HARRISHEALTH SYSTEM

Texas/Oklahoma AIDS Education & Training Center

Invites you to attend

Adherence to Antiretroviral Therapy In Our HIV Positive Homeless

For this lecture, the objectives for the Participant will be:

- Review of the Antiretroviral Medications for the HIV positive patient
- Learn basic principles of HIV medication monitoring
- Learn approaches to measuring adherence to ART suitable for routine HIV care
- Learn approaches to improving adherence to ART suitable for routine HIV care

Presented by: Thomas Giordano, MD MPH
Professor; Infectious Diseases, Baylor College of Medicine
Medical Director Baylor College of Medicine
And
Charlene A. Flash, MD MPH, Assistant Professor
Section of Infectious Diseases
Baylor College of Medicine

Date: Tuesday, October 1, 2013

Place: Harris Health Systems Kirby
Professional Building, Suite 1500
9250 Kirby Drive, Houston TX 77054

Time: 12:30pm – 1:30pm

To participate in this lecture please Click Here

Comments or questions regarding lecture please connect with Education Coordinator Jeff Benavides at 713-873-4026 or Jeffery.benavides@harrishealth.org

HIV Treatment

Introduction to Antiretrovirals

Tuesday, October 1, 2013

Harris Health System
Kirby Professional Building

Charlene A. Flash MD MPH
Assistant Professor of Medicine
Baylor College of Medicine

BCM
Baylor College of Medicine

HARRISHEALTH SYSTEM

Texas/Oklahoma

Overview

- Principles of HIV treatment
- Commonly used HIV drugs
- Treatment goals

Baseline Testing

- HIV-1/HIV-2
- HIV-1 Western Blot
- CD4-T-cell count
- Plasma HIV RNA (VL)
- HIV Genotype
- CBC, Chemistry, LFTs, Urinalysis
- Serology for Hepatitis
- Pregnancy
- G-6-PD
- Screening test for STDs (RPR, GC, Chlamydia)
- Chest X rays
- Lipid profile
- Urine drug screening
- PPD

Roberto Andrade, MD

Current HIV Medications

NRTI: nucleoside reverse transcriptase inhibitor
- Abacavir (ABC)
- Didanosine (ddI)
- Emtricitabine (FTC)
- Lamivudine (3TC)
- Stavudine (d4T)
- Tenofovir (TDF)
- Zidovudine (AZT, ZDV)

NNRTI: nonucleoside RT inhibitor
- Delavirdine (DLV)
- Efavirenz (EFV)
- Etravirine (ETR)
- Nevirapine (NVP)
- Rilpivirine (RPV)

PI: protease inhibitors
- Atazanavir (ATV)
- Darunavir (DRV)
- Fosamprenavir (FPV)
- Indinavir (IDV)
- Lopinavir (LPV)
- Nelfinavir (NFV)
- Ritonavir (RTV)
- Saquinavir (SQV)
- Tipranavir (TPV)

Integrase Inhibitor (II)
- Raltegravir (RAL)
- Elvitegravir* (EVG)

Fusion Inhibitor
- Enfuvirtide (ENF, T-20)

CCR5 Antagonist
- Maraviroc (MVC)

* EVG currently available only in coformulation with cobicistat (COBI)/TDF/FTC

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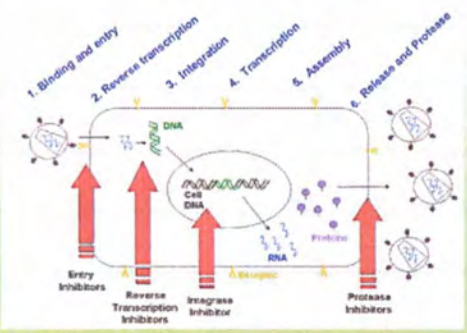


From: http://www.bcm.edu/molvir/eidbt/eidbt-mvm-hivaids.htm

Atripla

- Contains efavirenz, tenofovir, emtricitabine
- 1 tab daily usually at bedtime.
- Most common AEs
  - Strange dreams - efavirenz
  - Neuropsychiatric
  - Teratogenic →neural tube defects in human infants after first-trimester exposure
  - Dyslipidemia

Protease inhibitors

- Darunavir (Prezista) + ritonavir (norvir)

Booster


- Sturdy drugs!!
- Most common AEs: nausea, vomitting, diarrhea
  - Rule out other infection then may control with imodium or lomotil.
- Hyperlipidemia
- Lipodystrophy
- Hepatotoxicity

Protease inhibitors and other drugs…

- Many drug interactions
  - Amlodipine
  - Statins – use pravastatin or rosuvastatin
  - Coumadin - monitor INR carefully
  - Steroids – don't use flovent
    - Use flunisolide or beclomethasone

