BR4 –Board Review: Day 4

Moderator: Roy Gulick, MD

Board Review: Day 4

Moderator: Roy Gulick, MD, MPH
Faculty: Drs. Bloch, Gandhi, Maldarelli, Masur, Saag, and Tamma

7/1/2024

BOARD REVIEW DAY 4 2024

#40 **A 30-year-old woman presented with newly diagnosed HIV infection 9 months ago. She was 6 weeks pregnant.**

Initial: HIV RNA 28,000 c/ml

CD4 count 650 cells/ul

She was started on DTG + TAF/ FTC. Viral load became below level of detection and remained so throughout pregnancy and delivery.

A healthy baby girl was delivered 2 days ago.

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BOARD REVIEW DAY 4 2024

#40 **Mom is in the US and wants to breastfeed. You tell her?**

A) Yes, she should feel free to breast feed her infant

B) No, it is unsafe to breast feed in any situation

C) No, it's unsafe to breast feed because of her viral load when she presented early in pregnancy

D) Breastfeeding is a possible option: Discuss pros and cons of breastfeeding with her and let her decide

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BOARD REVIEW DAY 4 2024

#41 **A 40-year-old apple-grower from Eastern Washington State presented to the Emergency Department with the acute onset of diplopia and exertional dyspnea which started evolving over 12 hours.**

Over a few hours, the muscle weakness extended to all 4 extremities with concomitant decreases in his oxygen saturation.

He required intubation.

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BOARD REVIEW DAY 4 2024

#41 **His last meals in the 24 hours prior to the onset of symptoms were breakfast that included eggs, and toast with locally grown peaches and lunch in which he had a venison sandwich with mayonnaise with home canned corn; he had shot, butchered, and frozen the deer meat 6 months previously.**

One day before he developed diplopia and dyspnea, he sprayed 10 acres of his apple trees with a potent insecticide on a windy day.

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BOARD REVIEW DAY 4 2024

#41 **His vital signs were normal including a normal temperature with the exception of an oxygen saturation of 89% with a respiratory rate of 20 per minute.**

Skin examination was unremarkable.

A full beard and very long hair were noted.

He is unable to move his eyes laterally. There is decreased strength in both arms.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#41 **Strength of his leg muscles did not decrease with repetitive contractions.**

Basic laboratory work and chest X-Ray were unremarkable.

A head CT scan with contrast was unremarkable.

Lumbar puncture: opening pressure, cell count, glucose and protein were normal.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#41 **Which one of the following is the most likely etiology of his paralytic clinical syndrome?**

A) Tick paralysis

B) Guillain-Barre

C) Organophosphate poisoning

D) Botulism

E) Myasthenia gravis

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#42 **48-year-old asymptomatic man presents with newly diagnosed HIV infection.**

His initial HIV RNA is 280,000 c/ml and CD4 count 65 cells/ul.

Other labs are normal; Genotype is Wild-type virus.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#42 **Hepatitis panel reveals:**

- **HBVsAg neg**
- **HBsAb neg**
- **HBcAb +**
- **HBV DNA neg (<1000)**

4 months ago, he started on DTG + TAF/FTC;

He did well: with HIV RNA <20 and CD4 Count 270 cells/ul.

He has heard about injectable ARV therapy on TV and would like to try such a regimen.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#42 **What would you recommend?**

A) Cabotegravir alone

B) Rilpivirine alone

C) Cabotegravir-rilpivirine

D) Stay on current regimen: this patient should not be given a long-acting regimen with the drugs currently available

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#43 **A 28-year-old man is newly found to have HIV infection. Initial work-up reveals he's asymptomatic with a normal physical exam.**

Labs demonstrate:

- **Normal CBC, electrolytes, and LFTs**
- **HIV RNA 23,000**
- **CD4 count 379 cells/uL**
- **Genotype: reverse transcriptase (RT) M184V**

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#43 **He prefers a one-pill, once-daily oral regimen. Which regimen do you recommend starting?**

A) Abacavir/lamivudine/dolutegravir

B) Tenofovir AF/emtricitabine/bictegravir

C) Tenofovir AF/emtricitabine/darunavir/ritonavir

D) Tenofovir AF/emtricitabine/elvitegravir/cobicistat

E) Tenofovir DF/lamivudine/efavirenz

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#44 **A 37-year-old man with a history of intravenous drug use and HIV infection appeared in the emergency room with fever and pulmonary infiltrates.**

He is diagnosed with tuberculosis by sputum smear microscopy and started on conventional 4 drug antituberculosis therapy.

