

Immunology

Q-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.*

ANS:C

Q-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*

ANS:B

Q-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*

ANS:A

Q-What structural feature is uniquely found on IgA in breast milk and not found on serum IgM?**not included**

(A) Fab

(B) FcR

(C) Hinge region

(D) J chain

(E) Secretory piece

ANS:E

Q-Involves ROS defect?

ANS: Chronic granulomatous disease

Q-Transplantation of which of the following causes GVHD (Graft vs host disease)...

ANS: Hematopoietic stem cells (Bone Marrow)

Q-Most common cause of secondary immunodeficiency?

A.protein malnutrition

B.carbohydrates malnutrition

C.extreme of age

D.immunosuppressant drug

E.anti inflammatory drug

ANS:A

Q-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

ANS:B

Q-Reason for hyperacute (immediate tissue) rejection?

ANS: Preformed antibody

Q-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)

ANS:A

Q- about TH17

ANS: Neutrophils and monocytes activation

Q-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

ANS:A

Q-Edward jennar vaccinated against smallpox using...?

A.Killed smallpox virus

B.A recombinant protein derived from smallpox C An unrelated virus

D.Toxoid

E.CowpoX

ANS:E

Q- A hapten is...?

.A An epitope

.B A paratope

.C A small chemical grouping which reacts with preformed antibodies

.D A carrier

.E An immunogen

ANS:C

Q-Fab Fragment ?

.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

ANS:C

Q-SCID is a problem associated with?

ANS: T Cells

Q-Criteria for sepsis ?

ANS: Organ dysfunction caused by dysregulated immune response

Q-Which of the following is expressed by tumor cells to suppress T cells?

A.CD40L

B.Selectin L

C.integrin

D.PDL1

E.None of the following

ANS:D

Q-BCG is used to protect against

A. Tuberculosis

B. Rabies

C. Hepatitis B

D. Influenza

E. Pertussis

ANS:A

Q-X-linked agammaglobulinemia results from a mutation in?

- .A IFN γ receptor*
- .B The CIITA promoter protein*
- .C An HLA gene*
- .D CD40L (CD154)*
- .E A tyrosine kinase gene*

ANS:E

Q-Di George syndrome results from a defect in?

.A Purine nucleoside phosphorylase

.B WASP

.C Thymic development

.D DNA repair

.E CD3

ANS:C

Q-Mutations in the gammac chain of the receptors for IL-2, 4, 7, 9 and 15 lead to?

A Reticular dysgenesis

.B Bare lymphocyte syndrome

.C Hyper-IgM syndrome

.D Severe combined immunodeficiency (SCID)

.E Build-up of toxic nucleotide metabolites

ANS:D

Q-Deletions in the T-cell CD154 (CD40L) gene produce?

- .A The hyper-IgM syndrome*
- .B Congenital X-linked agammaglobulinemia*
- .C IgA deficiency*
- .D Wiskott–Aldrich Syndrome*
- .E Deficiency in cytotoxic T-cell activity*

ANS:A

Q-A graft between members of the same species is termed an?

.A Autograft

.B Isograft

.C Xenograft

.D Allograft

.E None of the above

ANS:D

Q-Graft vs host disease often accompanies transplantation of?

.A Cartilage

.B Kidney

.C Bone marrow

.D Heart

ANS:C

Q-Hyperacute graft rejection is caused by?

.A Preformed antibody

.B CD4 lymphocytes

.C CD8 lymphocytes

.D Platelets

.E Circulating immune complexes

ANS:A

Q-The normal immunological control of tumors is referred to as?

.A Immunological tolerance

.B Immune surveillance

.C Type III hypersensitivity

.D Immunological silence

.E Superantigen recognition

ANS:B

Q-Which of the following have not provided examples of secondary immunodeficiency?

.A Viral infection

.B Lymphoproliferative disorders

.C Cytotoxic drugs

.D High fat diet

.E Low iron diet

ANS:D

Q-Primary immunodeficiency producing susceptibility to infection by viruses and molds is due to?

.A B-cell deficiency

.B T-cell deficiency

.C Phagocyte deficiency

.D Complement deficiency

.E Eosinophil deficiency.

ANS:B

Q-Rhesus D hemolytic disease of the newborn is classified as...?

