viral proteins through Western blot assays. These techniques are highly sensitive in detecting HIV antibody, but individuals who have been infected recently may be antibody negative. During a window period, typically 1 to 2 weeks, infected persons have detectable HIV RNA and core p24 antigen in their plasma. If the initial enzyme-linked immunosorbent assay (ELISA) result is negative in a person recently exposed to HIV, repeat ELISA at 6 weeks and 3 months are indicated. In a person who is at high risk for HIV exposure, an indeterminate Western blot reaction pattern often represents early seroconversion; in such cases, a positive plasma HIV RNA concentration (i.e., >10,000 copies/mL) indicates acute HIV infection.

Rapid point-of-care testing methods play an important role in HIV testing in many clinical and community settings. These rapid test kits can provide results within 30 minutes, but they require confirmation by antibody-based tests. Fourth-generation assays for HIV have recently been developed; they combine tests for antibodies and viral proteins in a single assay.

TREATMENT

Initial Counseling and Ambulatory Evaluation

Once HIV infection is recognized, the physician should discuss, in an unhurried manner, the clinical course and treatment of HIV infection and the use of immunologic and virologic studies (e.g., CD4 counts, PVL assays) to guide therapy. The physician should then emphasize that, with effective currently available ART, HIV disease progression can be prevented indefinitely. Stigma related to HIV remains an important concern and a key barrier to engagement in care. Addressing this as part of post-test counseling and intake to care is key to retention in care for persons newly diagnosed.

Prevention of further transmission through unprotected sex or sharing of needles must be discussed at the first visit and periodically thereafter. It is important to emphasize that these high-risk activities place not only the other person but also the patient at risk because they may lead to transmission of new and potentially drug-resistant HIV strains to the patient.

The initial evaluation should include both an HIV-oriented review of systems and a complete physical examination. In particular, the skin must be examined for HIV-associated rashes and Kaposi's sarcoma. Examination of the oral cavity may reveal thrush, gingivitis, hairy leukoplakia, superficial ulcers caused by HSV, aphthous ulcers, or lesions characteristic of Kaposi's sarcoma. In persons with very advanced disease, the optic fundi may have hemorrhagic lesions characteristic of CMV retinitis. Lymph node enlargement, hepatomegaly, splenomegaly, and any genital lesions should all be carefully noted. Neurologic examination for both peripheral neuropathy and decreased global cognition deserves close attention.

Laboratory Monitoring

The CD4 count and the PVL should be measured at the first visit, and the patient should be shown the results. Graphic illustrations of the interaction between PVL and CD4 can be useful to increase patient understanding. HIV genotyping to assess for drug resistance should also be performed (see later discussion).

The PVL is a key measure of treatment adherence and is repeated at intervals, initially every 3 to 4 months. For patients with suppressed virus who are stable on ART, current guidelines allow for PVL monitoring at 6-month intervals. For those who are not taking or have only recently started ART and have a CD4 count lower than 200 cells/mm^3, CD4 monitoring is typically repeated every 3 to 4 months along with the PVL monitoring. Once a patient is stable on treatment, with suppressed virus (<200 copies) and CD4 counts higher than 200 cells/mL, the value of CD4 monitoring is less clear, and guidelines allow for extending the monitoring interval to yearly.

Screening for Associated Infections

Tuberculosis

Purified protein derivative (PPD) testing should be performed early in the course of HIV infection. Induration of 5 mm or more should be considered positive. Any patient with a positive PPD test result should be evaluated for the presence of active tuberculosis; if no active disease is present, the patient should receive 9 months of prophylaxis with isoniazid or combination drug therapy for a shorter period (see Chapter 92). If active tuberculosis is identified, multidrug therapy should be initiated after careful consideration of possible interactions with antiretroviral medications.

Sexually Transmitted Diseases

Serologic testing for syphilis should be followed by prompt treatment if the patient is confirmed to be positive. Syphilis infections are common within many populations highly impacted by HIV, and co-infection with syphilis increases the risk of transmission of HIV to others. Regular screening is recommended.

Hepatitis

Liver disease is an important cause of morbidity and mortality for persons with HIV. Screening for hepatitis A, B, and C at baseline is recommended, and those not immune to hepatitis A or B should receive immunization. Hepatitis C is highly prevalent among persons who acquired HIV from injection drug use, and increasing numbers of cases of sexual transmission of hepatitis C among MSM with HIV are being described. Given the lack of an effective vaccine for hepatitis C, regular screening is recommended for persons with ongoing risk of exposure.

Other Infections

Screening for antibodies to *Toxoplasma gondii* should be considered for persons with low CD4 counts who are potentially in need of prophylaxis. Persons from endemic areas may be screened for histoplasmosis and coccidiomycosis and considered for prophylaxis if positive.

Immunization

Antibody responses to polysaccharides are better among patients with higher CD4 counts. The optimal timing of immunization is uncertain. For persons with low CD4 counts, most physicians provide initial immunization and reimmunization for certain vaccines after immune reconstitution occurs. Live vaccines should be avoided in persons with CD4 counts lower than 200 cells/mm^3.