Reproductive Block

Gratitude

Our dear batch, Do you remember one year ago when you thought ~~"No way, this is too much!!"~~

WELL, CONGRATULATION YOU DID IT..

THIS IS THE LAST SAQs FILE

We were honored to be a part of this batch and blessed to work with each member of this team, so excuse our flaws and mistakes.

ريما الرشيد عمر العايد

Done By:

Khalil Alhindas

Salman Algazlan

Ahmad Alsaleh

Nawaf Alfozan

Abdulrahman Alkaff

Reema Al-Rasheed..

Correction File

Case 1:

An 18-year-old woman presents to clinic with a fever and headache. She also complains of vaginal itching and dysuria. When asked, she says that she recently became sexually active. Physical examination reveals tender inguinal lymphadenopathy and red, pustular, painful vesicles on her labia majora.

1. What is the diagnosis?

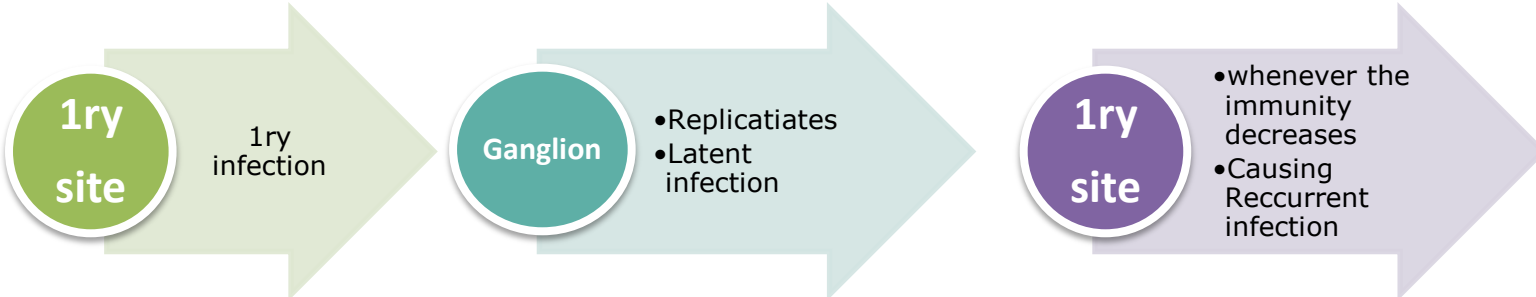
Herpes simplex virus type 2

2. Mention herpes species which are capable of causing genital herpes?

Species	HSV-2 Mostly	HSV-1 rarely
Transmission	1) Sexual transmission. 2) Perinatal transmission; causing neonatal herpes infection	
Tests	ELISA, PCR.	

3. Describe the pathogenesis of HSV-2.

- HSV-2 infects epithelial cells covering mucosa causing **primary infection.** It will cause fever, dysuria, **inguinal lymphadenopathy & ulcer** at the vagina & cervix in female or penis in male.
- Once the virus replicates & migrates to sacral ganglia it'll establish **latency for life.**
- Reactivation of the virus will cause traveling to the site of primary infection causing **recurrent infection.**



Case 2:

Ali is an engineer , 45 years old complains from severe headache , fever .fatigue and seizures. History reveals that patient was diagnosed with AIDS before 2 years ago. Ali has 2 cats at his home and likes to spend his time with them.

1. Describe HIV structure and its modes of transmission ?

The HIV consists of electron dense core containing➔ the viral genome consisting of 2 short strands of RNA + Enzymes..

1- Sexually 2- Parenterally 3- Perinatally[1] (from mother to fetus)

2. Talk briefly about the pathogenesis of HIV infection?

1-HIV has **gp120** that binds to **CD4 receptors** of target cell (CD4) that leads to enter the genome into inside the cell

2- **Reverse Transcriptase** enzyme in HIV converts the RNA to DNA

3- The DNA inserted to cell genomic DNA of target cell by integrase enzyme of HIV

4-HIV genome copies itself to make more viruses

5- HIV + CD4 fight the HIV leads to damage of CD4 cell.

6- Yong HiV leaves the CD4

7- HIV grows and mature to invade more CD4 cells.

3. Mention the possible infections could be seen in AIDS patients?

Fungal	Viral	Bacterial
Pneumocystis jiroveci	Cytomegalovirus	Mycobacterium tuberculosis
Candidiasis	Herpes	Syphilis

4. What is syncytium and its most common affected organ?

It's an indirect effect of CD4, which results in fusion of the cell membranes leading to the syncytium, most commonly presents in the **brain**.

