Work-up of Patients with Advanced HIV Disease Presenting Late to Care

David Alain Wohl, MD
ACTHIV – March 21, 2013
Learning Objectives

Upon completion of this presentation, learners should be better able to:

• Describe the CDC's Cascade of HIV Care and challenges to achieving broad control of HIV.
• Discuss the laboratory evaluation of the patient presenting for HIV care including assessments of viral resistance and for comorbid conditions.
• State the factors that influence HIV care adherence and retention.

There will be no off-label/investigational uses discussed in this presentation.
Case: Victor

36 year old man with PMH of HTN

- Presented to primary MD with 20 pounds of unintended weight loss over past year and increasing fatigue
- Extensive work-up started and found to have anemia
- Complained of new onset cough; prescribed azithromycin x 5 days
- Cough and shortness of breath progressed, prompting ER visit
  - Febrile to 38.3 C
  - Pulse OX 98% on RA, dropping to 93% with coughing
  - CXR without infiltrate
  - ABG with PaO$_2$ of 72; LDH 2600
- Admitted to hospital – placed in respiratory isolation
- HIV Test ➔ +
- Bronchoscopy performed and lavage + PCP by DFA
- Labs:
  - CD4 =113
  - HIV RNA = 352,000
Case: Victor

• PMH:
  – HTN on HCTZ
  – No prior STIs
  – No prior HIV testing (no blood donation)

• SH:
  – Construction worker
  – Single
  – Sex with female sex workers, sometimes does not use condoms
  – Denies sex with men, injection drugs, transfusions
  – Former smoker
  – No illicit drugs, 6-pack of beer on weekends
  – No foreign travel
  – No medical insurance
The HIV care continuum

1. Diagnosis of HIV
2. Linkage to Care
3. Retain in Care
4. Prescribe ART
5. Suppress viremia
The HIV care continuum

Which step is the most challenging?

Diagnosis of HIV → Linkage to Care → Retain in Care → Prescribe ART → Suppress viremia

A  B  C  D  E
Improving Control of HIV Begins With Enhanced Detection and Linkage to Care

- Data from CDC and Prevention National HIV Surveillance System used to calculate HIV prevalence, undiagnosed HIV prevalence, and linkage to HIV care

CDC: Young People Are Less Engaged in Care Than Other Groups

- Individuals 25-34 yrs of age less engaged in each stage of care compared with all older age groups

NA-ACCORD: Late presentation

Althoff KN, et al. AIDS Res Ther. 2010
NC: Late presentation

![Bar chart showing percentage of patients by CD4 count, race, and year of entry (1999-2001, 2002-2005, 2006-2009).](image)

### Table 2. Clinical Characteristics at Entry to HIV Care Between 1999 and 2009 Stratified by Race/Ethnicity and Sex

<table>
<thead>
<tr>
<th>Variable</th>
<th>Latino (n = 74)</th>
<th>White (n = 179)</th>
<th>Black (n = 336)</th>
<th>Latino (n = 23)</th>
<th>White (n = 57)</th>
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<tr>
<td>Median CD4 count, cells/mm³ (IQR)</td>
<td>169 (60-312)</td>
<td>249 (79-484)</td>
<td>279 (53-454)</td>
<td>294 (39-432)</td>
<td>352 (150-547)</td>
<td>338 (67-549)</td>
<td>186 (57-340)</td>
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<td>Median log viral load (IQR)</td>
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<td>4.9 (4.1-5.5)</td>
<td>4.3 (3.6-5.0)</td>
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<td>52 (71)</td>
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Dennis A, et al. CID 2011
Benefits of Enhanced HIV Screening Program—Washington, DC

- Number of HIV tested subjects increased from 19,000 to 73,000 between 2004 and 2008 after HIV testing campaign started in Washington, DC in 2006
- Median CD4+ cell count at the time of diagnosis increased 57%

Linkage/Retention in HIV Care Associated With Improved Clinical Outcomes

- Retrospective statewide study in South Carolina
- Retention defined as ≥ 1 visit in each of four 6-mo periods over 2 yrs
- Retention categorized as
  - Optimal (visits in 4 intervals)
  - Suboptimal (visits in 3 intervals)
  - Sporadic (visits in 1 or 2 intervals)
  - Dropout (no visits)

Case: Victor – Newly diagnosed with HIV (CD4 = 113; HIV RNA = 352K)

Referred to HIV Specialist (you). What do we do next?

• Prepare for initiation of HIV therapy
• Prevention of opportunistic conditions
• Routine health maintenance
• Secondary HIV transmission prevention
When do we assess for drug resistant HIV?

A. Immediately at first visit before starting HIV therapy
B. After establishing ongoing care and before HIV therapy
C. Only after starting ART, if needed (i.e., failing ART)
D. Annually
## US DHHS HIV Treatment Guidelines

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Case: Victor – Newly diagnosed with HIV (CD4 = 113; HIV RNA = 352K)

- Prepare for initiation of HIV therapy
  - Assess willingness and ability to start HIV therapy
    - Comorbid medical and mental health conditions
    - Commitment
    - Stability
    - Support
    - Resources
  - Education
    - HIV 101
    - Referral to information sources

Important Labs:
- HIV genotype (wait for results to return vs. start now)
- Safety labs (creatinine)
- HBV and HCV serologies
- RPR
What percentage of antiretroviral-naïve persons are infected with virus that shows evidence of at least one clinically relevant mutation (i.e., are infected with a virus that shows evidence of transmitted drug resistance)?

