The Intersect of Aging & HIV Infection

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Case #1

- 85 y/o male referred to Infectious Diseases Clinic for + syphilis test (RPR) and dementia
- History of syphilis and gonorrhea about 50 years prior, unsure of treatment
- Currently sexually active with his girlfriend, does not use condoms
- Prior HIV testing: "What is HIV?"

Case #2

- 54 y/o female taken to the ED after turning blue on a flight
  - Extensive prior work-up for infectious cause of anemia, fatigue, and recurrent pneumonia
- Rapid HIV +
- CD4 count 0
- Diagnosed with AIDS and pneumocystis pneumonia

Case #3

- 65 year old male with HIV for many years
- Medical History:
  - Diabetes, CAD s/p multiple stents, prior stroke, HTN, hyperlipidemia, chronic kidney disease, prostate cancer s/p resection and radiation, chronic pain, arthritis, folate deficiency, anemia, sleep apnea, multiple non-melanoma skin cancers, allergies
- Medications: include about 20, but able to give the list and timing of all

Case #4

- 68 year old male diagnosed with HIV ~ 2 years ago during a transplant evaluation
  - presents for a routine visit accompanied by his daughter
- Medical history:
  - Kidney disease on dialysis, CAD s/p CABG, diabetes on insulin, HTN, hyperlipidemia, partial foot amputation, recent septic knee, cataracts, COPD, dementia, urinary incontinence
  - Uses scooter for transportation
  - Recent weight loss
  - Medications: unsure, wife administers

Case #4

- Patient: No concerns, doing great. Why am I here? (forgot he had HIV)
- Daughter: Concerns that Dad…

… drove into a “Road Closed” sign because he “didn’t see it”

…left the burner on while home and a pan caught on fire

…has fallen at least 3 times since his visit 6 weeks ago

HIV in Older Adults

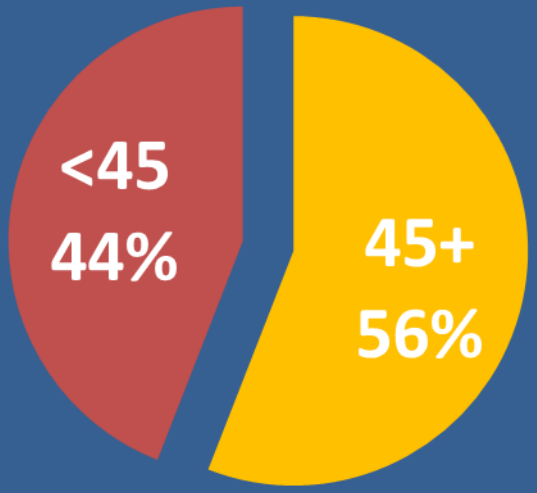
- #1 Lack of knowledge of HIV among older adults
- #2 Underestimation of HIV risk by providers
- #3 Impact of HIV, antiretroviral therapy, lifestyle on “normal” aging processes
- #4 Emergence of “geriatric syndromes” and associated care issues in the HIV clinic

Objectives

- Demonstrate that persons aging with HIV-infection may have an early occurrence of several “normal” diseases associated with aging
- Describe geriatric syndromes and the need to broaden our focus of care
  - Support with data from a cohort of 45-65 year old patients on ART for a minimum of 6 months who participated in a study in the IDGP Clinic
- Considerations for the future

The "Graying" of HIV

- 15% of **new** HIV diagnoses in Colorado are in persons age 50+
- 44% of people **living with** HIV in Colorado are 50+



Ages of HIV-infected patients seen at University of Colorado HIV Clinic (11/2012-10/2011)

http://www.cdphe.state.co.us/dc/HIVandSTD/stats/HIV.AIDS.3Q11.pdf

The HIV and Aging Consensus Project

Recommended Treatment Strategies for Clinicians Managing Older Patients with HIV

Sponsored by

American Academy of HIV Medicine

AIDS Community Research Initiative of America

Supporting Partner:

American Geriatrics Society

www.aahivm.org/hivandagingforum

Impact of HIV, ART, & lifestyle on "normal aging"

Premature or accelerated:

- Cardiovascular diseases
- Diabetes/metabolic syndrome
- Hypertension
- Kidney disease
- Emphysema
- Osteoporosis
- Non-HIV related cancers
- Liver disease
- Dementia

Persons with HIV have higher rates of cardiovascular disease & related risks

- Vessels appear ~ 15 years "older" compared to HIV-uninfected
- CVD is one of the most common causes of death and one of the most common non-AIDS events
  - Much higher risk among HIV-infected persons ≥ 65 compared to 50-64 years (HR 5.89; 95% CI 2.2-16.0)

