
GUIDELINES ON INCORPORATING HIV PREVENTION INTO MEDICAL CARE

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CME Disclosures:
Planning Committee And Speaker

Speaker: The following speaker has nothing to disclose in relation to this activity: John I. McNeil, MD

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CME Disclosures: Planning Committee And Speaker

AETC-Capitol Region Telehealth Project

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TEST YOUR KNOWLEDGE

Test Your Knowledge Question #1

If diagnosis is made by HIV RNA testing, confirm diagnosis with subsequent Ab testing:

- A. TRUE
- B. FALSE



Test Your Knowledge Question #2

ART is not recommended for persons with early HIV infection?

- A. TRUE
- B. FALSE



Test Your Knowledge Question #3

Resistance testing should be done at baseline to guide ARV selection (genotype)?

- A. TRUE
- B. FALSE



Test Your Knowledge Question #4

Combination ART is recommended for all pregnant women who are HIV infected, regardless of CD4 count, HIV viral load, or clinical status?

- A. TRUE
- B. FALSE



Test Your Knowledge Question #5

Select the correct answer from the following. In the early stages of the infection:

- A. 20-70% have symptoms of acute retroviral syndrome but acute HIV is often not recognized
- B. 30-80% have symptoms of acute retroviral syndrome but acute HIV is often not recognized
- C. 40-90% have symptoms of acute retroviral syndrome but acute HIV is often not recognized
- D. 50-100% have symptoms of acute retroviral syndrome but acute HIV is often not recognized



GUIDELINES ON INCORPORATING HIV PREVENTION INTO MEDICAL CARE



LEARNING OBJECTIVES

- Describe the signs and symptoms of early HIV infection
- Discuss the clinical standards for HIV diagnosis and treatment
- Describe the progression of HIV from initial infection to disease
- Define and discuss issues relating to HIV testing
- Describe adherence challenges for adolescents infected with HIV

SPECIAL ISSUES: CONTENTS

- Early HIV Infection
- Adolescents
- Women
- Illicit Drug Users
- HIV-2 Infection
- Hepatitis B or C Coinfection
- *Mycobacterium Tuberculosis*
- Preventing Secondary Transmission

EARLY HIV INFECTION

- Acute HIV infection
 - Initial phase of infection; HIV RNA and p24 Ag are present but anti-HIV antibodies are undetectable
- Recent infection
 - The phase up to six months after infection; anti-HIV antibodies are detectable

EARLY HIV INFECTION: ACUTE RETROVIRAL SYNDROME

- 40-90% have symptoms of acute retroviral syndrome but acute HIV often not recognized
- Maintain high level of suspicion in patients with compatible clinical syndrome plus risks

▪ Fever	▪ Headache
▪ Lymphadenopathy	▪ Nausea and vomiting
▪ Pharyngitis	▪ Hepatosplenomegaly
▪ Rash	▪ Weight loss
▪ Myalgia or arthralgia	▪ Thrush
▪ Diarrhea	▪ Neurological symptoms

www.aidsctc.org

ACUTE HIV INFECTION: DIAGNOSIS

- Usually, detectable HIV RNA or p24 antigen with negative or indeterminate HIV antibody test result
- Combination HIV Ag/Ab tests
 - Detect HIV-1 and HIV-2 and HIV-1 p24 Ag
 - Recommended by CDC as preferred assay for HIV screening, including for possible acute HIV-1
 - Reactive specimens should be tested with assay that differentiates HIV-1 and HIV-2
- If reactive on Ag/Ab test but negative or indeterminate on Ab differentiation test: retest with quantitative or qualitative HIV-1 RNA test
 - If negative on RNA test: Ag/Ab was falsely positive
 - If positive: likely acute HIV-1; consider ART
 - Confirm HIV-1 infection with subsequent testing to document HIV Ab seroconversion

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ACUTE HIV INFECTION: DIAGNOSIS

- If initial testing done with assay that tests only HIV Ab:
 - If Ab is negative or indeterminate but acute HIV is suspected:
 - Check HIV RNA: if positive, presumptive diagnosis is acute HIV-1
 - Low-positive HIV RNA (<10,000 copies/mL) may be false positive – repeat test on different specimen
 - If diagnosis is made by HIV RNA testing, confirm diagnosis with subsequent Ab testing

