the antigen by the B cells for the first time
- E. Gene rearrangement occurs in gene for both light and heavy chains

Answer: E

- Q37: Which of the following combinations regarding helper T cells is correct?
- A. IL-5 is an activator of basophils and serves as the principal link between T cell activation and basophilic inflammation.
 - B. IL-5 contributes to an alternative form of macrophage activation to express enzymes that promote collagen synthesis and fibrosis, stimulates mucus production, and may stimulate peristalsis in the gastrointestinal system.
 - C. TH17 : Enhances defenses against fungal infections
 - D. IL-22 also stimulates the production of antimicrobial substances, and decrease the epithelial barrier function

Answer: C

Q38: IL-2 is secreted from:

- A. Activated tissue resident macrophages
- B. Native B cells
- C. Activated CD4+ T cells
- D. Mature dendritic cells
- E. Native T cells

Answer: C

Q39: Which of the following is function of RAG enzymes ?

- A. initiate repair by forming hairpin loop
- B. add in Nucleotides into the separated variable and joining segments
- C. Initiate V(d)j recombination
- D. open the hairpin loop

Answer: C

Q40: which of the following is true about BCR ?

- A. The variable regions are responsible for effector functions.
- B. Only recognizes linear peptides that have no conformation
- C. it can't be in the soluble form
- D. its signaling functions are mediated by CD3 proteins
- E. recombination occurs in both heavy and light chains

Answer: E

Q41: blocking of CTLA-4 will result in which reaction ?

Answer --B7 & CD28

Q42: A patient encounters the helminth *Onchocerca volvulus* after swimming in a parasite-infested river in West Africa. Following interaction with the patient's innate immune system, one would expect and hope for the development of which subtype of T cells in response to the organism?

- A. TH₀
- B. TH₁.
- C. TH₂.
- D. Treg.
- E. NKT.

Answer: C

Q43: This parasite (*Onchocerca volvulus*) lives outside its host's cells (extracellular); therefore, cytotoxic T cells (CTLs) are ineffective in clearing the organism. This inability on the part of CTLs is due to their requirement to engage which of the following surface structures for their cytotoxic activity?

- A. organism-specific antigen.
- B. MHC class I-peptide complex.
- C. MHC class II-peptide complex.
- D. BCR

Answer: B

Q44: A child is scratched by a bat. Because of the risk of rabies, the child is immediately given human rabies immune globulin. This is an example of which of the following?

- A. passive immunization.
- B. active immunization.
- C. adaptive immunity.
- D. innate immunity

Answer: A

Q45: What structural feature is uniquely found on IgA in breast milk and not found on serum IgM?

- A. Fab
- B. FcR
- C. Hinge region
- D. J chain
- E. Secretory piece

Answer: E

** اللهم صل على نبيينا محمد

Q46: Which of the following involves as ROS defect?

Answer: Chronic granulomatous disease

Q47: Persons with helminth infections mount immunologic responses that involve IgE and eosinophils. Which two cytokines are most important for these responses to occur?

- A. IL-1 and tumor necrosis factor (TNF)
- B. IL-4 and IL-5
- C. IL-10 and transforming growth factor beta (TGF- β)
- D. IL-12 and interferon gamma (IFN- γ) (E) IFN- α and IFN- β

Answer: B

Q48: Activation of macrophages is best achieved by which cytokine?

- A. Interferon gamma (IFN- γ)
- B. Granulocyte monocyte colony-stimulating factor (GM-CSF)
- C. Interleukin-1
- D. Macrophage chemotactic protein (MCP)
- E. Transforming growth factor beta (TGF- β)

Answer: A

Q49: About TH17?

Answer: Neutrophil and monocyte activation

Q50: Which cytokine is essential for T-cell proliferation and is also necessary for the production of CD25-positive regulatory T cells?

- A. IL-2
- B. IL-3
- C. IL-4
- D. IL-5
- E. IL-6

Answer: A

Q51: Edward Jenner vaccinated against smallpox using?

- A. Killed smallpox virus
- B. A recombinant protein derived from smallpox
- C. An unrelated virus
- D. Toxoid
- E. Cowpox

Answer: E

Q52: A Fab fragment is:

- A. .A Is produced by pepsin treatment
- B. Is produced by separation of heavy and light chains
- C. Binds antigen
- D. Lacks light chains
- E. Has no interchain disulfide bonds

Answer: C

Q53: SCID is a problem associated with:

Answer: T cells

Q54: Criteria for sepsis?

Answer: Organ dysfunction caused by dysregulated immune response

Q55: Di George syndrome results from a defect in?

- A. Purine nucleoside phosphorylase
- B. WASP
- C. Thymic development
- D. DNA repair
- E. CD3

Answer: C

Q56: Anaphylaxis can be triggered by cross-linking of IgE receptors on...?

- A. Monocytes
- B. B-cells
- C. eosinophils
- D. neutrophils
- E. mast cells.

Answer: E

Q58: Which of the following isotypes of antibodies activate the complement cascade if bound to antigen?

- A. IgA and IgD
- B. IgA and IgE
- C. IgA and IgM
- D. IgE and IgG
- E. IgM and IgG

Answer: E

Q59: Atopic people produce an increased amount of IgE. Of the following, which is the most likely explanation for the increased amount of IgE?