[1] relating to, or being the period around childbirth, especially the five months before and one month after birth.

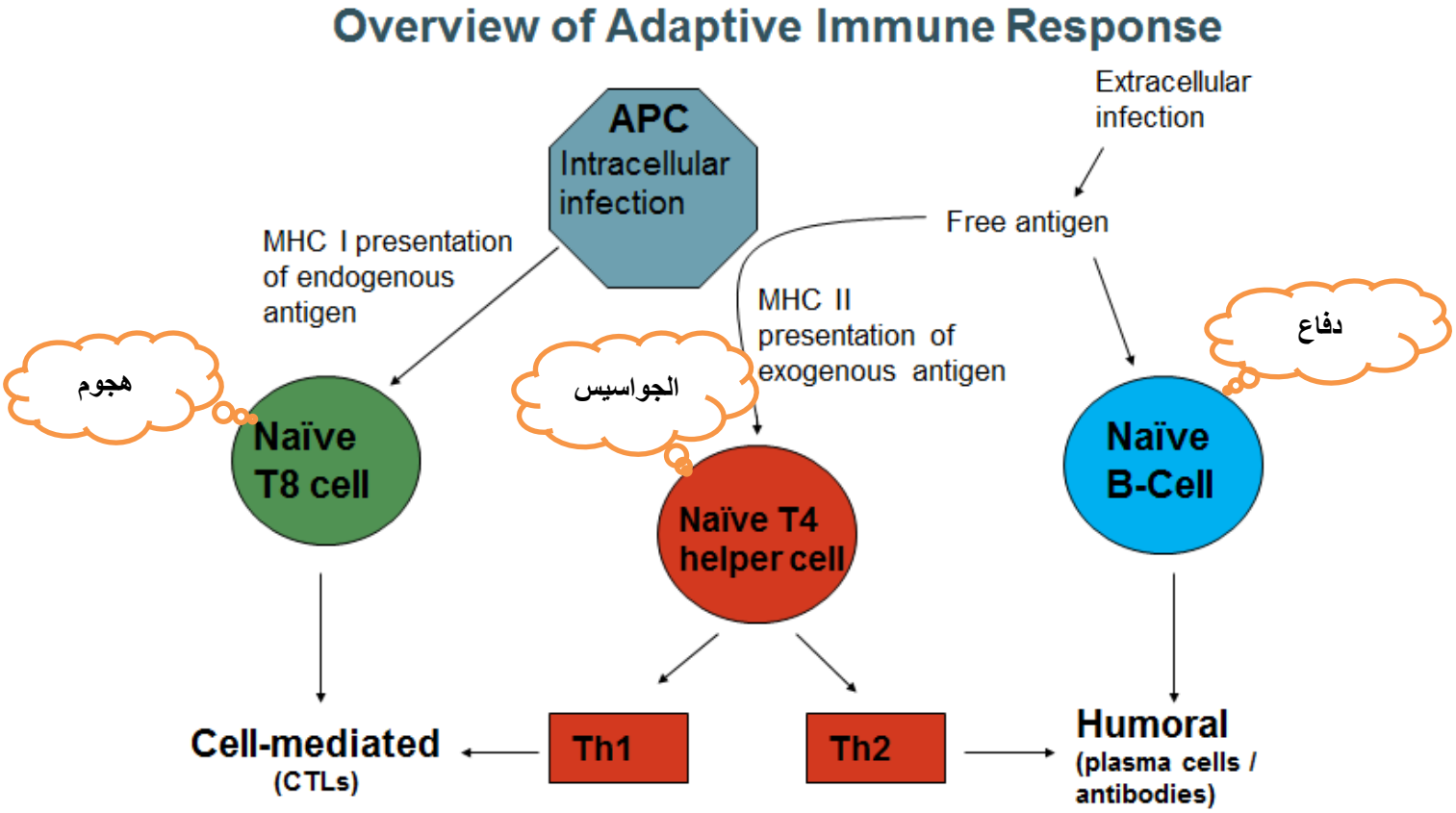
5. What are the Laboratory Markers for an HIV Infection?

