**Yale Primary Care HIV Training Track**

**Module 3: Initiation of Antiretroviral Therapy (ART)**

**Resident Version**

*Edited 7/16/2019*

**Sources:**

1. “Antiretroviral Therapy Overview.” *National HIV Curriculum*, [www.hiv.uw.edu/go/antiretroviral-therapy](http://www.hiv.uw.edu/go/antiretroviral-therapy). Accessed 7/16/19.
2. “Initiation of Antiretroviral Therapy Adult and Adolescent ARV.” *National Institutes of Health*, U.S. Department of Health and Human Services, 17 Oct. 2017, [https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv/10/initiation-of-antiretroviral-therapy. Accessed 7/16/19](https://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv/10/initiation-of-antiretroviral-therapy.%20Accessed%207/16/19).
3. Zash, Rebecca, et al. “Neural-Tube Defects with Dolutegravir Treatment from the Time of Conception.” *New England Journal of Medicine*, vol. 379, no. 10, 2018, pp. 979–981., doi:10.1056/nejmc1807653

**Educational Objectives:**

1. Understand when to initiate ART in a patient diagnosed with HIV
2. Understand goals of treatment with ART
3. Describe the major available classes of ART agents
4. Discuss guideline-recommended ART regimens for most patients
5. Discuss guideline-recommended ART regimens for women of child-bearing potential
6. Discuss twelve factors to consider when selecting initial ART regimen

**Question 1.** When should ART be initiated in a patient with HIV?

**Question 2.** What are the goals of treatment with ART?

**Question 3.** What are the classes of ART agents, and what are their mechanisms of action?

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| --- | --- | --- |
| **Classes** | **Mechanism of Action** | **Specific Agents** |
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**Question 4.** Broadly speaking, what classes of ART agents typically comprise an initial ART regimen for a treatment naïve individual with HIV?

1. **Backbone**
2. **Anchor**

**Question 5.** Which ART regimens are recommended for most treatment naïve patients?

1.

2.

3.

4

All the above regiments:

**Question 6.** How should we approach ART selection in women of child-bearing potential?

First, we should avoid this drug: \_\_\_\_\_\_\_\_\_\_\_\_ in the following three groups of patients:

* Women \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Women \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Women \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Next, we should select an appropriate ART regimen for the women who fall into the above three groups. We should select an ART regimen whose anchor drugs fall into the following two classes:

**Question 7.** What patient and drug related factors should you think about when selecting an ART regimen?

Twelve Things to Think About When Selecting Initial Anti-Retroviral Therapy

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| --- | --- | --- |
|  | **Item** | **Notes** |
| 1 |  |  |
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**Review Questions:**

1. Name 4 commonly used NRTIs.
2. Name 4 commonly used NNRTIs.
3. Name 2 commonly used PIs.
4. Name 4 INSTIs.
5. Name the backbone medication class(es) and anchor medication class(es) comprising a standard HIV ART regimen.
6. Name 3 instances in which a certain class of ART should *not* be used in women of child-bearing potential.
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. \_\_\_\_\_\_\_\_\_\_\_\_\_
      1. What class of ART should not be used?
7. Name the backbone medication class(es) and anchor medication class(es) recommended for use in most treatment naïve individuals with HIV
8. Name the backbone medication class(es) and anchor medication class(es) recommended for use in women who are pregnant, or who may become pregnant.
9. Which medications are associated with nephrotoxicity?
   1. What are the GFR cutoffs at which we can no longer prescribe these medications?
   2. How should we monitor for the development of nephrotoxicity in these patients?
10. Which medication is associated with decreased bone mineral density?
    1. In which patients should we avoid this medication?
11. Which medication is associated with hypersensitivity reaction?
12. What is the name of the allele associated with increased risk of hypersensitivity reaction?
13. Which medication *may* be associated with increased risk of cardiovascular disease?
14. In which patients should we avoid this medication?
15. Which medications are known to have high barriers to development of resistance mutations?
16. Which medication does the resistance mutation K103N wipe out?
17. Which medications do the resistance mutation M184V wipe out?
18. Which medication’s effect is enhanced by M184V mutation?
19. Which medications are associated with worsening of psychiatric symptoms?
20. True or false: the 4 ART regimens recommended by the Department of Health and Human Services for most treatment naïve individuals living with HIV are dosed once daily.
21. True or false: the 4 ART regimens recommended by the Department of Health and Human Services for most treatment naïve individuals living with HIV are safe in women planning to conceive.
22. True or false: the 4 ART regimens recommended by the Department of Health and Human Services for most treatment naïve individuals living with HIV can be taken with or without food.
23. True or false: the 4 ART regimens recommended by the Department of Health and Human Services for most treatment naïve individuals living with HIV can be started regardless of pre-treatment CD4 count and viral load.