Are Older Adults with HIV Aging Differently?

Multimorbidity Management

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% Living with HIV in LA County 2010 2020 (Estimation)

38% + 25% + 10% = 72%
Estimates of the USA HIV Epidemic Causes for Increasing numbers of Non-AIDS

The Aging of the HIV Epidemic in the United States

CDC Surveillance Data

- Number of people living with HIV: 1.25 Million
  - Over age 50 in 2011: 37%
  - Over age 50 in 2015: 50%
  - Over age 50 in 2020: 70%
Today HIV Treating Providers Are Spending More Time Managing Non-AIDS Diseases

Multimorbidity is 2 or more chronic illnesses

Multimorbidity is THE RULE AND NOT THE EXCEPTION for the older adult living with HIV
Demographic and Clinical Characteristics of the 3,810 Patients at Baseline, Stratified by Age, the HIV Outpatient Study, 2006–2010

THE COMPLICATION OF SUCCESS

Many Age-Associated Diseases are More Common in Treated HIV Patients than in Age-Matched Uninfected Persons

- Cardiovascular disease
- Cancers
- Bone Fractures; Osteopenia
- Liver Failure
- Kidney Failure
- Frailty
- Cognitive Dysfunction
- Hearing Loss & Macular Degeneration
WHY?

From initial HIV infection there is a cascade of inflammation that occurs.

It is not stopped but only blunted by HIV treatment.
Inflammation
↑ Monocyte activation
↑ T cell activation
Dyslipidemia
Hypercoagulation

HIV-associated fat Metabolic syndrome

CMV
Excess pathogens

Loss of regulatory cells

Co-morbidities
Aging

HIV production
HIV replication

Microbial translocation
Inflammation predicts disease risk in those on ART and in the general population

- **Cardiovascular Disease** (Baker, CROI 2013)
- **Lymphoma** (Breen, Cancer Epi Bio Prev, 2010)
- **Venous Thromboembolism** (Musselwhite, AIDS, 2011)
- **Type II Diabetes** (Brown, Diabetes Care, 2010)
- **Cognitive Dysfunction** (Burdo AIDS 2012)
- **Frailty** (Erlandson, JID 2013)
% Number of Comorbid Illnesses 0-6+ for Each Person: ROAH HIV + vs USA (NHANES) Age 50+ (2006)

Submitted ACRIA 2016 Ambroziak, A…Karpiak, S.E.
More multimorbidity at higher age in HIV

<table>
<thead>
<tr>
<th>Age Group</th>
<th>HIV-infected</th>
<th>HIV-uninfected</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-50</td>
<td>0.78</td>
<td>0.76</td>
</tr>
<tr>
<td>50-55</td>
<td>1.13</td>
<td>0.75</td>
</tr>
<tr>
<td>55-60</td>
<td>1.33</td>
<td>1.11</td>
</tr>
<tr>
<td>60-65</td>
<td>1.56</td>
<td>1.03</td>
</tr>
<tr>
<td>65+</td>
<td>1.93</td>
<td>1.51</td>
</tr>
</tbody>
</table>

Number of participants:
- HIV-infected: 187, 129, 100, 59, 58
- HIV-uninfected: 197, 129, 84, 66, 41

Are Older Adults with HIV Aging Differently?

Are they experiencing accelerated aging?
Are these age-related chronic conditions just **Accentuated** or/and/not **Accelerated**?

**Accelerated risk** Condition occurs more often and at younger age among those with HIV than among HIV-uninfected comparators

**Accentuated risk** Condition occurs at the same age but more often in those with HIV than among HIV-uninfected comparators

Shiels MS. Age at Cancer Diagnosis among persons with AIDS in the US. Ann Intern Med 2010
Non-HIV RISK Factors that Characterize HIV Older Adults

All Can contribute to Multimorbidity

- Smoking (50-65%)
- History of Substance Use
- Poor Diet/Food Scarcity
- No Exercise
- 1/3 Co-infected with HepC
- Minimal Alcohol Use is Detrimental
- Stress from Chronic Depression
- Low Socio Economic Status/Resource
- Stigma Induced Social Isolation
- Not working
- Long Term Opioid Use
Patient Factors

Non-Modifiable
- Age
- Sex
- Genes

Modifiable
- Weight
- Smoking
- Alcohol
- Illicit Drugs
- Exercise
- Diet
- Adherence to ART
**ROAH: Co-occurrence of Substance Use and Behavioral Health Issues**

