IMMUNOLOGY MCQ

BY:

Dr. Algassim

Q1: Which of the fallowing cells produces Anti-bodies?

A: macrophage.
B: B-cells.
C: T-cells
D: plasma cells

The answer is D.

Explanation: when B-cell receptor (BCR) ie: IgD&IgM. Come in contact with an antigen. B-cells proliferate and differentiate into plasma cells with the help of Th2.

Q2: Which of the following Antibodies cross the placenta?

A: IgA.
B: IgE.
C: IgG.
D: IgD.

The Answer is C.

Explanation: you should know that IgA is bound to mucous membranes, IgE on mast cells, and IgD & IgM act as BCR. IgGs circulate blood. Remember that some Auto antibodies are IgGs.

Q3: a 37 weaker primagravida. Delivers a 2200 grams baby. The delivery was uneventful. Apgar score were 7 at 1 ,and 9 at 5. On examination you notice a tachycardia, hyperactivity and restlessness warm moist skin and goiter. Upon further inquiry the mother tells you that she had Garves' disease treated with radioactive iodine 3 years ago. Now she is on levothyroxine 100 microgram daily. What is the best explanation for these neonatal findings?

A: Congenital multi-nodular goiter.
B: DiGeorge syndrome (22q11).
C: Mother's Thyroid Stimulating Antibody (TSI).
D: Multiple endocrine neoplasia type B1.

The answer is: C

Explanation: Don't let the long question fool you and think of the basics. If you recall the explanation of Q2 above you will find the answer, which is obvious. Although the mother went through radioiodine therapy that resulted in HYPOthyriodism, her immune system still produces TSI. TSI can cross the placenta giving the picture of neonatal graves disease. Neonatal graves' usually has a benign course lasting 3-6 months (which is the life of maternal antibodies) and observation is sufficient.

Q4: a 24 months old boy with recurrent superficial infections, and lymphadenopathy. Presented with fever, left leg pain, swelling, erythema and inguinal lymphadenopathy. You diagnosis was cellulitis. After admission and IV antibiotics an inguinal lymph node biopsy was taken for acid-fast stain and culture. Pathology reports a non-caseating granuloma and culture growing Serratia Spp. What is the diagnosis?

A: Chronic granulomatous disease.
B: ataxia telangiectasia.
C: SCID.
D: Wiscott-Aldrich syndrome.

The Answer is A.

Explanation: The pathology report hinted the answer. In chronic granulomatous disease (CGD) the phagocytic cells fail to produce O2 free radical to kill bacteria due to congenital deficiency in NADPH oxidase. The result is chronic granuloma, hence the name. Serratia Spp are common organisms. Other catalase positive organisms can be found as will.

Q5: All the fallowing is required in B-cell class switch, except?

A: Peptide Antigen.
B:Th1 Cytokines profile.
C:CD40-CD40L
D: MHC ll-TCR
E: IL4-IL5

The Answers is B.

Explanation: when antigen presented to Th2 Through MHCll on the B-cell. Other interactions happen at the same time sometimes called immunologic synapse. Some of these interactions are mentioned above. You have to remember that for every T-dependent B cell activation a peptide must be on the top of MHC ll molecule.

Q6: in all the fallowing vaccines which one doesn't produce long-standing memory cells?

A: Pneumococcal polysaccharide vaccine (PPSV)
B: Haemophilus influenzae type B vaccine (Hib)
C: heptavalent pneumococcal conjugate vaccine (PCV 7)
D: measles mumps and rubella vaccine (MMR)

The Answer is: A

Explanation: when examining the above choices you must notice that all have peptide part that can be presented to Th cells except PPSV which is all polysaccharides. Remember that MHCl & ll only present peptides to TCR. The end result of PPSV is T-independent B cell activation with no memory cells.

Acronyms:
TCR: T cell receptor
BCR: B cell receptor
MHC: major histio-compatibility complex.
Th1,2= T Cell helper 1,2
SCID: sever combined immunodeficiency