Guaraldi, et al. Clin Infect Dis 2009; 49: 1756-62.
Hasse, et al. Clin Infect Dis 2011; 53: 1130-9.
ART Cohort. Clin Infect Disease 2010; 50: 1387-96

Persons with HIV have higher rates of cardiovascular disease & related risks

- Compared to HIV-uninfected persons, those with *HIV had more*:
  - Hypertension (**21.2 vs 15.9**%)
  - Diabetes (**11.5 vs 6.6**%)
  - Lipid abnormalities (**23.3% vs 17.6**%)
  - **1.75**x greater risk of a heart attack AFTER adjusting for risk factors

Triant, et al. J Clin Endocrinol Metab 2007; 92: 2506-12

Cardiovascular disease & related risks in the IDGP

Characteristic	N= 359 (%)
Current smoker	123 (34%)
Hypertension	148 (41%)
Diabetes	37 (10%)
Cardiovascular disease	27 (8%)
Stroke	12 (3%)
Medications	
ACE-inhibitor or ARB	103 (29%)
Statin	98 (27%)
Diuretic	64 (18%)
B-blocker	42 (12%)
Fibrate	51 (14%)
Insulin	14 (4%)
Metformin	21 (6%)

Persons with HIV have higher rates of kidney disease

- Etiology:
  - HIV itself (improvement with ART)
  - Hepatitis B & C
  - ART (atazanavir, indinavir, tenofovir)
- Advanced kidney disease in 30% and subclinical pathology in another 50% of ART-experienced persons with HIV/AIDS
  - Associated with age & female gender

- IDGP 45-65 years old on ART:
  - 5 on hemodialysis (0 transplant)
  - 81/174 (47%) had at least trace protein in urine
  - 43/354 (12%) Stage 3 kidney disease*

Wyatt, et al. Kidney International 2009; 75: 428-34.
*estimated glomerular filtration <60mL/min by Cockcroft-Gault

Persons with HIV have higher rates of chronic obstructive pulmonary disease (COPD)

- Independent of smoking, drug abuse, prior opportunistic infections
- Presents at younger ages
- Sample of 167 HIV-infected persons (median age of 46, CD4 count 479) underwent pulmonary function testing
  - ~ 65% abnormal
- IDGP Study:
  - 8% asthma, 5% COPD, 2% on home oxygen

Crothers, et al. Chest 2006; 130: 1326-33.
Crothers, et al. Am J Resp Crit Care Med 2011; 183: 388-95.
Gingo, et al. Am J Resp Crit Care Med 2010; 182: 790-6.

Persons with HIV have higher rates of osteoporosis and fractures

- Osteoporosis 3x more likely
- Fracture risk 30-70% higher in HIV-infected persons
- IDGP 45-65 years old on ART:
  - 11% fracture following minimal trauma
  - 5% diagnosed with osteopenia/osteoporosis
  - 2.5% on bisphosphonate
  - Subset of 80 subjects: 45% osteopenia or osteoporosis

McComsey, et al. Clin Infect Dis 2011; 51: 937-46.
Womack, et al. PLoS One 2011; 6: 17217.
Young, et al. Clin Infect Dis 2011; 52: 1061-8.

Broadening our focus to a geriatric model of care

- American Geriatrics Society:
  - "Health care for older adults focuses on **function**, which covers the physical, cognitive/mental, psychological, and social aspects of a person's life".
- Functional capacity
  - "Capability of performing tasks and activities that people find necessary or desirable in their lives"
  - Dependent on the person and the environment

Broadening our focus to a geriatric model of care

- Multi-morbidity
- Polypharmacy
- ***FUNCTION***
- Disability/frailty
- Falls
- Activities of daily living (cooking, finances, medication administration, etc)
- Cognitive function/depression
- Incontinence
- Driving safety
- Advance directives

Multi-morbidity and polypharmacy are common among middle-aged persons aging with HIV

- Medical problems: average 2.9
- Medications: average of 4.7 *in addition* to ART
  - < 1% of our cohort are taking only ART
- Potential for drug-drug interactions and side effects increase with age

Impact of multi-morbidity & polypharmacy on falls

- Falls are costly and associated with increased emergency room visits, placement in skilled nursing facilities, and loss of independence
- 30% of IDGP cohort with ≥ 1 fall during prior year (average age 52eyars)
- consistent with rates in uninfected persons ≥ 65 years of age