EARLY HIV INFECTION:TREATMENT

- ART recommended for all persons with HIV, including early HIV infection
- Limited outcome data from clinical trials

EARLY HIV INFECTION:TREATMENT ⁽²⁾

Possible benefits:

- Decrease severity of acute disease
- Lower viral “set point”
- Reduce viral reservoir
- Delay disease progression
- Enhance CD4 cell recovery
- Reduce rate of viral mutation
- Lower risk of HIV transmission
- Lessen loss of GI lymphoid tissue

www.aidsetc.org

EARLY HIV INFECTION: TRANSMITTED RESISTANCE

- Transmitted virus may be resistant to ≥ 1 ARV drugs in up to 16% of patients with acute HIV infection
- Perform resistance testing at baseline to guide ARV selection (genotype)
 - Treatment initiation should not be delayed pending genotype results (regimen can be modified if indicated)

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EARLY HIV INFECTION: TREATMENT REGIMEN

- ARV regimen recommendations and monitoring are same as for chronic infection
- If treatment is begun before resistance test results are available, use boosted PI (transmitted resistance is uncommon, and new resistance emerges slowly)
 - May consider dolutegravir (DTG) + TDF/FTC
 - Data on transmission of integrase resistance and on efficacy of this regimen in acute infection are limited
 - If early infection in person taking TDF/FTC as PrEP, also consider boosted PI or DTG while genotype results are pending

THE HIV-INFECTED ADOLESCENT

- Heterogeneous group in numerous respects
- Most acquired HIV through sexual risk behaviors
 - 26% of new HIV infections in United States are estimated to occur in youth aged 13-26 (2010)
 - 57% of these are in young black/African Americans
 - 75% in young MSM
- In 2010, CDC estimated that 60% of HIV-infected youth were undiagnosed
- Some infected perinatally or via blood products
 - Usually heavily treatment experienced

THE HIV-INFECTED ADOLESCENT (2)

ART Recommended for All

THE HIV-INFECTED ADOLESCENT (2)

- Adult guidelines for ART usually appropriate for postpubertal adolescents
- Dosing should be based on sexual maturity rating (SMR)/Tanner stages
 - Use adult dosing schedules for those in late puberty

THE HIV-INFECTED ADOLESCENT ⁽³⁾

Challenges to adherence:

- Denial and fear of HIV infection
- Misinformation
- Distrust of the medical establishment
- Fear and lack of belief in the effectiveness of medications
- Low self-esteem
- Unstructured and chaotic lifestyles
- Lack of familial and social support
- Unavailable or inconsistent access to care

THE HIV-INFECTED ADOLESCENT ⁽⁴⁾

Special considerations:

- Preventing (and screening for) STDs (including HPV)
- Family planning counseling
- For females, gynecologic care, contraception (including interactions with ARVs); avoid EFV
- For transgender youth, sensitive psychosocial and health supports
- Prevention of HIV transmission

THE HIV-INFECTED ADOLESCENT ⁽⁵⁾

Transitioning care:

- Recognize differences between many adolescent and adult HIV care models
- Consider issues of independence, autonomy, decisional capacity, confidentiality, consent, medical insurance
- Recognize different biomedical and psychosocial needs of perinatally infected vs behaviorally infected youth

THE HIV-INFECTED ADOLESCENT (6)

Facilitators to successful transitioning:

- Optimize communication between adolescent and adult providers, including multidisciplinary case conferences
- Address patient/family resistance (e.g., owing to knowledge deficits, stigma, disclosure, differences in practice styles)
- Prepare youth for life-skills development (e.g., appropriate use of care providers, medication management)
- Identify optimal clinic model
- Evaluate success of care model
- Include interventions that improve outcomes (e.g., support groups and mental health consultation)
- Incorporate a family planning component

HIV-INFECTED WOMEN

- In general, no sex differences in virologic efficacy of ART
- Some evidence of sex differences in metabolism and response to some ARVs
- Increased risk of certain ARV adverse effects:
 - NVP-associated hepatotoxicity (especially if initiated at CD4 count >250 cells/ μ L)
 - Lactic acidosis: avoid d4T + ddI, if possible
 - Metabolic complications (e.g., lipoaccumulation, elevated triglycerides, osteopenia/osteoporosis)