Two weeks later, he was started by another physician on abacavir-lamivudine- and double-dose dolutegravir.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#44 **His CD4 was 60 cells/μL, and his viral load was 100,000 copies/μL at the time ART was started.**

Eight weeks after starting ART (10 weeks after starting anti-TB therapy), he returns with new fever.

Chest X-ray shows more extensive infiltrates, a new pleural effusion, and new mediastinal adenopathy.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#44 **The sputum specimens are negative for AFB. Bronchoscopy shows no pneumocystis, fungus, or bacteria on direct smear, but the GeneXpert MTB/RIF remains positive for TB (rifampin resistance not detected).**

The original culture has now been reported as positive for *M. tuberculosis*; phenotypic susceptibility testing results are pending.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#44 **This worsening clinical syndrome most likely represents:**

A) Drug-resistant tuberculosis

B) Abacavir hypersensitivity syndrome

C) BAL negative pneumocystis pneumonia

D) Immune reconstitution syndrome

E) A drug interaction between INH and abacavir

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#45 **47-year-old woman started BIC/FTC/TAF 12 months ago as her first regimen (Bictegravir, emtricitabine, Tenofovir disoproxil fumarate).**

Initial: HIV RNA 28,000 c/ml (Wild-type virus).

CD4 count 450 cells/ul.

Current: HIV RNA <20 c/mL / CD4+ count 930 /uL.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#45 **Since starting her current regimen her weight has increased from 145 lbs to 171 lbs.**

Fasting glucose 101 mg/dl. HbA1c 5.9.

Diet and exercise have not been effective.

She is bothered by the weight gain and wants something done to reduce her weight.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#45 **In addition to diet and exercise, you recommend:**

A) No other interventions at this time

B) Changing ARV to non-TAF, non-InSTI regimen

C) Start Metformin 500 mg twice daily

D) Start Semaglutide, ramp up dose to 1.0 mg SQ weekly

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#46 **A 40-year-old man with no significant past medical history presents in December with complaints of fever, headache, and stiff neck.**

His symptoms started 10 days ago and has not responded to analgesic therapy – in fact, his headache has worsened over the last several days.

He lives alone in a mobile home and has recently seen a number of mice and rats in his home, but he denies any bites from these rodents.

He takes no medications and has received all of his vaccinations.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#46 **On examination, his temperature is 101°F. He is awake, alert, and oriented. He has meningismus and shotty cervical adenopathy.**

Genital examination reveals some pain on palpation of his left testes. Abdominal examination is normal.

Laboratory studies reveal a WBC count of 3,000/mm^3 and his platelet count is 80,000/mm^3. Lumbar puncture shows an opening pressure of 210 mm H_2O, WBC count of 200/mm^3 (95% lymphocytes), glucose of 45 mg/dL, and protein of 250 mg/dL.

CSF Gram stain is negative.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#46 **Which of the following is the most likely cause of this patient's meningitis?**

A) Mumps virus

B) Measles virus

C) Lymphocytic choriomeningitis virus

D) Leptospira interrogans

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#47 **A 25-year-old man without HIV infection was receiving every other month injections of cabotegravir for HIV pre-exposure prophylaxis (PrEP).**

He missed 2 consecutive injections due to work travels and was evaluated showing HIV antigen/antibody test +, HIV-1 immunoblot +, HIV RNA 120,000, and HIV genotype is pending.

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BR4 –Board Review: Day 4

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#47 **What do you recommend?**

A) Restart cabotegravir PrEP

B) Change to tenofovir DF/emtricitabine PrEP

C) Start tenofovir AF/emtricitabine/bictegravir

D) Start tenofovir AF/emtricitabine + darunavir/ritonavir

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#48 **A 50-year-old man with untreated HCV presented with a 6-week history of ulcerating skin lesions.**

He relates a history of injection drug use of both cocaine and fentanyl over this time period.

On physical exam, he is afebrile.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#48 **Skin exam reveals multiple small, painful ulcerations on his chest, neck, arms, and legs, most but not all of which are adjacent to areas where he has injected various street drugs.**

There is no purulence, odor, or surrounding erythema.