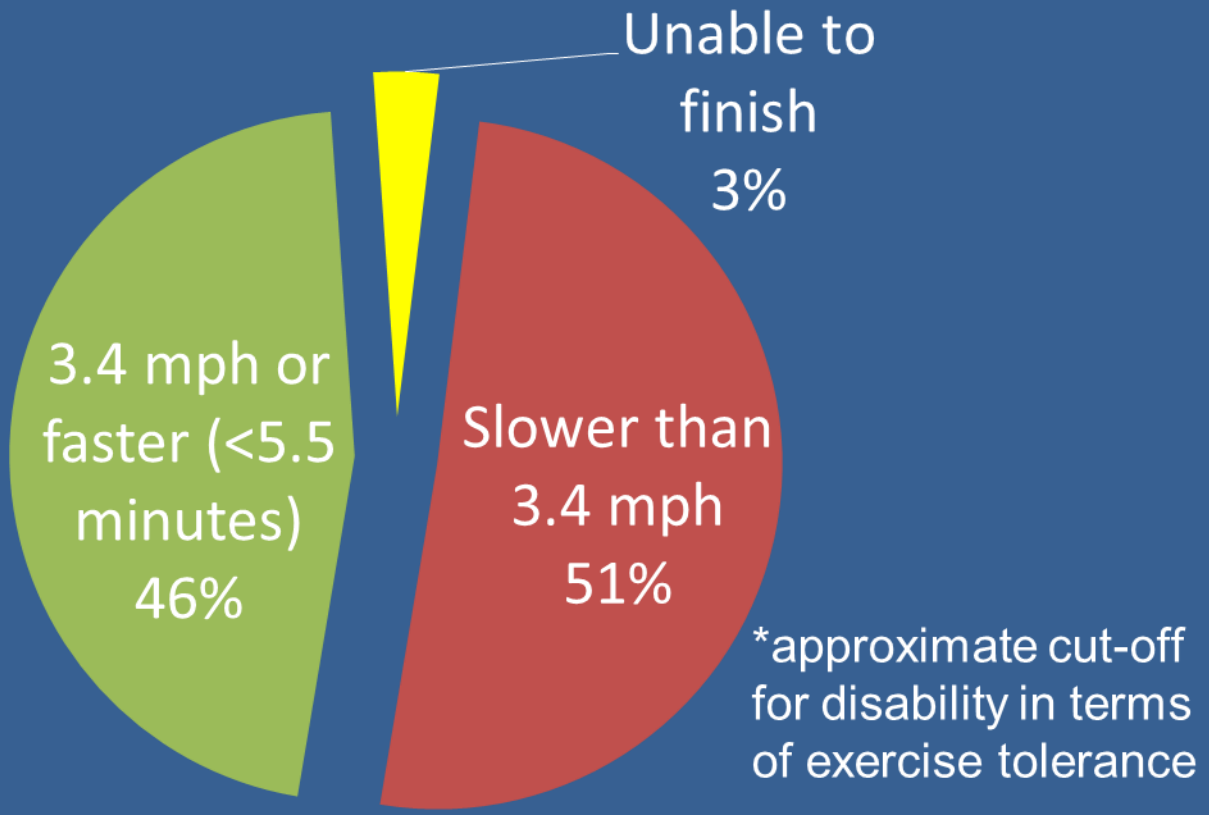
Erlandson KM, et al. Submitted 1/2012

What is the functional capacity of middle-aged HIV-infected persons?

- Frailty
  - weight loss, fatigue, weakness, low physical activity, slow speed
- Short Physical Performance Battery (SPPB)
  - Balance, walking speed, ability to stand up from a chair without using arms
- Findings:
  - 8% lowest function
  - 31-46% intermediate

Increased risk for hospitalization, nursing home placement, and death

400-m walk (~ ¼ mile)