- a. Type V hypersensitivity reaction*
- b. Type II hypersensitivity reaction*
- c. Type VI hypersensitivity reaction*
- d. Type I hypersensitivity reaction*
- e. Type III hypersensitivity reaction*

ANS:B

Q-The currently available vaccine to prevent hepatitis A infection is...?

a. Subunit vaccine

b. Toxoid vaccine

c. Inactivated vaccine

d. Live-attenuated vaccine

e. mRNA vaccine

ANS:C

Q-When a human pathogen is repeatedly grown and passaged in cells of a different species and then used for vaccination purposes, the resulting vaccine is referred to as a/an...?

- a. Non-live vaccine*
- b. Subunit vaccine*
- c. Nucleic acid based vaccine*
- d. Toxoid vaccine*
- e. Live attenuated vaccine*

ANS:E

Q-Which of the following vaccines should not be administered to severely immunocompromised patients...?

a. Influenza Vaccine

b. Pneumococcal Vaccine

c. Measles-Mumps-Rubella (MMR) Vaccine

d. Hepatitis B Vaccine

e. Meningococcal Vaccine

ANS:C

Q-A patient suffering from recurrent mucosal infections and celiac disease. Turns out he is affected with a primary immunodeficiency. He is most probably affected with...?

- a. Hyper- IgM Syndrome*
- b. IgA deficiency*
- c. DiGeorge Syndrome*
- d. Common variable immunodeficiency (CVID)*
- e. Wiskott-Aldrich syndrome*

ANS:B

Q-Somatic hypermutation in the Immunoglobulin (Ig) variable region occurs...?

- a. During the mitosis and differentiation of hematopoietic stem cells only*
- b. In the gametes (eggs and sperms) before fertilization*
- c. During the mitosis and differentiation of all the bone marrow cells*
- d. During the meiosis and differentiation of all the bone marrow cells*
- e. During the meiosis and differentiation of hematopoietic stem cells*

ANS:C

Q-Which of the following is true regarding the immunoglobulin (Ig) expression by B cells?

- a. All the B cells will always express the constant region gene for the Ig paternally inherited allele only*
- b. Each B cell will express the constant region gene for both maternal and paternal Ig alleles*
- c. A fraction of B cells will express the maternal allele of Ig constant gene and another fraction will express the paternal*
- d. All the B cells will always express the constant region gene for the Ig maternally inherited allele only*
- e. The expression of the constant region on B cells Ig varies between individuals, some people B cells will express the paternal only, and others will express the maternal only*

ANS:E (Not sure)

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

A. monocytes

B. B-cells

C. eosinophils

D. neutrophils

E) mast cells.

ANS:E

Q-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

ANS:E

Q-Choose the best answer. Rheumatoid arthritis is a/an...?

- A. Type I hypersensitivity*
- B. Type II hypersensitivity*
- C. Type III hypersensitivity*
- D. autoimmune disease*

ANS:C

Q-Type II Hypersensitivity...?

A) is mediated by CD8 T cells

B) involves antibody-mediated destruction of cells

C) is complement-independent

D) is antibody-independent

E) induces mast cell/IgE binding.

ANS:B

Q-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.

ANS:D

Q-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

ANS:E

Q-An epitope...?

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

ANS:A

Q-Mature naive 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

ANS: B

Q-Defects in Macrophage to kill bacteria that syenthesis Catalase ;this called ?

A. Chronic granulomatous disease

.B Chediak-Higashi disease

.C Leukocyte adhesion deficieny

.D Hashimoto's disease

.E Streptococcal infection

ANS:A

Q-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.

ANS:D

Q-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*

ANS:A

Q-An article published in the Oncoimmunology journal in September 2018. It is discussing an immunotherapy approach that relies on designing and infecting the cancer patient two viruses expressing Melanoma-associated antigen A3 (MAGE-A3). The two viruses, a replication-deficient type-5 human adenoviral (Ad-MAGEA3) and Maraba MG1 rhabdovirus(MGI- MAGEA3), are studied in this article preclinically by infecting nonhuman primates(monkeys). This immunotherapy approach is considered:

- A. Vaccination strategy*
- B. Non-specific immune stimulation strategy*
- C. Removing Immune-checkpoint blockade strategy*
- D. Small molecules strategy*
- E. Adoptive cell transfer strategy*

ANS:A

The End