<table>
<thead>
<tr>
<th>Recovery Status</th>
<th>%</th>
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<tbody>
<tr>
<td>Ever enrolled in 12-step</td>
<td>62</td>
</tr>
<tr>
<td>Currently in recovery</td>
<td>54</td>
</tr>
<tr>
<td>No substance use in past 3 months</td>
<td>48</td>
</tr>
<tr>
<td>In recovery for more than 1 year</td>
<td>44</td>
</tr>
</tbody>
</table>
Substance Use Older PLWH

- Alcohol
- Marijuana
- Pain Killers
- Cocaine
- Crack
- Heroin
- Poppers
- LSD/PCP
- Crys Meth
- Ecstasy
- Ketamine
- GHB

ROAH data – Karpiak et al. 2007
Depression in ROAH vs. Other Older Adults

Figure 2  Comparison of Average CES-D Scores among Middle-age and Older Adults who are Community-dwelling, Visually-Impaired, or Living with HIV in ROAH. Data on Community-dwelling adults and visually impaired adults were obtained from Gump et al. (2005) and Horowitz et al. (2006), respectively.
Proportion Living Alone:
ROAH vs. Community-Dwelling NYC Elderly

ROAH
HIV/AIDS
70%

NYC Elderly 65+
39%

Need for Multimorbidity Management
This multimorbidity contributes to overlapping injury to multiple organ systems (Justice 2010; Deeks & Phillips 2009).

The result is the transformation of HIV infection into a complex chronic disease associated with multimorbidity requiring the attention and expertise of multiple health care domains and their providers (Sevick et al. 2007).
Geriatric Care Principles

- Patient-Centered Care
- Social Supports
- Patient Involvement in Care Decisions
- Polypharmacy
- Integrated Care
During five-year period, % of patients prescribed at least one ARV/non-ARV combination that was contraindicated or had moderate or high evidence of interaction (N=1,534)

Grand Opening: The Go-To Place On HIV And Aging
Editorial February 5, 2014 3 Comments

In the U.S. the HIV population is aging. By 2015 half of the over 1.4 million people infected with HIV will be age 50 and older. Each day 80 more people become part of this older adult group. And, 1 in every 6 new HIV diagnoses occurs in the age 50 and older population. This graying of... Continue Reading

Card For Clinicians Caring For HIV-Infected Older Adults
Science Spotlight February 5, 2014

CARD FOR CLINICIANS CARING FOR HIV-INFECTED OLDER ADULTS The Quick Reference Card for Managing Older Adults with HIV was developed out of the New York State Dept. of Health AIDS Institute Office Of The Medical Director. To obtain a copy, access www.hivguidelines.org. The AIDS Institute determined HIV and Aging as a priority over ten years ago. The number... Continue Reading
First Guide for Older Adults With HIV

Go to www.ACRIA.org or www.HIV-AGE.org
RESEARCH on OLDER ADULTS with HIV

N=1000 NYC HIV+ Older Adults

Demographics
Sexual Behavior
Social Networks
Psychological Well-Being
Distress – Depression
HIV Status/Health
Religiousness & Spirituality
Loneliness Among Older Adults
HIV Stigma and Disclosure
ROAH 2.0: Focus Groups (N=105)
New York City, San Francisco, Oakland and....

- Spanish Speaking Only
- Heterosexual Men & Women
- Women (NYC & Oakland)
- Transgender
- Long Term Survivors
- Gay Identified

ROAH SURVEY
N=2500
ROAH 2.0
Multi-Site Effort: All Data Stored in RedCap

- Bay Area
  - San Francisco and Oakland
  - N=400
- New York State
  - Small Urban Rural
  - N=400
- Los Angeles
  - N=400
- Palm Springs
  - N=300
- Minneapolis
  - N=300
- New York City
  - Cornell Medical
  - HIV and Geriatrics
  - N=500
- New York City
  - N=500
- Atlanta
  - N=300
- Baltimore D.C.
  - Older Women
  - N=300

- MAC AIDS Fnd
- NY Trust
- Gilead Pharm
- NYS AIDS Inst
- State of CA
- City of San Francisco
- Ryan White
- ACRIA
Conclusions

- With the aging HIV population, multi-morbidity is increasingly common.
- Multi-morbidity will have profound effects on lifespan and health-span in older HIV-infected persons.
- Interventions and infrastructure will be needed to prevent and treat multi-morbid conditions and their consequences.
Thank you.....

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