- Viral load ➔Marker of HIV replication rate
- CD4 count ➔Marker of immunologic damage

6. How does our body cellular immunity respond to HIV?

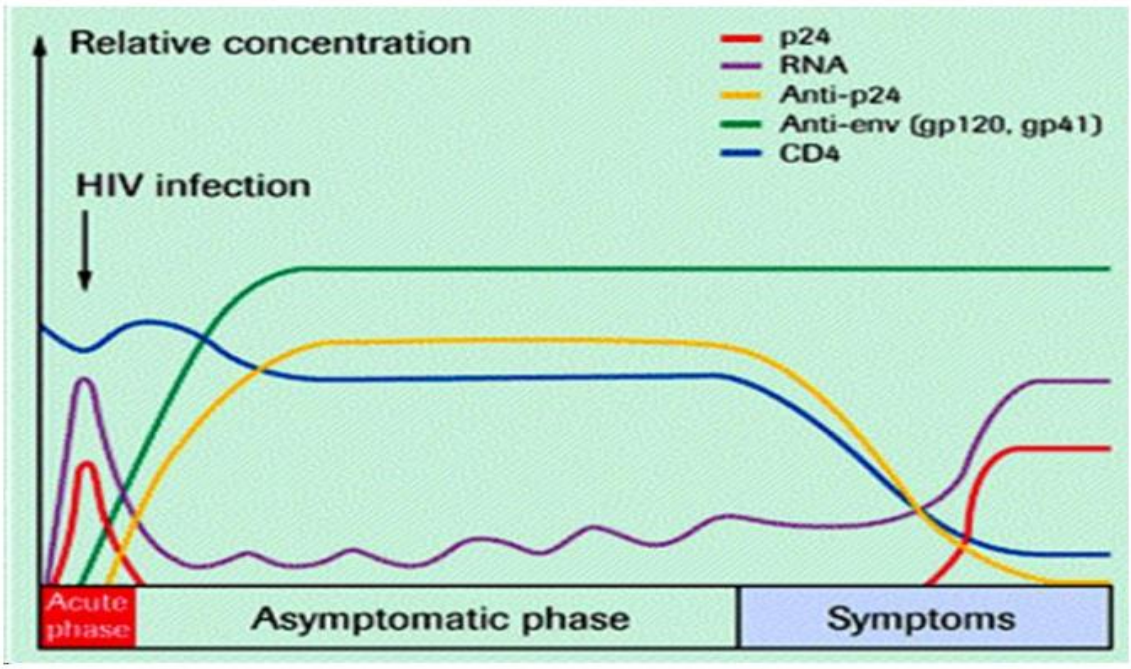
	CD8 Cytotoxic T lymphocyte	CD4 Helper T Lymphocyte	Neutralization
Recognition of the virus Ag	in context of MHC class ***I*** presentation	by an antigen presenting cell (APC)	-
Action	-**Directly** destroy infected cell -Activity augmented by Th***1*** response	(Utilizes major histocompatibility complex (MHC) class II).	-Antibodies bind to surface of virus to **prevent attachment** to target cell.

***the diagram below will help you to understand the table..**



7. Difference between chronic and acute stage for HIV?

Acute	Chronic
Lasts for about 12 week	Lasts for about 10 yrs in adults,
mostly asymptomatic, may develop symptoms resemble Flu (fever, headache, anorexia, fatigue, lymphadenopathy, skin rash) which resolved in 2 weeks.	Totally asymptomatic
Rapid viral replication	Viral load increases gradually
Gradual decrease in CD4+ T cell count.	CD4+ T cell count > 500 cells/mm3
Please Note The difference of Ag and Ab levels in the 2 phases in the pic below	



Case 3:

A 23-year-old sexually active woman presents to her physician because of a painful left knee and pain with urination. Physical examination reveals a swollen, tender, erythematous left knee with decreased range of motion. Examination of her skin reveals small papules with an erythematous base on her arms. Pelvic examination is notable for purulent endocervical discharge.

1. What is the most likely diagnosis ?

Neisseria gonorrhoeae infection➔Gram -ve diplococci➔grows on chocolate agar

Its species: Mnemonic New Chocolate Biscuits..

C. Tra**cho**matis ➔ transmitted sexually

C. **Psittaci**

C. P**neu**moniae

2. What are the complication of gonorrheal infection?

1- Pelvic inflammatory disease

2- Disseminated gonococcal infection "septicemia"

3. What are the drugs used in treatment of gonorrhea?

- 3rd generation cephalosporin(ceftriaxone and cifixime)➔1st line ,details are below..
- Fluoroquinolones(ciprofloxacin)➔ Inhibit DNA synthesis by inhibiting DNA gyrase
- Spectinomycin➔ Inhibit protein synthesis by binding to 30s ribosomal subunit.