HIV-INFECTED WOMEN ⁽²⁾

- Women of childbearing potential
 - Offer preconception counseling and care
 - Offer effective counseling and contraception to prevent unintended pregnancy
 - For HIV-infected women who wish to conceive: inform as to options for preventing sexual transmission of HIV while attempting conception

HIV-INFECTED WOMEN ⁽³⁾

Efavirenz

- Teratogenic in nonhuman primates
- Risk of neural tube defects occurs during the first five –six weeks of pregnancy, and pregnancy usually is not recognized before four - six weeks of pregnancy
- Do pregnancy test before starting EFV (women of childbearing potential)
- Counsel about potential risk to fetus and desirability of avoiding pregnancy while on EFV
- Use alternative ARV agent in women who are trying to conceive or who are not using effective contraception, if feasible

HIV-INFECTED WOMEN: CONTRACEPTION

- ARV interactions with hormonal contraceptives:
 - Oral agents: PIs and NNRTIs may increase or decrease levels of ethinyl estradiol, norethindrone, and norgestimate, and may cause contraceptive failure or estrogen or progestin adverse effects
 - Consider alternative or additional contraceptive method if used with interacting ARVs
- Few data on transdermal patch, vaginal ring: cautions as above
- DMPA: few data; no significant interactions with EFV, NVP, NFV, NRTIs
- IUD: safe and effective

HIV-INFECTED WOMEN: CONTRACEPTION ⁽²⁾

- Hormonal contraception and HIV infection risk:
 - Conflicting data; in one study of serodiscordant couples, DMPA associated with risk of acquiring HIV (for HIV-uninfected women) and transmitting HIV (for HIV-infected women). No significant association with oral contraceptive use (small numbers). No participants were on ART
 - Other studies have not observed association of hormonal contraception and HIV transmission or acquisition

HIV-INFECTED WOMEN: CONTRACEPTION ⁽³⁾

Consistent use of condoms (male or female) recommended to reduce risk of HIV transmission and STD acquisition, regardless of contraceptive use

TREATMENT FOR PREGNANT WOMEN*

- Combination ART recommended for all HIV-infected pregnant women, regardless of CD4 count, HIV viral load, or clinical status
- Counsel on known benefits and risks of ART during pregnancy

**See also the U.S. Public Health Services Task Force Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV-1 Transmission in the United States.*

ART FOR PREGNANT WOMEN ⁽²⁾

To reduce risk of perinatal transmission:

- Combination ART, with maximal and sustained suppression of HIV RNA levels during pregnancy
- Perform resistance testing before starting ART, and for women on ART with detectable HIV RNA
 - ART may be initiated before results are available; modify ARV regimen if indicated based on resistance test results

ART FOR PREGNANT WOMEN ⁽³⁾

Regimen considerations:

- Potential PK changes caused by pregnancy, different dosing requirements
- Potential adverse effects of ARVs on pregnant women
- Potential short- and long-term ARV effects on the fetus and newborn

ART FOR PREGNANT WOMEN ⁽⁴⁾

Efavirenz

- Risk of neural tube defects in first five-six weeks of pregnancy
- Because pregnancy is rarely recognized before four-six weeks of pregnancy, and changes in ARVs may increase risk of loss of viral control and risk of perinatal transmission, EFV can be continued in pregnant women who present in the first trimester on a virologically suppressive regimen that includes EFV

ART FOR PREGNANT WOMEN ⁽⁵⁾

Zidovudine:

- IV ZDV infusion recommended during labor if maternal HIV RNA is ≥ 400 copies/mL (or is unknown) near time of delivery
- Consider omitting IV ZDV during labor if maternal HIV RNA is < 400 copies/mL, but continue combination ART regimen during labor

ART FOR PREGNANT WOMEN ⁽⁶⁾

- Report cases of prenatal ARV exposure to the Antiretroviral Pregnancy Registry (<http://www.apregistry.com>)
- See U.S. PHS Task Force *Guidelines for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women*

POSTPARTUM MANAGEMENT

- Continuation of ART for maternal health should be determined on same basis as for nonpregnant persons
- Note that ART adherence may worsen postpartum; specifically address and support adherence
- Breastfeeding is not recommended, owing to risk of postnatal transmission
- HIV-infected women should avoid pre-mastication of food for the infant: associated with HIV transmission to child