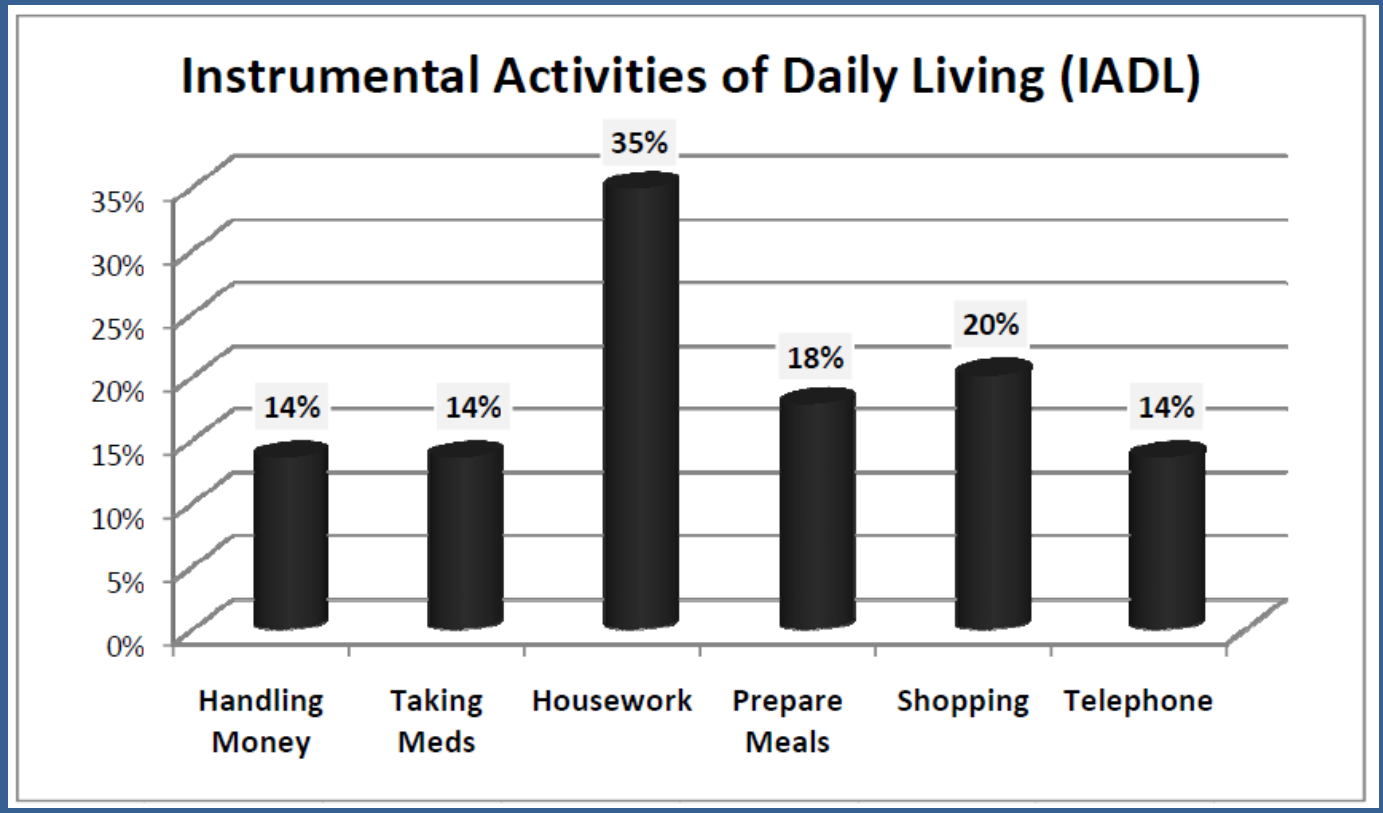
*Alexander NB, et al. J Gerontol A Biol Sci Med Sci **2003**;58:734-9.

Best predictors of low functional capacity

- **Lack of physical activity**
- Unemployment
- Recent hospitalizations
- Higher # of comorbidities & medications
- Psychiatric disease
- Chronic pain
- Arthritis
- Poor quality of life