4. What is the most serious ADR of ciprofloxacin?

Arthropathy – phototoxicity

5. What are the drugs used in treatment of conjunctivitis infection in newborn?

Silver nitrate and erythromycin

7. What is the methods used in the diagnosis of syphilis?

- Dark filed microscopy
- Non treponomal test
- Treponomal test

9. What are the clinical manifestation of syphilis?

1-Primary Syphilis:	2-Secondary Syphilis:	3- Latent Syphilis:
Painless indurated ulcer in external genetalia, cervix, anal or oral site arteritis leads to aneurysm of aorta and aortic valve ring	symmetrical mucocutaneous rash, generalized nontender lymph node enlargement	between secondary and tertiary syphilis (no clinical manifistation)
4- Tertiary Syphilis:	**5- Cardiovascular syphilis:**	**6- Congenital syphilis:**
neurosyphilis → tabes dorsalis	due to arteritis → aneurysm of aorta and aortic valve ring.	if the mother is not treated

10.What are the drugs used in treatment of syphilis?

First line therapy		Adverse effects	
Penicillin G (IV) Procaine penicillin (IM) Benzathine penicillin (IM)		Hypersensitivity Nephritis Convulsions with high doses or in renal failure	
If the Patient Allergic To Penicillins			
Drugs	Tetracyclines (Doxycycline , Tetracycline)	Macrolides (Azithromycin)	Cephalosprins (Ceftriaxone, cefixime)
MOA	Bacteriostatic binding to 30 S bacterial ribosomal subunits	Bacteriostatic binding to bacterial 50S ribosomal subunit	Bactericidal
Side effects	-Dicoloration of teeth, deformity -Hepatotoxicity, Phototoxicity -vestibular problems, Superinfection (Contraindication: Children, Pregnancy, Nursing mothers)	Gastric upset	Thrombophilibitis Superinfection Diarrhea
*Pregnant women Treat with penicillin			

Advantage:

Azithromycin, unlike erythromycin, don't inhibit cytochrome P450

Case 4:

The sperm analysis of a 34-year old male has revealed an abnormal sperm count. Testosterone and gonadotropin levels were measured on further tests and the results are shown below.

Parameter	Result	Normal
Tetosterone	90 ng\dl	270 -1070 ng/dL
FSH	0.6 U/ml	1.5 - 12.4 mIU/ml
LH	1.0 U/ml	1.8 to 8.6 IU/L.

1. What is the definition of infertility?

It is a failure of a couple to conceive **after one year** of regular, unprotected intercourse.

2. What does serum FSH >25U/L indicates?

It is indicates primary gonadal failure in both sexes.

3. List three information should be include on the clinical history of the patient?

1- congenital abnormalities. 2- past chemo/radiotherapy. 3- STDs

4. What are the causes of Hyperprolactinemia?*

1- stress. 2- seizures.

3- other pituitary disease: like prolactinoma or Idiopathic hypersecretion.

***Diagnosis of Hyperprolactinemia via excluding: Stress, Drugs and other diseases.**

5. What are the mechanism of action of testosterone in treating infertility?

1- In prostate and seminal vesicles it is convert to DHT by a-reductase.
2- In Bones and brain testosterone is metabolized to estradiol by c-p450 aromatase.

6. What does estradiol do in bones and brain?

Bones: estradiol accelerates maturation of cartilage into bone leading to closure of the epiphysis and conclusion of growth.

Brain: estradiol serves as the most important feedback signal to the hypothalamus (esp. Affecting LH secretion).

7. What are the pharmacological effects of testosterone?

1- Virilizing effects. 2- protein anabolic effects.

8. List three adverse effects of Androgens?

1- Salt and water retention leading to edema. "especially when combined with Glucocorticoids"

2- **Premature** closing of epiphysis of the long bones.

3- Reduction of testicular size.

9. What are the contraindications of Androgens?

1- Male patient with cancer of breast or prostate.

2- Severe renal and cardiac disease which predispose to edema.

3- psychiatric disorders. 4- Hypercoagulable states.

5- Polycythemia.

10 .Mention the indication of each drug?

A. HORMONAL	B. Non-hormonal
1- Mesterolone➔ **given in secondary hypogonadism.** 2- SERMs (tamoxifen and clomiphene) ➔ **both given to induce libido and bad temper in men.** 3- GnRH ➔**hypothalamic dysfunction.** 4- GnHs ➔ **secondary hypogonadism.**	**1- Antioxidant➔**protect sperm from oxidative damage. **2- Kallikrein ➔**cleaving kininogen to kinins and important for sperm motility. **3- Folic acid ➔** plays role in RNA and DNA synthesis during spermatogenesis. **4- Zinc ➔** plays role in testicular development, sperm production and motility. **5- L-carnitine➔** is important for sperm maturation.