A. About 5%
B. About 10%
C. About 15%
D. About 25%
E. About 40%
Transmitted Drug Resistance in US: Newly Diagnosed

- 2007 CDC surveillance for transmitted drug resistance
- Of 10,496 patients with new HIV diagnosis, 2480 resistance genotypes submitted
  - Might introduce selection bias
- Baseline (transmitted) drug resistance present in 16% with new HIV diagnosis
  - Most common: NNRTIs (8.1%, half K103N)
  - 83% had single mutation
- No demographic risk factors for resistance identified – contrasts with prior studies

Swiss HIV Cohort Study: Adherence Patterns Over Time

- Overall: adherence levels improved over time
- Predictors of worsening adherence: younger age, lower education, loss of a roommate, initiation of injection-drug use, increasing alcohol intake, onset of depression, longer duration of HIV infection, onset of lipodystrophy, and changes in care provider

Predictors of Poor Adherence

- Low levels of literacy
- Age-related challenges (vision loss, cognitive impairment)
- Psychosocial issues (depression, homelessness, poor social support, stressful life events, dementia, or psychosis)
- Active (but not history of) substance abuse
- Stigma
- Difficulty taking medication (trouble swallowing pills, daily schedule issues, etc)

DHHS Guidelines for Antiretroviral Therapy in Adults and Adolescents. March 2012.
Case: Victor – Newly diagnosed with HIV (CD4 = 113; HIV RNA = 352K)

- Routine health maintenance
  - STI screen (3-point)
  - Cancer screening
  - Smoking cessation
  - CVD risk assessment
Primary Care Guidelines for the Management of Persons Infected with Human Immunodeficiency Virus: 2009 Update by the HIV Medicine Association of the Infectious Diseases Society of America

Evidence-based guidelines for the management of persons infected with human immunodeficiency virus (HIV) were prepared by an expert panel of the HIV Medicine Association of the Infectious Diseases Society of America. These updated guidelines replace those published in 2004. The guidelines are intended for use by health care providers who care for HIV-infected patients or patients who may be at risk for acquiring HIV.

Case: Victor – Newly diagnosed with HIV (CD4 = 113; HIV RNA = 352K)

• Secondary HIV transmission prevention
  – Counseling
  – Treat concomitant STIs
  – Reduce HIV RNA
CDC: Largest Drop in Treatment Cascade Occurs in Retention in Care

- Data from CDC National HIV Surveillance System used to calculate HIV prevalence, undiagnosed HIV prevalence, and linkage to HIV care.

Diagram showing:
- Diagnosed: 82%
- Linked to Care: 66%
- Retained in Care: 37%
- Prescribed ART: 33%
- Viral Suppression: 25%

N = 1,148,200

Linkage to Care

- Screening patients for HIV is only the first step
- Establishing a relationship with an experienced HIV care provider is essential for effective co-management of HIV-infected pts
- Implement procedures to ensure successful referrals for those cases that are difficult to manage
  - Other, less complicated cases can be co-managed with semiannual or annual review with HIV expert
- Follow-up to determine if referral appointment kept
- Determine who will manage other primary care issues


Recommendations

1. Systematic monitoring of successful entry into HIV care is recommended for all individuals diagnosed with HIV (II A)

2. Systematic monitoring of retention in HIV care is recommended for all patients (II A)

3. Brief, strengths-based case management for individuals with a new HIV diagnosis is recommended (II B)

4. Intensive outreach for individuals not engaged in medical care within 6 mos of a new HIV diagnosis may be considered (III C)

5. Use of peer or paraprofessional patient navigators may be considered (III C)
Which of the following is not a predictors of poor linkage to HIV care appointment adherence, or retention in care?

A. Older age
B. Female sex
C. Black race
D. Rural residence
E. Poverty
Predictors of Poor Linkage, Appointment Adherence, or Retention in Care

- Demographic characteristics
  - Younger age
  - Female sex
  - Racial/ethnic minority status
  - No or public insurance
  - Lower socioeconomic status
  - Rural residence
  - No usual source of care

Giordano TP. 2010 Ryan White HIV/AIDS Program Clinical Conference.
Predictors of Poor Linkage, Appointment Adherence, or Retention in Care

• Disease severity
  – Less advanced HIV disease
  – Fewer non-HIV comorbidities

• Psychosocial characteristics
  – Substance use/HCV coinfection
  – Low readiness to enter care
  – Less social support

• System and patient factors
  – Less use of ancillary services/greater unmet need
Using Electronic Media to Improve Adherence

- Do you need a multimillion dollar NIH grant to set up systems to remind patients to come to their appointments?
- No; you can use
  - Automated reminders
  - Call from clinic counselor or nurse to reinforce reminder
    - Find out which phone patient prefers (cell vs home)
    - Call more than once
Recommendations for Improvement of Processes

• Track no-show rates and patients out of care
  – Bringing patients back is much more difficult once they are completely out of care
• Work with ED and inpatient services, community-based organizations, public health agencies, jails/prisons, other RW providers to identify those who have dropped out of care and build or strengthen relinkage processes
• Build or strengthen outreach or peer navigator programs
Recommendations for Improvement of Processes

• Work with the resources you have
  – Have staff and peer counselors advocate with patients for retention
• Improve the client’s experience
• Minimize unmet need: strengthen substance use, mental health, case management, and social services
• Minimize time between appointment making and appointment date
• Pilot wider appointment availability, open access to clinic

Giordano TP. 2010 Ryan White HIV/AIDS Program Clinical Conference.
Case: Victor – Newly diagnosed with HIV

- Starts ART immediately given his PCP
- HBV and HCV seronegative
- Genotype returns and no resistance detected
- Released from hospital and case management established
- Seen in clinic 1 week after discharge
- Completes PCP treatment and starts PCP prophylaxis
- Seen in clinic at 4 weeks and HIV RNA level is 190; at 8 weeks is < 50 and CD4 = 302
- Vaccine for pneumococcus, influenza, HBV and HAV given
- Adherence and sexual risk activity assessed at each visit