TABLE 101-4 PREFERRED AND ALTERNATIVE REGIMENS FOR FIRST-LINE ANTIRETROVIRAL THERAPY ACCORDING TO DHHS GUIDELINES

PILL BURDEN	COMBINATION*	LIMITATIONS†
PREFERRED REGIMENS		
Single pill	Atripla (tenofovir, emtricitabine, efavirenz)	CrCl >50, teratogenicity
2 pills once daily	Truvada (tenofovir, emtricitabine) + dolutegravir	CrCl >50
3 pills once daily	Truvada (tenofovir, emtricitabine) + atazanavir + ritonavir	CrCl >50, cirrhosis Child Pugh class A
3 pills once daily	Truvada (tenofovir, emtricitabine) + darunavir + ritonavir	CrCl >50, cirrhosis Child Pugh class A
BID regimen: 1 pill daily, 1 pill twice daily	Truvada (tenofovir, emtricitabine) + raltegravir	CrCl >50
ALTERNATIVE REGIMENS		
Single pill	Complera (tenofovir, emtricitabine, rilpivirine)	CrCl >50,† PPI contraindicated
Single pill	Stribild (tenofovir, emtricitabine, elvitegravir, cobicistat)	CrCl >70,† cirrhosis Child Pugh class A
Single pill	Triumeq (abacavir lamivudine dolutegravir)	HLAB5701 negative, CrCl >50
3 pills once daily	Epzicom (abacavir, lamivudine) + atazanavir + ritonavir	HLA-B5701 negative,‡ CrCl >50,† cirrhosis Child Pugh score <5
3 pills once daily	Epzicom (abacavir, lamivudine) + rilpivirine	HLA-B5701 negative, CrCl >50,† PPI contraindicated, cirrhosis Child Pugh score <5
BID regimen: 1 pill daily, 1 pill twice daily	Truvada (tenofovir, emtricitabine) OR Epzicom (abacavir, lamivudine) + etravirine	CrCl >50,† HLA-B5701 negative (abacavir), cirrhosis Child Pugh score <5 (abacavir)
4 pills once daily	Truvada (tenofovir, emtricitabine) OR Epzicom (abacavir, lamivudine) + fosamprenavir + ritonavir	CrCl >50,† HLA-B5701 negative (abacavir), cirrhosis Child Pugh score <5 (abacavir)
5 pills once daily	Truvada (tenofovir, emtricitabine) OR Epzicom (abacavir, lamivudine) + lopinavir/ritonavir	CrCl >50,† HLA-B5701 negative (abacavir), cirrhosis Child Pugh score <5 (abacavir)

CrCl, Creatinine clearance (measured in mL/min/17.3 m^2); DHHS, U.S. Department of Health and Human Services; HLA, human leukocyte antigen; PPI, proton pump inhibitors.

*New antiretroviral medications as well as new formulations of medications are approved frequently. For the most up-to-date listing of preferred and alternative regimens, refer to the DHHS Guidelines for the Use of Antiretroviral Medications (see Recommended Readings).

†Tenofovir, lamivudine, and emtricitabine all require dose adjustment when the CrCl drops to <50, preventing the use of fixed-dose combinations.

‡HLA-B5701 is a genetic marker indicating risk for a hypersensitivity reaction to abacavir. Screening is indicated before the medication is started, and abacavir should not be used if the marker is present.

As persons with HIV live longer on ART, more typical diseases associated with aging become the focus of care. It can be challenging to distinguish what additive effects HIV may have to the risks associated with these conditions, particularly if comorbid substance use, smoking, and other risk factors are highly prevalent. As HIV is controlled with treatment, recognizing these risks and focusing on providing the best quality primary care will be critical to helping ensure that patients with HIV live full and healthy lives.

Baseline Resistance Testing and Development of Drug Resistance

Inconsistent intake of ART can lead to the development of HIV strains resistant to antiviral medications. At least 16% of new infections (one in six) contain mutations affecting susceptibility to one or more antiretroviral medications. For this reason, measurement of baseline resistance is recommended before ART is initiated. Close monitoring of persons with inconsistent adherence is critical. Some resistance mutations, particularly M184V, which confers resistance to lamivudine and emtricitabine, have been observed to develop with as little as a few weeks of inconsistent treatment.

When to Change Therapy

When an effective antiretroviral regimen is initiated in an asymptomatic patient with no previous ART, the PVL should decrease sharply, usually by 10-fold in 4 weeks and to an undetectable level (<50 copies/mL) within 16 to 24 weeks. If reduction of this magnitude is not achieved, the physician should assess with the patient whether adherence has been adequate. If adherence has been nearly complete (>95%), the physician and patient should consider retesting for resistance mutations and changing to another effective regimen. Minority viral subpopulations carrying resistance mutations can rapidly overtake the sensitive virus once the selective pressure exerted by the medications. These subpopulations may become detectable only while on treatment.

If a given regimen achieves a reduction of PVL below detectable limits and continuing adherence is achieved, the patient can anticipate effective viral suppression for many years and perhaps indefinitely. Small elevations in PVL on a single determination are usually not significant. One may consult the International AIDS Society—USA resistance guidelines, which are regularly updated (www.iasusa.org/guidelines/index.html). If an antiretroviral drug must be stopped for any reason, it is important to stop temporarily all antiretroviral drugs. Alternatively, a completely new effective regimen may be initiated to sustain complete virologic suppression.

Prophylaxis against Opportunistic Infections

During the first 15 years of the HIV pandemic, the most effective medical interventions for HIV infection were prophylactic measures against OIs. The greatest success was in preventing PCP in individuals with CD4 counts lower than 200 cells/mm^3; routine use of prophylaxis resulted in a greater than fourfold decrease (from 60% to <15%) in the frequency of PCP as the initial OI in North American men with HIV infection.

Specific antimicrobial prophylaxis (Table 101-5) is also effective for prevention of *T. gondii* encephalitis in patients with anti-*Toxoplasma* antibodies and CD4 counts lower than 100 cells/mm^3 and for prevention of active tuberculosis in patients with positive tuberculin skin test results at any CD4 level. Prophylaxis against disseminated MAI infection is recommended at lower CD4 counts (<50 cells/mm^3). Prophylaxis against CMV retinitis