Evidence has shown that antiretroviral therapy (ART) for treatment of human immunodeficiency virus (HIV) infection is effective in preventing transmission among couples. Additionally, newer ART medications have greater effectiveness and tolerability and lower toxicity, making treatment for longer timeframes more easily achievable. ART can even be effective in persons with HIV infection for whom treatment previously failed or in those with resistance to medications. The International Antiviral Society—USA Panel has provided recommendations for management of HIV infection with ART.

**Recommendations**

**INITIATION**

To prevent transmission, persons with HIV infection should be treated with ART, despite CD4 cell count; however, the strength of this recommendation is greater the lower a patient’s CD4 cell count (e.g., 500 per μL or less). Regardless of whether patients with acute HIV infection have symptoms, they should be offered ART.

For persons with HIV infection with CD4 cell counts greater than 500 per μL, the strength of recommendation for treatment with ART increases in those with certain conditions, including nephropathy and chronic hepatitis B virus infection, and in women who are pregnant. In persons with opportunistic infections or diseases, and in those with AIDS-defining illnesses, ART should be started as soon as feasible after diagnosis (within two weeks if possible). In persons with cryptococcal meningitis, ART should be considered early when there is access to experts in treating both the cryptococcal and HIV infections. In persons infected with HIV and tuberculosis, ART should be initiated within two weeks of tuberculosis treatment when the CD4 count is less than 50 per μL. In those with tuberculosis and a CD4 cell count of 50 per μL or greater, ART should initiated within eight to 12 weeks. If a patient has tuberculous meningitis, ART should be initiated within two to eight weeks, and experts should be consulted to assist with treatment.

**MODIFICATION: PATIENTS WHO ARE TREATMENT EXPERIENCED**

When opting to change a person’s ART regimen, previous exposure to therapy, resistance history, and medication interactions should be taken into account, as should a history of toxic effects or not being able to tolerate therapy. If a patient has a known resistance to multiple medications, physicians should consider using a boosted protease inhibitor and medications from newer classes (e.g., integrase strand transfer inhibitor, maraviroc [Selzentry]); however, the patient’s resistance history, viral tropism, and all available therapy options should be taken into account when doing so. Patients should not be prescribed a regimen consisting solely of a boosted protease inhibitor, unless there are no other alternatives. When modifying a patient’s therapy plan, maintaining virologic suppression is essential, and changing or simplifying ART in persons with virologic suppression is typically safe as long as previous treatments and a patient’s resistance history are taken into account. Additionally, when changing a patient’s ART from a ritonavir (Norvir)-boosted protease inhibitor to a medication with low resistance thresholds (e.g., nonnucleoside reverse transcriptase inhibitors, protease inhibitors that are unboosted), the activity of the nucleoside reverse transcriptase inhibitors must be ensured.
Although it may provide some benefit in certain patient populations, routine therapeutic drug monitoring is not recommended when caring for patients with HIV infection who are being treated with ART; however, monitoring for toxicity using laboratory testing is recommended. A patient’s comorbidities and the ART regimen prescribed should be used to determine when and how often monitoring should occur in those patients who have received at least 16 weeks of treatment and who do not have any abnormal results; this monitoring should typically occur every three to six months.

After starting or modifying a patient’s ART, HIV-1 RNA should be measured after four weeks. It should then be measured every three months to ensure that viremia is sufficiently suppressed. To guide plans for starting or stopping prophylaxis for opportunistic infection, a patient’s CD4 cell count should be checked every three months, if not more often, after ART is started; this is particularly important in those with CD4 cell counts less than 200 per μL. In patients who are known to adhere to their ART regimen and who have established CD4 cell count that remains at 350 per μL or higher and a suppressed HIV-1 RNA for one year, viral load and CD4 cell count only need to be evaluated every six months or less. Unless a patient has an immunosuppressive illness (for which the patient may or may not be receiving treatment) or there is virologic failure, CD4 cell counts do not have to be checked, unless desired, in those patients whose CD4 cell counts are consistently greater than 500 per μL and whose HIV-1 RNA has been suppressed for longer than two years.

Before making any conclusions about management in patients taking ART, physicians should ensure that each patient has an HIV-1 RNA level greater than 50 copies per mL on another sample taken within four weeks. If a patient’s HIV-1 RNA level is greater than 200 copies per mL, physicians should determine what may have led to treatment failure and if switching the patient’s regimen would help. Evaluating a patient’s resistance to treatment using genotyping should occur in all patients who are treatment naive or for whom therapy has failed.

Guideline source: International Antiviral Society—USA Panel

Evidence rating system used? Yes

Literature search described? Yes

Guideline developed by participants without relevant financial ties to industry? No

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