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A look at new guidelines for HIV treatment and prevention

Start antiretroviral therapy as soon as possible after HIV infection is confirmed. Consider daily PrEP for patients at risk from sexual exposure or who inject illicit drugs.

An International Antiviral Society-USA Panel recently published an updated set of recommendations on using antiviral drugs to treat and prevent human immunodeficiency virus (HIV) infection[1]—a rapidly changing and complex topic. This new guideline updates the society's 2016 publication.[2] It contains recommendations on when to start antiretroviral therapy for those who are HIV positive and advice on suitable combinations of antiretroviral drugs. It also details pre- and post-exposure prophylaxis strategies for preventing HIV infection in those at risk.

This Practice Alert highlights the most important recommendations on treating those newly diagnosed as HIV positive and on preventing infection. Physicians who provide care for those who are HIV positive should familiarize themselves with the entire guideline.

Initiating treatment in those newly diagnosed as HIV positive

The panel now recommends starting antiretroviral therapy (ART) as soon as possible after HIV infection is confirmed; immediately if a patient is ready to commit to starting and continuing treatment. Any patient with an opportunistic infection should begin ART within 2 weeks of its diagnosis. Patients being treated for tuberculosis (TB) should begin ART within 2 weeks of starting TB treatment if their CD4 cell count is <50/mcL; those whose count is ≥50/mcL should begin ART within 2 to 8 weeks.

The panel recommends one of 3 ART combinations (**TABLE 1**[1]), all of which contain an integrase strand transfer inhibitor (INSTI). ART started immediately should not include a nonnucleoside reverse transcriptase inhibitor (NNRTI) because of possible viral resistance. The guideline recommends 6 other ART combinations if none of the first 3 options can be used.[1]

An initial set of laboratory tests (**TABLE 2**[1]) should be conducted on each individual receiving ART, although treatment can start before the results are returned. Ongoing laboratory monitoring, described in detail in the guideline, depends on the ART regimen chosen and the patient's response to therapy. The only routinely recommended prophylaxis for opportunistic infections is for *Pneumocystis* pneumonia if the CD4 count is <200/mcL.

Preventing HIV with prEP

Consider prescribing daily pre-exposure prophylaxis (PrEP) with emtricitabine/tenofovir disoproxil fumarate (Truvada) for men and women who are at risk from sexual exposure to HIV or who inject illicit drugs. It takes about 1 week for protective tissue levels to be achieved. Testing to rule out HIV infection is recommended before starting PrEP, as is testing for serum creatinine level, estimated glomerular filtration rate, and hepatitis B surface antigen. Tenofovir disoproxil fumarate is not recommended for those with creatinine clearance of less than 60 mL/min/1.73 m^2. For

TABLE 1

Recommended regimens for initial antiretroviral therapy[1]

• Bictegravir/emtricitabine/tenofovir alafenamide (Biktarvy, Gilead Sciences)
• Abacavir/dolutegravir/lamivudine (Triumeq, GlaxoSmithKline)*
• Dolutegravir (Tivicay, GlaxoSmithKline) plus tenofovir alafenamide/emtricitabine (Descovy, Gilead)

*Do not start abacavir until testing has been conducted for the HLA-B*5701 allele.

HLA, human leukocyte antigen.

TABLE 2

Recommended laboratory testing at the time of HIV diagnosis[1]

• HIV RNA level
• CD4 cell count
• HIV reverse transcriptase and protease genotype
• Sexually transmitted infections (gonorrhea, chlamydia, syphilis)
• Hepatitis A, B, and C
• Tuberculosis
• General health (liver and kidney functions, lipid levels, glucose, complete blood cell count)
• Pregnancy test and cervical cytology (female)
• HLA-B*5701 (before using abacavir)

CD4, cluster of differentiation-4; HIV, human immunodeficiency virus; HLA, human leukocyte antigen; RNA, ribonucleic acid.

patients taking PrEP, emphasize other preventive measures such as using condoms to protect against both HIV and other sexually-transmitted diseases (STDs), using clean needles and syringes when injecting drugs, or entering a drug rehabilitation program. After initiating PrEP, schedule the first follow-up visit for 30 days later to repeat the HIV test and to assess adverse reactions and PrEP adherence.

For men who have sex with men (MSM), there is an alternative form of PrEP when sexual exposure is infrequent. "On-demand" or "event-driven" PrEP involves 4 doses of emtricitabine/tenofovir disoproxil fumarate; 2 doses given with food 2 to 24 hours before sex (the closer to 24 the better), one dose 24 hours after the first and one 24 hours after the second. This is referred to as 2-1-1 dosing. This option has only been tested in MSM with sexual exposure. It is not recommended at this time for others at risk for HIV or for MSM with chronic or active hepatitis B infection.