- A. Large amounts of C3a produced by the alternative pathway.
- B. Large amounts of IL-1 produced by dendritic cells.
- C. Large amounts of IL-2 produced by macrophages.
- D. Large amounts of IL-4 produced by Th-2 cells.

Answer: D

Q60: The first immunoglobulin heavy chain class to be expressed on the surface of a newly produced B-cell is:

- A. IgA
- B. IgD
- C. IgE
- D. IgG
- E. IgM

Answer: E

Q61: An epitope is:

- A. Is the area on an antigen which contacts antibody
- B. Is the area on an antibody which contacts antigen
- C. Requires both antigen-binding arms of the antibody molecule for its recognition
- D. Is usually composed of a linear sequence of amino acids
- E. Is usually associated with a concave region of the

Answer: A

Q62: Mature naïve B cells:

- A. Central lymphoid tissues
- B. Cells express both IgM and IgD at their surface
- C. with nonproductive b-chain VDJ rearrangement can be rescued by further rearrangement
- D. produced by SC is required for development of B lineage cells

Answer: B

Q63: Regarding interleukins, which one of the following is the most accurate?

- A. IL-2 is made by B cells and increases class switching from IgM to IgG.
- B. IL-4 is made by cytotoxic T cells and mediates the killing of virus-infected cells.
- C. IL-12 is made by eosinophils and enhances the production of cells that mediate immediate hypersensitivity.
- D. Gamma interferon is made by Th-1 cells and activates macrophages to phagocytose more effectively.

Answer: D

Q64: Which one of the following sets of cells can present antigen to helper T cells?

- A. B cells and dendritic cells
- B. B cells and cytotoxic T cells
- C. Macrophages and eosinophils
- D. Neutrophils and cytotoxic T cells
- E. Neutrophils and plasma cells

Answer: A

Q65: Which receptor is encoded by somatic DNA recombination:

- A) T-cell Receptor
- B) CD20
- C) B-cell Recepto

Answer: C

Q66: Which of the following Antibodies occurs as a pentameric structure?

- A) IgM
- B) IgG
- C) IgA
- D) IgE
- E) A+C

Answer: A

Q67:Defense against parasites (allergic diseases):

- A) RAG
- B) DN1
- C) Recognized ligand
- D) IgE

Answer:D

Q68:One of the following is expected to increase phagocytosis of bacteria?

- A) Production of antibody proteases.
- B) Binding of immunoglobulin Fc portion by bacterial proteins.
- C) Bacterial biofilm formation
- D) Deposition of C3b on the bacterial surface.

Answer:D

Q69: The cell type that can best activate naive CD4+ T-cell is:

- A) Macrophage
- B) B lymphocyte
- C) Conventional dendritic cell
- D) Plasmacytoid dendritic cell
- E) CD4+ T-cell

Answer: C

Q70:How many complementarity determining regions (CDR) in one Fc portion of an antibody?

- A) 0
- B) 6
- C) 4
- D) 3

Answer:A

Q71: The recognition of a pathogen-associated molecular patterns (PAMP) can be done with one of the following:

- A) Mannan
- B) Peptidoglycan
- C) NF-kappa B
- D) IL-1
- E) Collectins

Answer: E

Q72: Which of the following best describes complementary system?

- A) A group of carbohydrates and lipids that circulate in the blood and a part of immune system
- B) A group of proteins for opsonization and inflammatory response
- C) Always activated proteins circulate in blood

Answer: B

Q73:neonate immunity is mainly by:

- A) IgM
- B) IgA
- C) IgG
- D) IgE
- E) IgD

Answer:C

Q74: Which of the following peripheral immune tissues is likely to be different from teen through life to old age?

- A) spleen
- B) MALTs
- C) thymus
- D) lymph nodes

Answer: C

Q75: Which of the following molecules triggers the caspase cascade and through which cells?

- A) perforins/granzymes through CD8 cells
- B) isozymes through CD4 cells
- C) isozymes through CD8 cells
- D) perforins/granzymes through CD4 cells

Answer: A

Q76:Antigen presenting cells (APCs) are required for T-cell recognition of specific antigen and activation. APCs accomplish this task by presenting antigen in the context of which of the following molecules?

- A) T-cell receptor (TCR)
- B) Toll-like receptor (TLR)
- C) Major histocompatibility complex (MHC)
- D) FCR

Answer: C

Q77: Which of the following is a characteristic of adaptive immunity in living organisms?

- A) Activated immediately upon first antigen encounter.
- B) Important for eradicating intracellular infections.
- C) Recognizes only a small number of conserved molecular patterns associated with pathogens.
- D) Deficiencies in adaptive immunity usually results in no symptoms.
- E) An ancient immune system that can be found in plants and unicellular organisms.

Answer: B

Q78:Toll like receptors are:

- A) Proteins that cause pore formation in the surface of the pathogen
- B) Proteins involved in pathogen recognition and activation of innate immune responses
- C) Proteins that relay anti-inflammatory signals
- D) Mostly found in circulation.
- E) Present only in humans.

Answer: B

Q79: Which immune system cells recognize body cells with reduced expression of MHC class I molecules?

- A) Cytotoxic T cells
- B) Dendritic cells
- C) Macrophages
- D) Natural killer cells
- E) Neutrophils

Answer: D

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Corrections from previous versions:

Versions	Slide # and Place of Error	Before Correction	After Correction
V0 → V1			
V1 → V2			