Primary Care for Patients with HIV/AIDS
What makes it different?

- Drug-drug interactions relatively more prevalent
- Stigma remains a major obstacle to care
- Improved treatment options and prognosis (patients/providers unaware of excellent prognosis)
- Lack of provider confidence in co-managing
- Lack of specialist confidence with providing primary care
- Patients at risk for different problems depending on CD4
- Geography
- Lack of a relationship with local specialty providers
- Strict medication adherence of more importance
Primary Care for Patients with HIV/AIDS
Goals for Talk

- Demonstrate how to use CD4 count to help guide differential diagnosis in evaluating patient symptoms or illness
- Demonstrate both some similarities and differences in providing primary care for HIV patients
- Review some common medical conditions and discuss management
- See how geography presents challenges for the primary care of patients with HIV/AIDS
- Generate interest in the co-management of patients with HIV

CASE
Infectious Complications and CD4 Count Disorders Seen in Heartland CARES Patients

Adapted - Medical Management of HIV Infection: Bartlett JG, Gallant JE; Johns Hopkins University; 2001; page 2.
Primary Care for Patients with HIV/AIDS
Causes of Death among Persons with AIDS in the Era of HAART

• All adult NYC residents with AIDS 1999-2004
• Cohort analysis, death certificates
• Non-HIV deaths ↑32.8% (19.8-26.3, p=.0015)
  – Substance abuse – 31%
  – CVD – 23.8%
  – Cancer – 20.8%
• Age-adjusted mortality for AIDS ↓49.6/10,000/year (p<.0001)


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Primary Care for Patients with HIV/AIDS
Cardiovascular Disease

  – Rates of admissions for and deaths from CVD declined after HAART
  – Interruption or conservation - ↑OI, death, CVD (60%) at 16 months
• AIDS Clinical Trials Group 5152S *Circulation.* 2005;112:II-237
  – Improved endothelial function on any regimen at 24 weeks
Primary Care for Patients with HIV/AIDS
Cardiovascular Disease

Data Collection of Adverse Events of HIV Drugs (DAD)

- Prospective study of 95,000 person-years
  - 39 y/o, 78% white, 24% women, 61% tobacco, 42% dyslipidemia
  - Cardiac event rate = 3.65 per 1000 person-years
  - Adj for cardiac RF: ↑RR 16%/year HAART
  - PI use may ↑ risk after adjustment for age and other RF
    - Endothelial dysfunction
  - Risk present even when not on PIs
    - Endothelial dysfunction
  - PI use associated with carotid atherosclerosis


Primary Care for Patients with HIV/AIDS
Cardiovascular Disease

- All PLWH should be evaluated for CAD risk
  - Traditional risk factors
    - tobacco, HTN, dyslipidemia, family history
  - Emerging risk factors
    - weight, HAART (PIs)
- Treatment
  - Lifestyle modification
    - smoking cessation
  - Treat diabetes, HTN, dyslipidemia
  - Low CV-risk HAART
**CASE**

**Cardiovascular Disease Risk Reduction Strategies**

<table>
<thead>
<tr>
<th>Same approach for HIV (+) and HIV (-) patients</th>
<th>Unique in the Management of HIV patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lifestyle Strategies</strong></td>
<td><strong>Change the Highly Active Antiretroviral Treatment Approach</strong></td>
</tr>
<tr>
<td>• Smoking cessation</td>
<td></td>
</tr>
<tr>
<td>• Dietary recommendations</td>
<td></td>
</tr>
<tr>
<td>• Alcohol reduction</td>
<td></td>
</tr>
<tr>
<td>• Exercise</td>
<td></td>
</tr>
<tr>
<td><strong>Combined Lifestyle and Therapeutic</strong>*</td>
<td></td>
</tr>
<tr>
<td>• Lipid lowering therapy</td>
<td></td>
</tr>
<tr>
<td>• Blood pressure control</td>
<td></td>
</tr>
<tr>
<td>• Diabetes management</td>
<td></td>
</tr>
<tr>
<td><em>attention to drug-drug interactions</em></td>
<td></td>
</tr>
</tbody>
</table>
**Dyslipidemia Screening and Definition**

- **Screening**
  - Before initiating HAART
  - 3-6 months after changing a HAART regimen
  - Follow standard recommendations for patients who are HIV seronegative

- **Definition of dyslipidemia**
  - TC > 200
  - LDL > 130
  - Triglycerides > 150
  - HDL < 40
  - TC/HDL ratio > 6.5