Punch biopsy showed nonspecific inflammation and subcutaneous necrosis, without vasculopathy.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#48 **What is the most likely cause of these ulcers?**

A) Pyoderma gangrenosum

B) Polyarteritis nodosum

C) Xylazine

D) Porphyria cutanea tarda

E) Cryoglobulinemia

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#49 **A 71-year-old man with HIV transfers care to you with a history of taking and failing "nearly all HIV medications including T20 (enfuvirtide)."**

He currently takes tenofovir alafenamide (TAF)/emtricitabine (FTC) + etravirine + darunavir + ritonavir with a CD4 15 and HIV RNA 233,140 copies/ml.

You send an HIV genotype, phenotype, and tropism test. The tropism test returns "dual/mixed virus."

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#49 **In addition to optimizing his antiretroviral regimen, you recommend:**

A) Adding maraviroc

B) Adding double dose maraviroc

C) Adding enfuvirtide

D) Adding fostemsavir

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BOARD REVIEW DAY 4 — INFECTIOUS DISEASE BOARD REVIEW 2024

#50 A 35-year-old sexually active heterosexual man wants to reduce his risk of HIV and asks about taking HIV pre-exposure prophylaxis (PrEP) "only when needed."

Which do you recommend?

A) None, PrEP not recommended

B) Daily tenofovir disoproxil fumarate (TDF)/emtricitabine

C) TDF/emtricitabine "on demand" (2 pills 24 hours before sex, then one 24 hours later and one 48 hours later)

D) TAF/emtricitabine "on demand"

E) Cabotegravir "on demand"

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BOARD REVIEW DAY 4 — INFECTIOUS DISEASE BOARD REVIEW 2024

#51 A 44-year-old man was diagnosed with Pneumocystis pneumonia as his AIDS-defining illness and begun on antiretroviral therapy with 2 nucleosides and an integrase inhibitor during his hospitalization.

He stabilizes and follows up for repeated outpatient visits with an HIV RNA consistently <20 copies/ml and a CD4 cell count of 44 that increased to 163 (at 3 months), 232 (at 6 months), 242 (at 9 months), and was repeated at 243 (at 12 months).

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BOARD REVIEW DAY 4 — INFECTIOUS DISEASE BOARD REVIEW 2024

#51 His current medications are: tenofovir alafenamide/emtricitabine, dolutegravir, trimethoprim-sulfa double strength daily, and azithromycin 1200 mg once weekly.

He says he's tired of taking pills and would like to stop some of them.

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BOARD REVIEW DAY 4 — INFECTIOUS DISEASE BOARD REVIEW 2024

#51 What do you recommend?

A) Stop tenofovir alafenamide/emtricitabine

B) Stop trimethoprim-sulfa

C) Stop azithromycin

D) Stop trimethoprim-sulfa and azithromycin

E) Continue the current regimen

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BOARD REVIEW DAY 4 — INFECTIOUS DISEASE BOARD REVIEW 2024

#52 A 30-year-old woman is admitted to the hospital with seizures and hallucinations.

Two weeks prior to this admission, she was hospitalized with fever, confusion, and headaches.

A CSF analysis at that time showed 160 WBCs/mm^3 with 89% lymphocytes and HSV-1 PCR was positive.

MRI showed a T2-weighted lesion in the right temporal lobe.

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BOARD REVIEW DAY 4 — INFECTIOUS DISEASE BOARD REVIEW 2024

#52 She was diagnosed with herpes simplex encephalitis (HSE) and was discharged to a skilled nursing facility to complete a 3-week course of intravenous acyclovir (10 mg/kg every 8 hours).

She initially did well, with resolution of fever and normalization of mentation.

On the day prior to re-admission, she was noted to be paranoid (believed the nurses were poisoning her) and on the day of admission had a generalized seizure.

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BR4 –Board Review: Day 4

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#52 **On exam, she is afebrile, and her neck is supple.**

Choreoathetoid movements of both hands are noted.

She is oriented only to person.

Routine laboratory testing including chemistry panel and CBC are within normal limits.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#52 **MRI showed slight improvement in the right temporal lobe with no new lesions, Lumbar puncture is performed with 27 WBC/mm^3, 66% lymphocytes.**

CSF protein and glucose are normal. PCR for HSV was negative.

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BOARD REVIEW DAY 4 INFECTIOUS DISEASE BOARD REVIEW 2024

#52 **Which of the following is the most likely diagnosis?**

A) Acyclovir neurotoxicity

B) Anti-N-methyl-D-aspartate receptor (NMDAR) encephalitis

C) Acute disseminated encephalomyelitis (ADEM)

D) Relapsed HSV encephalitis

E) CNS vasculitis

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