Atazanavir + ritonavir

- One capsule daily
- Most common AEs:
  - Mild hyperbilirubinemia
  - Kidney stones
  - Gallstones
- Drug interactions
  - Acid reducing agents

Treatment goals

- Control the virus!!
  - Get HIV viral load undetectable (<20 copies)
    100,000-→10,000→1000→100→→→<20
- Strengthen the immune system!!
  - Get CD4 count above 500 or has high as we can.
- Stay Safe!!
  - Safety labs
    - CD4-T-cell count
    - Plasma HIV RNA (Viral load)
    - Complete blood count, Chemistry, Liver function tests

Summary

- Principles of HIV treatment
  - Always treat with drug cocktail
- Commonly used HIV drugs
  - Single tablet options: Atripla or complera
  - Truvada PLUS
  - Ritonavir is a BOOSTer
- Treatment goals
  - Undetectable viral load
  - High CD4 count
  - Safety labs

Next Sessions

- HIV medication adherence
- Opportunistic Infections

Adherence to Antiretroviral Therapy for the Healthcare for the Homeless Program

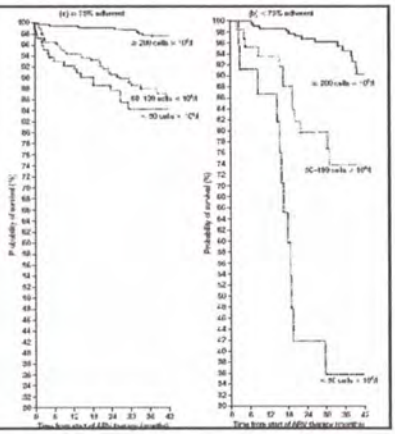
Thomas P. Giordano, MD, MPH
Baylor College of Medicine
Thomas Street Health Center
Houston, TX

October 1, 2013

OBJECTIVES

- Learn approaches to measuring adherence to ART suitable for routine HIV care
- Learn approaches to improving adherence to ART suitable for routine HIV care

HIV: ADHERENCE-SURVIVAL RELATIONSHIP



Wood et al., AIDS 2003, 17:711–720

MONITORING ART ADHERENCE

- Need to rely on self-report
- Many variations
  - Recall time period
  - Quantitative (#, %) versus qualitative ("poor...excellent")
    - Dose counting versus estimating adherence
    - Continuous versus discreet options

Table 3. Spearman correlation coefficients of VAS, AACTG, and qualitative single-item measure to MEMS and pharmacy data over all follow-up time among patients in the Steps adherence substudy

Comparison	Sample size	Correlation coefficient	95% confidence interval	P
Correlation to MEMS data				
VAS	46	0.37	0.22, 0.50	<.01
AACTG	46	0.32	0.16, 0.45	<.01
Qualitative single-item measure	44	0.24	0.08, 0.38	<.01
Correlation to pharmacy data				
VAS	45	0.34	0.21, 0.46	<.01
AACTG	45	0.28	0.14, 0.41	<.01
Qualitative single-item measure	43	0.32	0.18, 0.44	<.01

Note: VAS = visual analogue scale; AACTG = Adult AIDS Clinical Trial Group; MEMS = Medication Event Monitoring System; ABOUT = Attitudes and Beliefs and the Steps of HIV Care study.

Bucher et al., HIV Clin Trials 2011;12(5):244

MONITORING ART ADHERENCE

Bottom Line:

- Ask about adherence
- Use a non-judgmental, collaborative approach
- Start with an open-ended question
- Be permissive: Accept <100% adherence as 'normal'
- Use a longer time frame to assess adherence 'overall' and a shorter time frame to go over details

ART STRATEGIES

- Manage (anticipate) side effects
- Consider lifestyle factors (meals, work, sleep)
- Pill burden and dosing frequency are important
- Difficult to do RCTs in naives with pill burden as only variable

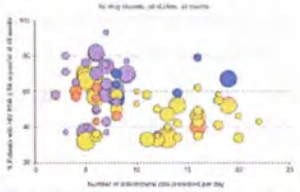


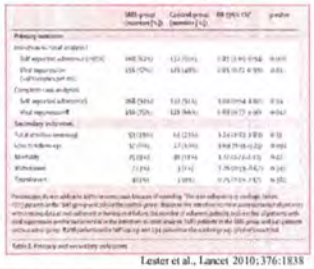
Fig. 2. Bubble plot displaying the relationship between the percentages of subjects with plasma HIV RNA levels < 50 copies/ml at week 48 and pill counts. The size of the bubble reflects the numbers of subjects, and the bubbles are colour-coded by regimen type. Univariate analysis demonstrated a significant relationship between lower pill counts and virologic responses. However, after adjustment in the multivariate linear regression, the correlation between pill count and response was no longer significant. ●, nucleoside reverse transcriptase inhibitor; ●, non-nucleoside reverse transcriptase inhibitor; ●, protease inhibitor; ●, boosted protease inhibitor.