**Dyslipidemia Risk Stratification**

- Factors evaluated in risk factor assessment
  - Age
  - Smoking
  - Elevated total cholesterol
  - Low HDL
  - Family history of premature coronary disease
  - HTN
  - Menopausal status
### Dyslipidemia - Treatment Goals

#### NCEP Treatment Goals Based on Serum LDL Levels

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>LDL cholesterol level, mg/dl</th>
<th>Treatment Goal</th>
<th>Initiate Lifestyle Modification</th>
<th>Consider Drug Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD or Equivalent</td>
<td></td>
<td>&lt;100</td>
<td>&gt;100</td>
<td>&gt;130</td>
</tr>
<tr>
<td>≥2 Risk Factors &amp; 10 year risk 10-20%</td>
<td></td>
<td>&lt;130</td>
<td>&gt;130</td>
<td>&gt;130</td>
</tr>
<tr>
<td>≥2 Risk Factors &amp; 10 year risk &lt; 10%</td>
<td></td>
<td>&lt;130</td>
<td>&gt;130</td>
<td>&gt;160</td>
</tr>
<tr>
<td>0-1 Risk Factors</td>
<td></td>
<td>&lt;160</td>
<td>&gt;160</td>
<td>&gt;190</td>
</tr>
</tbody>
</table>


### Dyslipidemia

#### Choice of Agent in Patients on HAART

<table>
<thead>
<tr>
<th>Lipid Abnormality</th>
<th>Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First Choice</td>
</tr>
<tr>
<td>Elevated LDL-C or elevated non-HDL-C and triglyceride 200-500 mg/dl</td>
<td>Statin (B1)</td>
</tr>
<tr>
<td>Elevated LDL-C or elevated non-HDL-C and triglyceride &gt; 500 mg/dl</td>
<td>Fibrate (B1)</td>
</tr>
</tbody>
</table>

*UpToDate and CID 2003; 37:613.*
Dyslipidemia
Choice of Agent in Patients on HAART

Consider Use
- Atorvastatin (Lipitor®)
- Ezetimibe (Zetia®)
- Niacin (Niaspan®)
- Ω-3 Fatty Acids (Omacor®)

Don’t Use
- Simvastatin (Zocor®)
- Lovastatin (Mevacor®)
- Cholestyramine (Questran®)
- Colestipol (Colestid®)

Preferred
- Pravastatin (Pravachol®)
- Rosuvastatin (Crestor®)
- Gemfibrozil (Lopid®)
- Fenofibrate (Lofibra®)

Insulin Resistance and Diabetes

- Insulin resistance and glucose intolerance reported in up to 50% of patients on HAART (PI)
- HIV (+) men on HAART are 4X more likely to develop diabetes compared with HIV (-) controls
- Symptoms may develop within a few weeks of starting treatment
- Factor in risk factors for DM in choosing HAART strategy

Grinspoon S, Carr A. Cardiovascular Risk and Body-Fat Abnormalities in HIV-Infected Adults. NEJM. 2005;352;48-62
AAHIVM Fundamentals of HIV Medicine 2007, 845-6
Treatment of Diabetes Mellitus

- Alter HAART to try to discontinue the most likely offending agent
- Manage in the same manner as for HIV (-) patients
  - Diet and lifestyle modification
  - Insulin sensitizing agents are the oral hypoglycemics of choice in HIV (+) patients
    - Metformin disadvantage of GI distress
    - Rosiglitazone disadvantage of cholesterol effects

Total Client Enrollment By Location

Kentucky (250)
- 242 known counties
- 8 unknown counties

Illinois (136)
- 127 known counties
- 9 unknown counties

Other States (16)

Total = 402

Residence of Last 100 New Patients

KY = 70
IL = 27
TN = 2
MO = 1

110 miles * Paducah, KY
130 miles
Client Enrollment & Primary Care Physicians By Location

Kentucky (250)
242 known counties
8 unknown counties
Illinois (136)
127 known counties
9 unknown counties
Other States (16)

CASE
Bone Disorders

• High prevalence of osteopenia and osteoporosis (patients on or not on HAART)
• One osteoporosis prevalence study in treatment naïve patients:
  – 23 to 28% higher than HIV(-) controls
• Study osteoporosis rates in patients on treatment:
  – 50% in patients receiving PI
  – 23% in HIV patients not on PI
  – 29% in matched controls
• One study
  – High prevalence (4.4%) osteonecrosis of the hip (asymptomatic patients)
  – Symptomatic osteonecrosis of the hip 100X higher than the general population

