The Aging of HIV Patients: Implications for Dentists
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Older Adults with HIV
“older” in the HIV literature is 50

- Core Concepts
  - Changes in demographics of the epidemics
  - Review the natural history of untreated HIV
  - Effect of ARV treatment
- Populations of older individuals who have HIV
  - Aging with HIV
  - Diagnosed initially at older ages
- Accelerated Aging
- Implications for Dental Care
  - Screening in the dental setting

No conflict of interest or disclosures

Rates of Diagnoses of HIV Infection among Adults and Adolescents, 2013—United States and 6 Dependent Areas
N = 47,958  Total Rate = 18.0

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting.

Rates of Adults and Adolescents Living with Diagnosed HIV Infection, Year-end 2012—United States and 6 Dependent Areas
N = 931,449  Total Rate = 352.3

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting.

Acute HIV
- HIV enters the body and begins replication
- 50-90% of patients have symptoms
- High viral replication (millions/ml)
- High transmission risk
- CD4 (T helper) cells drop abruptly then rebound to near normal levels
- Antibody test goes from negative to positive

“Asymptomatic” (latent) HIV
- Generally lasts 2-15 years (untreated)
- Patients generally feel well
  - may have mild anemia, more frequent bacterial infections, increased risk of some infections (TB, zoster, HSV) or malignancies
- Patients are infectious to sexual or drug using partners
- Slow decline in CD4
Symptomatic HIV infection (AIDS)

• Progressive immune dysfunction
• CD4 falls more precipitously
  CD4 < 200 = AIDS
  • Infection with “nonvirulent” microbes, malignancies, generalized “wasting” and a variety of neurological problems

The Early Days of HIV

• Simultaneous epidemics
  – MSM, IDU, hemophiliacs and transfusion recipients, heterosexuals, neonates
• Late diagnosis, short life expectancy
• Focus on treatment of opportunistic infections and palliative care
  – “Sloppy” primary care
• Health care providers - stress, fear, and high burn out

HIV Now

• Chronic manageable disease
  – Many available antiretroviral medications
    • Few side effect
    • Combination pills (one pill once a day)
  – Immunologic recovery
• Challenges
  – Undiagnosed patients
  – Achieving consistent engagement in care
  – Improving virologic suppression
  – Decreasing transmission to others
HIV among those > 50 years of age
New York City, 2012

- Living with HIV/AIDS
  - 48,777 (47%) of 104,690
- Newly Diagnosed with HIV during 2012
  - 441 (17%) of 2,585
- Late Diagnosis (AIDS at dx or within 1 yr)
  - 203 (29%) of 702

### Older Newly Diagnosed

- Heterosexual or unknown risk
- Advanced immunosuppression
- Hospitalized
- Cognitive Impairment
- Less knowledge about HIV
- Fewer social supports

**Newly Diagnosed HIV**

NYP/CUMC, 2006-2011, N=337

- > 50 yrs of age
  - 21% of total new diagnoses
  - 36% F 64% M
  - 47% heterosexual+
  - 75% ED/inpatient+
  - 69% AIDS+
  - Median CD4 of 97+
  - 43% no NYP visits 5 yrs

- < 50 yrs
  - 79% of total new diagnoses
  - 28% F 72% M
  - 35% heterosexual+
  - 51% ED/inpatient+
  - 39% had AIDS+
  - Median CD4 307+
  - 40% no NYP visits 5 yrs

* significant at p<0.01

Ellman, 2014

### Percentage of Persons Living with HIV/AIDS by Age in NYC, 2007-2011

<table>
<thead>
<tr>
<th>Year</th>
<th>50 and Older</th>
<th>13 - 49</th>
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<tbody>
<tr>
<td>2007</td>
<td>34%</td>
<td>44%</td>
</tr>
<tr>
<td>2008</td>
<td>37%</td>
<td>43%</td>
</tr>
<tr>
<td>2009</td>
<td>39%</td>
<td>45%</td>
</tr>
<tr>
<td>2010</td>
<td>41%</td>
<td>46%</td>
</tr>
<tr>
<td>2011</td>
<td>42%</td>
<td>58%</td>
</tr>
</tbody>
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The percentage of persons living with HIV/AIDS who were aged 50 and older increased between 2007 and 2011.

### Number of New HIV Diagnoses among Males by Age in NYC, 2007-2011

- Males 30-49
- Males 13-29
- Males 250

From 2007-2011, the largest decrease in the number of new diagnoses among males was seen in the 30-49 year old group.

### Number of New HIV Diagnoses among Females by Age in NYC, 2007-2011

- Females 30-49
- Females 13-29
- Females 250

New HIV diagnoses among females aged 13-29 and 30-49 declined from 2007-2011, while the number of new diagnoses among females 50+ was relatively stable.
Older Living with HIV

- HIV is treatable
  - Retained in care
  - On ARVs
  - Virologically suppressed?

Older Adults Living with HIV

- Increased aging-related comorbidities
  - Cardiovascular
  - Liver disease
  - Malignancies
    - NHL
    - Cervical
    - Anal
    - Lung
    - Diabetes mellitus
  - Renal disease
  - COPD
  - Obesity
  - Depression
  - HTN
  - Osteoporosis
  - Frailty

HIV & Accelerated Aging

- DNA is altered (epigenetics) via the methylation of cytosine resides as part of natural aging
- MACS cohort - MSM (+ and -)
- PBMC studied via methylation arrays
- Effects of HIV (14-15 yrs) on methylation are additive with the effects of aging
Implications for the Dental Setting

• Testing
  – Substantial numbers of undiagnosed pts exist
  – HIV testing generally accepted as cost effective down to a prevalence of 0.1%

• Care of Older HIV Infected Patients
  – Are your patients virologically suppressed?
  – What are their co-morbid conditions?
    • Are they “older” than chronologic age?