Human Immunodeficiency Virus Drug Resistance: 2018 Recommendations of the International Antiviral Society–USA Panel

**Highlights**

- Resistance testing remains a cornerstone of antiretroviral therapy (ART).
- Resistance testing in drug-naive individuals is recommended at the time of diagnosis to detect potential transmitted drug resistance (TDR).
- TDR and pretreatment drug resistance should be monitored on a country level, accounting for different transmission groups.
- Drug resistance testing to detect minority variants is not currently recommended outside of research settings, but may be considered for nonnucleoside reverse transcriptase inhibitors (NNRTIs).
- HIV-1 subtype need not be a consideration regarding HIV drug resistance in selecting ART regimens with nucleoside reverse transcriptase inhibitors (nRTIs), NNRTIs, protease inhibitors (PIs), and integrase strand transfer inhibitors (INSTIs).
- The recommended compartment for drug resistance testing is plasma dot Inclusion of the protease and first half of the reverse transcriptase (up to at least nucleotide 215) is recommended for all genotypic testing.
- Routine INSTI resistance testing in drug-naive individuals is currently not recommended.
- Baseline INSTI resistance testing is recommended in select patients with evidence of TDR, such as those with nRTI- or multi-class resistance.
- Monitoring of TDR and pretreatment drug resistance to INSTIs in selected sites in resource-rich settings and low- and middle-income countries is recommended.
- Drug resistance testing is recommended in patients who are not responding adequately to a new antiretroviral treatment, or in whom a previously successful treatment is failing.
- The major question to be answered for the future will be whether TDR of INSTI resistance will remain as low as it has been up to now, or whether it will increase in the future as it has for all previously introduced drug classes. This will need very close monitoring, in all areas, but particularly in sub-Saharan Africa, where dolutegravir-containing regimes are now being rolled out extensively.

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- Compiled by a volunteer panel of international experts in HIV drug resistance research and antiviral therapy
- Authors: Huldrych F Günthard, MD; Vincent Calvez, MD, PhD; Roger Paredes, MD, PhD; Deenan Pillay, MD, PhD; Robert W Shafer, MD; Annemarie M Wensing, MD, PhD; Donna M Jacobsen, BS; Douglas D Richman, MD
- For clinicians providing care for patients with HIV infection, public health officials, drug resistance testing laboratories, and epidemiologists working in HIV-drug resistance
- Update 2008 recommendations (Hirsch et al, *Clinical Infectious Diseases, 2008*) and summarize new developments in drug resistance testing and put them into an evidence based context to optimize antiretroviral treatment and care for individuals living with HIV infection

Antiretroviral Drugs for Treatment and Prevention of HIV Infection in Adults

2018 Recommendations of the International Antiviral Society–USA Panel

**Highlights**

- Antiretroviral therapy (ART) remains the foundation of prevention and management of HIV infection.
- Continued advances in the development of antiretroviral drugs for HIV infection prevention and treatment are necessary and are contributing to improved clinical management and outcomes for individuals at risk for or living with HIV infection.
- Initial regimens focused primarily on unboosted integrase strand transfer inhibitor (INSTI)-containing regimens.
- Encourage rapid initiation of ART, including same-day initiation, if feasible.
- Routine use of *Mycobacterium avium* complex primary prophylaxis is no longer recommended for those with advanced disease on effective ART.
- Discontinue routine CD4+ counts once a patient has sustained undetectable HIV RNA for a year and has a CD4+ count above 250 cells/μL.
- Alternatives for preexposure prophylaxis for those who are uninfected with HIV but remain at risk for infection now include an episode-based “2-1-1” approach, where at-risk individuals can take 2 ART pills prior to exposure followed by 1 pill once daily for 2 days after exposure (2-1-1).

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- Developed by a volunteer panel of international experts in HIV research and patient care
- Authors: Michael S. Saag, MD; Constance A. Benson, MD; Rajesh T. Gandhi, MD; Jennifer F. Hoy, MBBS; Raphael J. Landovitz, MD; Michael J. Mugavero, MD, MHS; Paul E. Sax, MD; Davey M. Smith, MD; Melanie A. Thompson, MD; Susan P. Buchbinder, MD; Carlos del Rio, MD; Joseph J. Eron Jr, MD; Gerd Fätkenheuer, MD; Huldrych F. Günthard, MD; Jean-Michel Molina, MD; Donna M. Jacobsen, BS; Paul A. Volberding, MD
- All updated recommendations focus on adults 18 years or older with or at risk for HIV infection with availability to most antiretroviral drugs
- For physicians providing medical care for individuals with or at risk for HIV infection, public health officials, and HIV researchers
- Update 2016 recommendations (Günthard et al, *JAMA, 2016*) of ART as the primary means for HIV treatment and prevention