The impact of declining functional status on activities of daily living

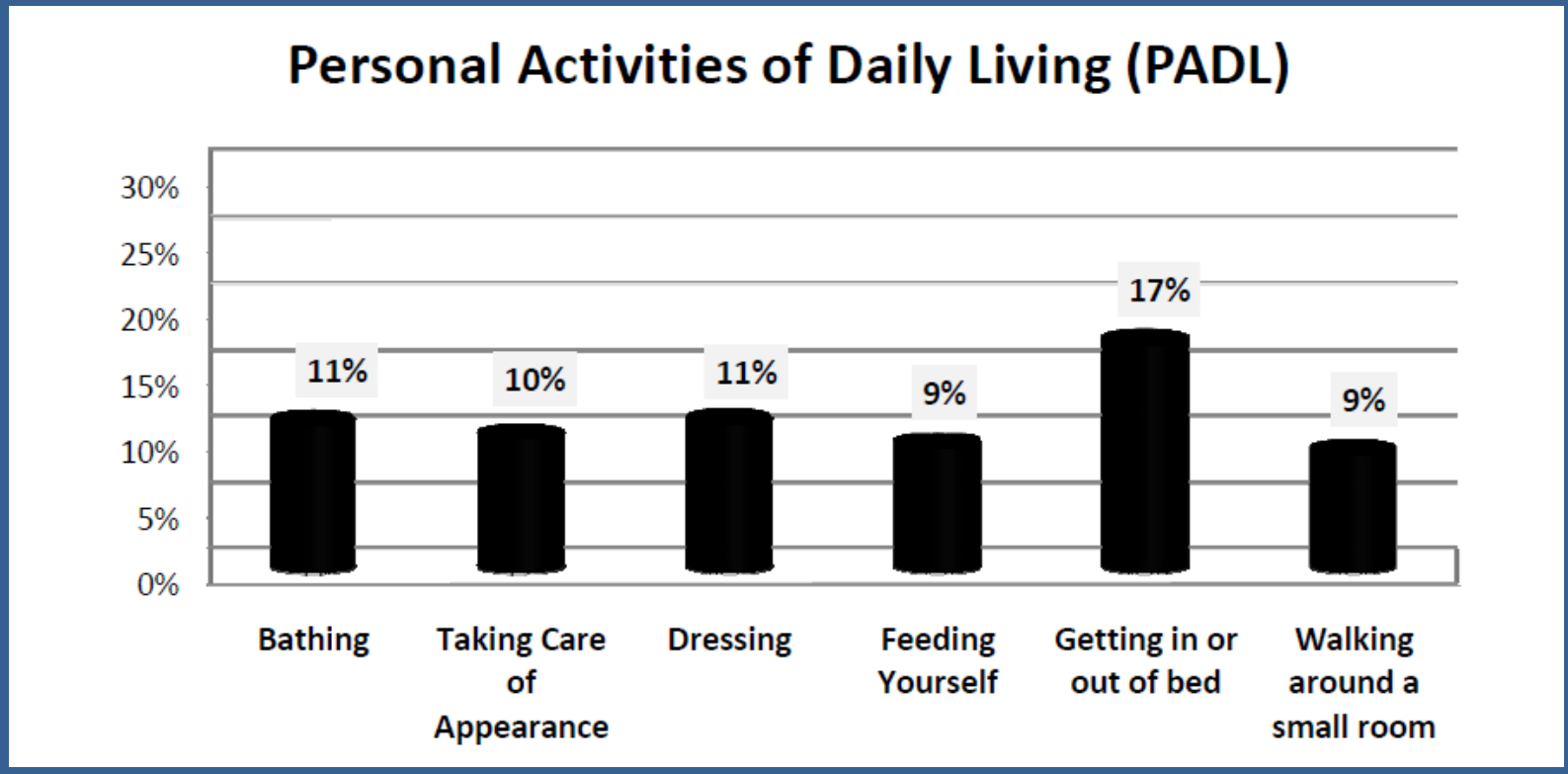
- Survey of 180 HIV+ clients accessing the Gay Men's Crisis Center in NYC; age 50 or older (60% 50-55 years)



http://www.acria.org/files/GMHCFinal.pdf

The impact of declining functional status on need for assistance in basic needs

- 19% currently require caregiver assistance
- 19% previously required caregiver assistance



http://www.acria.org/files/GMHCFinal.pdf

Identified barriers to accessing care

Service Barrier	Total %
Access Barriers	
Don't Think Services are Available Locally	**55.2**
* Don't Know Where to Go for Services	**57.3**
Would have to Wait Too Long for Services	**53.6**
Unable to Afford Services	**51.7**
Unable to Receive Free Services	**55.9**
Process of Getting Services Too Confusing or Difficult	**48.0**
*** Hard to Get There (Transportation)	**32.2**

http://www.acria.org/files/GMHCFinal.pdf

Summary

- Persons aging with HIV infection may experience an increased rate/early occurrence of many comorbidities
- These comorbidities in addition to social factors, lack of physical activity, and other lifestyle factors may lead to earlier than anticipated functional decline and emergence of geriatric syndromes

Summary

- Care for persons aging with HIV should be multi-faceted
  1) *Appropriate management of comorbidities*
  2) Prevention of functional decline & maintenance of independence
     - Exercise
     - Nutrition
  3) Identify those at risk of functional decline
     - Questionnaire or provider evaluation

Summary

4) Reduce falls/fall risk
   - Ask about falls
   - Exercise and/or balance training
   - Review meds
   - Home evaluation (shower rails, stairs, lighting, loose rugs, cords, telephone access)

Summary

5) Enhancement/coordination of community resources
   - Assistance in accessing resources
   - Arranging transportation
   - Senior centers, day programs
   - Meal programs
6) Strengthening social networks
7) Anticipating future needs
   - What resources are currently available? What is needed to keep those aging with HIV independent?
   - Home health, assisted living, skilled care

Questions & Comments

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