Preventing HIV infection with post-exposure prophylaxis

Post-exposure prophylaxis (PEP) for HIV infection is divided into 2 categories: occupational PEP (oPEP) and non-occupational PEP (nPEP). Recommendations for oPEP are described elsewhere[3] and are not covered in this Practice Alert. Summarized below are the recommendations for nPEP after sex, injection drug use, and other nonoccupational exposures, which are also described on the Centers for Disease Control and Prevention (CDC) Web site.[4]

Assess the need for nPEP if high-risk exposure (**TABLE 3**[4]) occurred ≤72 hours earlier. Before starting nPEP, perform a rapid HIV blood test. If rapid testing is unavailable, start nPEP, which can be discontinued if the patient is later determined to have HIV infection. Repeat HIV testing at 4 to 6 weeks and 3 months following initiation of nPEP. Approved HIV tests are described on the CDC Web site at http://www.cdc.gov/hiv/testing/laboratorytests.html. Oral HIV tests are not recommended for HIV testing before initiating nPEP.

nPEP is not recommended when an individual's risk of exposure to HIV is not high, or if the exposure occurred more than 72 hours before presentation. An algorithm is available

Consider prescribing daily pre-exposure prophylaxis for men and women at risk from sexual exposure to HIV or who inject illicit drugs.

TABLE 3

Estimated per-act risk for acquiring HIV from an infected source, by exposure act[4]*

Exposure type	Rate for HIV acquisition per 10,000 exposures
Parenteral	
Blood transfusion	9,250
Needle sharing during injection drug use	63
Percutaneous (needlestick)	23
Sexual	
Receptive anal intercourse	138
Receptive penile-vaginal intercourse	8
Insertive anal intercourse	11
Insertive penile-vaginal intercourse	4
Receptive oral intercourse	Low
Insertive oral intercourse	Low
Other†	
Biting	Negligible
Spitting	Negligible
Throwing body fluids (including semen or saliva)	Negligible
Sharing sex toys	Negligible

HIV, human immunodeficiency virus.

*Factors that may increase the risk of HIV transmission include sexually transmitted diseases, acute and late-stage HIV infection, and high viral load. Factors that may decrease the risk include condom use, male circumcision, antiretroviral treatment, and preexposure prophylaxis. None of these factors are accounted for in the estimates presented in the table.

†HIV transmission through these exposure routes is technically possible but unlikely and not well documented.

Offer immediate post-exposure HIV prophylaxis if high-risk non-occupational contact occurred within the last 72 hours and rapid HIV testing is unavailable.

to assist with assessing whether nPEP is recommended (**FIGURE**[4]).

Specific nPEP regimens. For otherwise healthy adults and adolescents, preferred nPEP consists of a 28-day course of a 3-drug combination: tenofovir disoproxil fumarate 300 mg once daily; emtricitabine 200 mg once daily; and raltegravir, 400 mg twice daily, or dolutegravir 50 mg once daily. Alternative regimens for adults and adolescents are described in the guideline, as are options for children, those with decreased renal function, and pregnant women. Those who receive more than one course of nPEP within a 12-month period should consider PrEP.