HIV AND THE OLDER PATIENT

- In the U.S., approximately 30% of HIV-infected persons are ≥ 50 -years-old
- Aging-related comorbidities may complicate management of HIV
- HIV may increase risk of comorbidities and may accelerate the aging process
- Limited data on effects of ARVs in older persons (e.g., adverse effects, drug-drug interactions)

HIV AND THE OLDER PATIENT: HIV RISK, DIAGNOSIS, AND PREVENTION

- Reduced mucosal and immunologic defenses and changes in risk behaviors may lead to increased risk of HIV acquisition and transmission
- HIV screening rates in older persons are low
- Older persons may have more advanced HIV at presentation and ART initiation
 - Screen for HIV per CDC recommendations
 - Sexual history, risk-reduction counseling, screening for STIs (as indicated) are important to general health care for HIV-infected and HIV-uninfected older persons

HIV AND THE OLDER PATIENT:ART

- “ART is recommended in patients >50-years-old, regardless of CD4 cell count” (BIII)
- Older persons have decreased immune recovery and increased risk of non-AIDS events
- No data on specific ARVs in older persons; individualize ARV selection
- Monitor ART effectiveness and safety per general guidelines, but give special attention to renal, liver, cardiovascular, metabolic, and bone health

HIV AND THE OLDER PATIENT:ART (2)

- CD4 cell recovery on ART may be less robust in older patients (though virologic response appears to be the same as in younger patients)
- Starting ART at younger age may result in better outcomes (immunologic and perhaps clinical)
- Interactions between ARVs and other medications, as well as polypharmacy, may complicate care

HIV AND THE OLDER PATIENT: ART (3)

- Adherence:
 - Some data suggest older HIV-infected patients may be more adherent to ART than younger patients
 - However, many issues (e.g., complex dosing requirements, cost, limited health literacy, neurocognitive impairment) may impact adherence
 - Assess adherence regularly; facilitate adherence

HIV AND THE OLDER PATIENT: COMPLICATIONS AND COMORBIDITIES

- Non-AIDS illnesses (e.g., cardiovascular disease, liver disease, cancer, bone fragility, and neurocognitive impairment) may have increased disease burden in aging HIV-infected persons
- Current primary care recommendations advise to identify and manage risks in HIV-infected as in HIV-uninfected individuals

CASE #1

- John is a 22-year-old Hispanic male. He is MSM and has been with his current partner for seven years. They are both in several sexual relationships outside of their relationship. John has been on and off his medication since his diagnosis in 2014. He reports difficulty with adherence due to on and off employment and struggles to pay for his medication. He was recently hospitalized and treated for disseminated HSV and Syphilis. He presents with his partner today stating that his partner was recently diagnosed with HIV.
1. Despite offering intensive medical case management and financial support to allow for prescription assistance the client continues to have adherence issues. What could be other causes of his difficulty adhering to a regimen?
 2. What interventions, other than risk reduction counseling, could assist this patient with making better choices about safe sex practices?