AAHIVM Fundamentals of HIV Medicine 2007, 845-6

Bone Disorders

• Factors associated with increased bone loss in HIV-infected cohorts
  – Low body weight
  – Low body mass index
  – Smoking history
  – Duration of HIV infection
• Traditional risk factors for development of osteopenia and osteopenia
  – Increasing age
  – Heavy alcohol consumption
  – Steroid exposure
Bone Disorders

• Treatment strategies
  – Maintain dietary calcium and vitamin D
  – Incorporate weight bearing exercise
  – Bisphosphonate therapy combined with calcium and vitamin D
  – Joint replacement therapy

CASE
### Primary Care for Patients with HIV/AIDS

**Fatigue – Differential Diagnosis**

<table>
<thead>
<tr>
<th>General Causes</th>
<th>Medication Side Effects</th>
<th>Psychiatric Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Opportunistic Infection</td>
<td>• Antihypertensives</td>
<td>• Depression</td>
</tr>
<tr>
<td>• Hypogonadism</td>
<td>• Benzodiazepines</td>
<td>• Alcohol abuse</td>
</tr>
<tr>
<td>• Adrenal insufficiency</td>
<td>• Antidepressants</td>
<td>• Substance abuse</td>
</tr>
<tr>
<td>• Myopathy</td>
<td>• Narcotic analgesics</td>
<td></td>
</tr>
<tr>
<td>• Anemia</td>
<td>• Antipsychotics</td>
<td></td>
</tr>
<tr>
<td>• Pain</td>
<td>• Antiemetics</td>
<td></td>
</tr>
<tr>
<td>• Hypothyroidism</td>
<td>• Antiretroviral agents</td>
<td></td>
</tr>
<tr>
<td>• Sleep apnea</td>
<td>• Depression screen</td>
<td></td>
</tr>
<tr>
<td>• CHF</td>
<td>• Dementia screen</td>
<td></td>
</tr>
<tr>
<td>• Lactic acidosis</td>
<td>• Substance abuse screen</td>
<td></td>
</tr>
</tbody>
</table>

### Primary Care for Patients with HIV/AIDS

**Fatigue – Initial Evaluation**

<table>
<thead>
<tr>
<th>History</th>
<th>Medication Review</th>
<th>Mental Status Examination</th>
<th>Laboratory Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Timing of onset</td>
<td>• Current</td>
<td>• Depression screen</td>
<td>• CMP</td>
</tr>
<tr>
<td>• Duration</td>
<td>• Recent</td>
<td>• Dementia screen</td>
<td>• CBC</td>
</tr>
<tr>
<td>• Severity</td>
<td>• Past</td>
<td>• Substance abuse screen</td>
<td>• TFT</td>
</tr>
<tr>
<td>• Associated symptoms</td>
<td></td>
<td></td>
<td>• SaO2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• ABG</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Testosterone</td>
</tr>
</tbody>
</table>
Primary Care for Patients with HIV/AIDS

Depression and Adjustment Disorders

• Prevalence of current major depression in the HIV infected population
  – 4 to 21%

• Prevalence of adjustment disorder
  – As high as 20%

• Untreated depression:
  – Contributes to non-adherence with clinic visits
  – Contributes to non-adherence with HAART
  – Associated with HIV disease progression
  – Can contribute to high-risk behavior

Primary Care for Patients with HIV/AIDS

Depression and Adjustment Disorders

• Major Depression
  – Inability to feel pleasure or satiety
  – Diminished vital sense; somatic complaints
  – Generalized reduction in feelings of self-worth and hopelessness
  – Neurovegetative symptoms
  – Often no precipitating event
  – Family history present

• Adjustment Disorders
  – Able to feel pleasure when distracted from demoralizing event
  – Generally feel healthy
  – Rarely experience global changes in self-attitude
  – Neurovegetative symptoms to a limited degree
  – Precipitating event often identifiable
  – No family history
Primary Care for Patients with HIV/AIDS
Depression and Adjustment Disorders

• Treatment

CASE
CONCLUSIONS

• Many of the management strategies are the same
• Because of geography partnering is going to be critical
  – Better chronic disease management
  – Better patient satisfaction
• HIV specialists and primary care providers can teach/improve each others care delivery
• The longer people are living the relatively more important local care becomes
• Co-Management can help chip away at issues of stigma
• Co-Managing HIV patients will provide a tremendous service and not overwhelm your practice

END