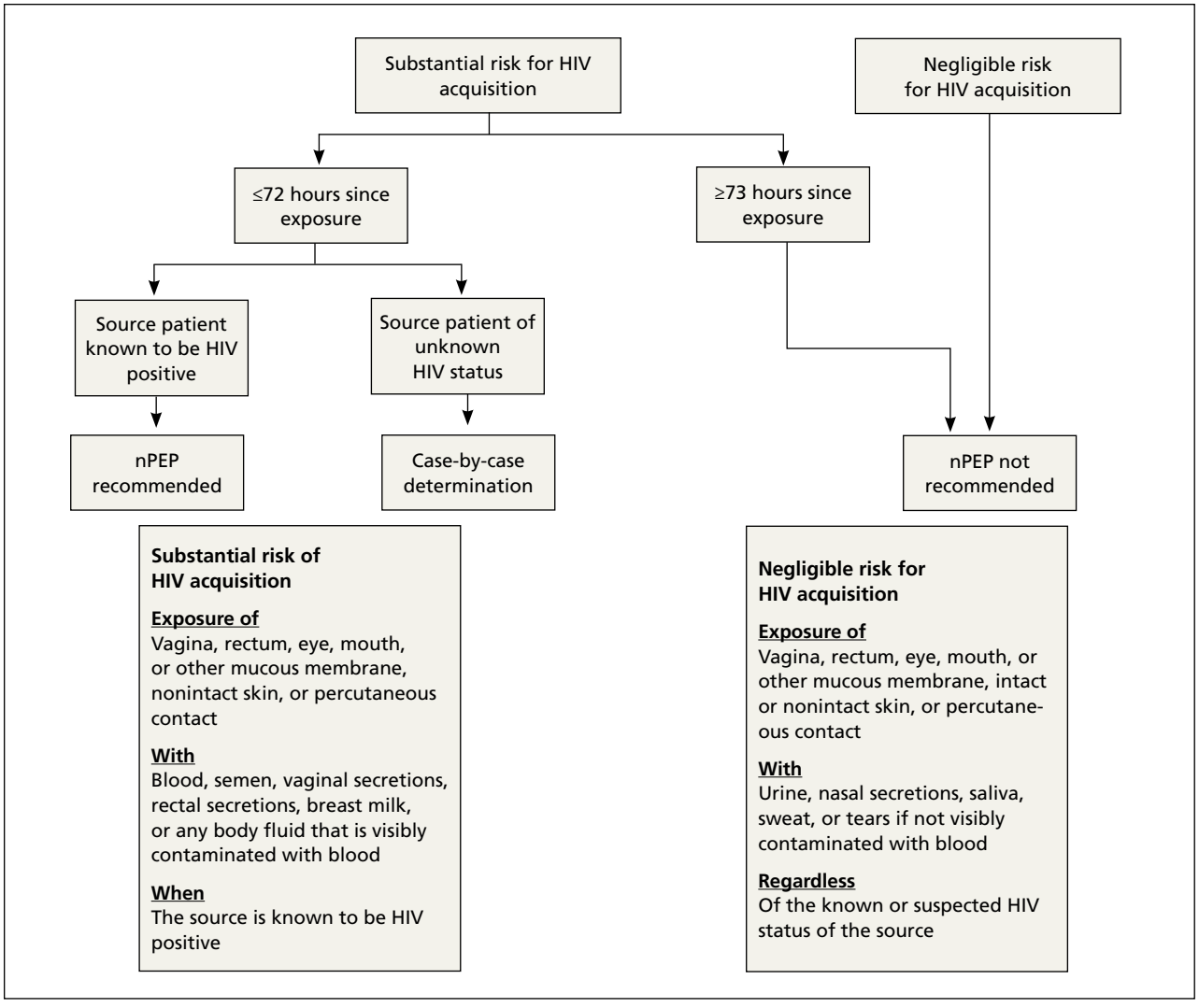
When additional vaccination is needed. For victims of sexual assault, offer prophylaxis against STD (**TABLE 4**[4]) and hepatitis B virus (HBV). Those who have not been vaccinated against HBV should receive the first dose at the initial visit. If the exposure source is known to be HBsAg-positive, give the unvaccinated patient both hepatitis B vaccine and hepatitis B immune globulin at the first visit. The full hepatitis B vaccine series should then be completed according to the recommended schedule and the vaccine product used. Those who have completed hepatitis B vaccination but who were not tested with a post-vaccine titer should receive a single dose of hepatitis B vaccine.

Victims of sexual assault can benefit from referral to professionals with expertise in post-assault counseling. Sexual Assault Nurse Examiner programs are listed at http://www.sane-sart.com.

Financial assistance for patients. Antiretroviral drugs are expensive, and those who need nPEP may not have a payer source. Many pharmaceutical manufacturers offer medication assistance programs, and processes are set up to handle time-sensitive requests. Information for specific medications can be found at http://www.pparx.org/en/prescription_assistance_programs/list_of_participating_

FIGURE

Determining the need for non-occupational HIV post-exposure prophylaxis[4]



HIV, human immunodeficiency virus; nPEP, nonoccupational post-exposure prophylaxis.

programs. Those who are prescribed nPEP after a sexual assault can receive reimbursement for medications and health care costs through state Crime Victim Compensation Programs funded by the Department of Justice. State-specific contact information is available at http://www.nacvcb.org/index.asp?sid=6. JFP

References

1. Saag MS, Benson CA, Gandhi RT, et al. Antiretroviral drugs for treatment and prevention of HIV infection in adults: 2018 recommendations of the International Antiviral Society-USA Panel.

TABLE 4

Recommended prophylaxis against STDs[4]

Gonorrhea Ceftriaxone 250 mg, single dose intramuscularly; and azithromycin 1 g, single dose orally
Chlamydia Azithromycin 1 g, single dose orally; or doxycycline 100 mg, twice a day orally for 7 days
Trichomonas Metronidazole 2 g, single dose orally; or tinidazole 2 g, single dose orally

STDs, sexually transmitted diseases.

CONTINUED

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2. Günthard HF, Saag MS, Benson CA, et al. Antiretroviral drugs for treatment and prevention of HIV infection in adults: 2016 recommendations of the International Antiviral Society-USA Panel. *JAMA*. 2016;316:191-210.
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4. CDC. Updated guidelines for antiretroviral postexposure prophylaxis after sexual, injection drug use, or other nonoccupational exposure to HIV—United States, 2016. https://www-cdc-gov.ezproxy3.library.arizona.edu/hiv/pdf/programresources/cdc-hiv-npep-guidelines.pdf. Accessed October 11, 2018.