CASE # 2

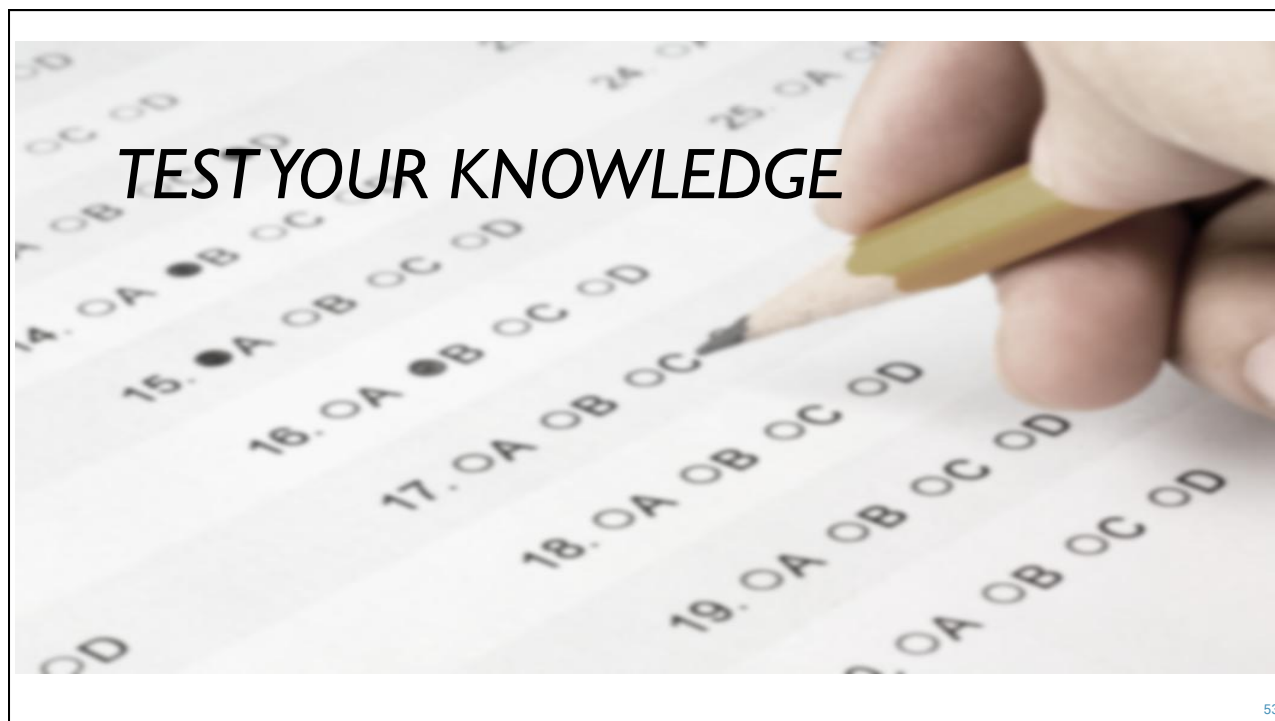
- Dorothy is a 24-year-old AA female presenting as a new patient for HIV care. Diagnosed in 2013 she has been in and out of care and on several HIV medication regimens. She acquired the virus either via intercourse or IV drug use. She has a long history of drug (mainly cocaine) and alcohol abuse. She last used in August 2016 and is currently in an intensive outpatient treatment program. She suffers multiple medical problems including diabetes, COPD, arthritis and hyperlipidemia. She is now virally suppressed and her most recent CD4 level is 47 cells. During her first visit to the clinic her primary complaint is that of oral pain, lesions and tooth pain. On exam she has numerous (>10) plaque-like lesions on her gums and inner lips.
1. Is her current HIV regimen the most effective considering her co-morbidities?
 2. Most recent labs reveal mild hyperthyroidism and she will undergo thyroid ultrasound this week. How might hyperthyroidism impact her HIV treatment?
 3. The patient is already in an intensive outpatient treatment program and lives in a group home where this program takes place. How can we (her medical team) best support her efforts to remain sober?

SUMMARY

- PrEP was approved by the FDA for prevention of HIV infection in uninfected populations
- The evidence to date supports the application of PrEP as an effective prevention strategy
- PrEP should be used as a component of a larger prevention plan to reduce incidence of new HIV infections
- Special considerations should be made for populations that are severely at risk for HIV infection
- Cultural competence is a key component for maximizing uptake of PrEP as a valuable prevention method
- Work together with other members of the health care team to provide behavioral counseling, condoms, screening for STIs, and testing for clients interested in PrEP

QUESTIONS?

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Test Your Knowledge Question #6

If diagnosis is made by HIV RNA testing, confirm diagnosis with subsequent Ab testing:

- A. TRUE
- B. FALSE



Test Your Knowledge Question #7

ART is not recommended for persons with early HIV infection?

- A. TRUE
- B. FALSE



Test Your Knowledge Question #8

Resistance testing should be done at baseline to guide ARV selection (genotype)?

- A. TRUE
- B. FALSE



Test Your Knowledge Question #9

Combination ART is recommended for all pregnant women who are HIV infected, regardless of CD4 count, HIV viral load, or clinical status?

- A. TRUE
- B. FALSE



Test Your Knowledge Question #10

Select the correct answer from the following. In the early stages of the infection:

- A. 20-70% have symptoms of acute retroviral syndrome but acute HIV is often not recognized
- B. 30-80% have symptoms of acute retroviral syndrome but acute HIV is often not recognized
- C. 40-90% have symptoms of acute retroviral syndrome but acute HIV is often not recognized
- D. 50-100% have symptoms of acute retroviral syndrome but acute HIV is often not recognized





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