Bartlett et al., AIDS 2006;20(16):2051

ADHERENCE TOOLS FOR PATIENTS

- Recent SMS studies:
  - Conflicting results
  - Interactive better than not
  - Weekly better than daily
  - Content may not be too relevant (Pop-Eleches et al., AIDS 2011;25)

RCT of weekly interactive SMS on adherence (SR) and VS



Lester et al., Lancet 2010; 376:1838

RCT of weekly one-way SMS vs nothing in naives

Outcome	Type	SMS group (n = 191)	Control group (n = 98)	Effect Estimate*
Primary	Binary	n (%)	n (%)	RR (95% CI),p
	VRS: <95%	72 (71.3)	66 (66.7)	1.06 (0.84-1.34, 0.543
	Self report (no missed doses)	80 (79.2)	79 (79.8)	1.01 (0.87-1.16), >0.999
	Continuous	Mean (SD)	Mean (SD)	MD (95% CI),p
	Pharmacy Refill Data	3.8 (1.46)	3.7 (1.34)	0.1 (-0.29,0.49), 0.617

Mbuagbaw et al., PLOS One 2012;7(12):e46909

EDUCATION AND COUNSELING

- 55 studies recently reviewed; no "1A" level recommendations
- Education is necessary but not sufficient
- Combination modalities generally work better than single; use reminders, pillboxes, feedback, along with counseling and education
- "Strategies to support adherence that involve one-on-one discussions targeting enhancement of facilitators and easing of barriers are recommended."
- Group education and counseling interventions are very diverse and fewer in number, so conclusions are difficult
- Peers are rarely studied in isolation, so difficult to assess their unique effect
- Effects on biological outcomes from these strategies are limited

Thompson et al., Ann Intern Med 2012;156:817-833

TOOLS, EDUCATION, AND COUNSELING

Bottom Line:

- One-on-one education
- Assess barriers and facilitators
- Collaboratively problem solve and build skills
- Multi-disciplinary approaches likely to be most successful

Questions?

Thank you

ID number: ____ ____ / ____ ____ / ____ ____ ____ ____
(Birth Month) (Birth Day) (Last Four SSN)

HIV 101 Post lecture Questions (circle correct answer)

1. Some of the baseline labs needed for the initial evaluation of the HIV infected patient include:
{choose the most correct answer}

A. CD4, HIV viral load, CBC with diff, BUN/Cr, LFTs
B. CD4, HIV viral load, HLA B5701, pt/inr, hepatitis B viral load
C. CD4, HIV genotype, ESR, CRP, LFTs
D. CD4, HIV viral load, vitamin D level

2. Without treatment, the life expectancy for a patient with a CD4 count of 50 is on average:

A. 6 months
B. 2 years
C. 5 years
D. 10 years

3. Most HIV transmission occurs among people who are aware of their HIV infected status.

A. True
B. False

Primary Care Issues in HIV Pre-Lecture Questions

1. Which of the following are important in the initial evaluation for the HIV infected patient?

    a. HIV knowledge
    b. Risk Behaviors
    c. Mental illness
    d. Other Health Issues
    e. All the above

 Please review both sides

HIV Management Overview Questions (circle correct answer)

1. Some of the baseline labs needed for the initial evaluation of the HIV infected patient include: {choose the most correct answer}

   A. CD4, HIV viral load, CBC with diff, BUN/Cr, LFTs
   B. CD4, HIV viral load, HLA B5701, pt/inr, hepatitis B viral load
   C. CD4, HIV genotype, ESR, CRP, LFTs
   D. CD4, HIV viral load, vitamin D level

2. Most HIV transmission occurs among people who are aware of their HIV infected status.

   A. True
   B. False

3. Which of the following are important in the initial evaluation for the HIV infected patient?

   A. HIV knowledge
   B. Risk Behaviors
   C. Mental illness
   D. Other Health Issues
   E. All the above

4. Why is important to assess previous HIV medication history?

   A. To assess previous issues with side effects or allergy
   B. To improve adherence to future regiments
   C. To assess for possibility of resistance
   D. To make patients know about their HIV history
   E. A, B, and C

5. The following vaccines should routinely be given to HIV infected patients, EXCEPT

   A. Influenza Vaccine
   B. Hepatitis A, if non immune
   C. Hepatitis B, if non immune
   D. Pneumococcal vaccine
   E. Shingles vaccines

Please turn-over to view more questions

This publication is part of a series of manuals that describe models of care that are included in the HRSA SPNS Initiative Building a Medical Home for HIV Homeless Populations. Learn more at http://cahpp.org/project/medheart/models-of-care