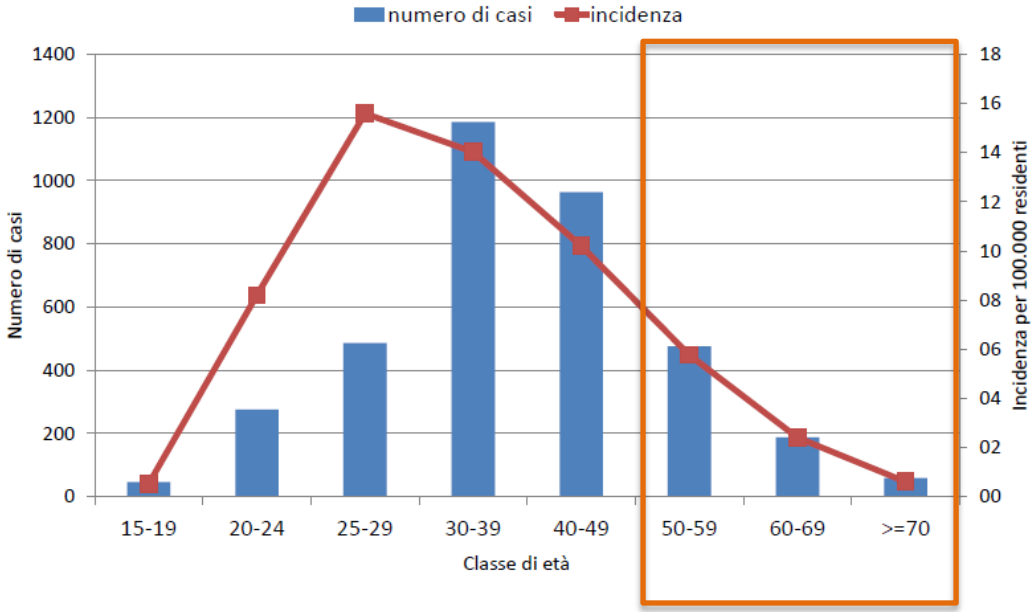
Ageing with HIV

Moderator: Georg Behrens, Germany

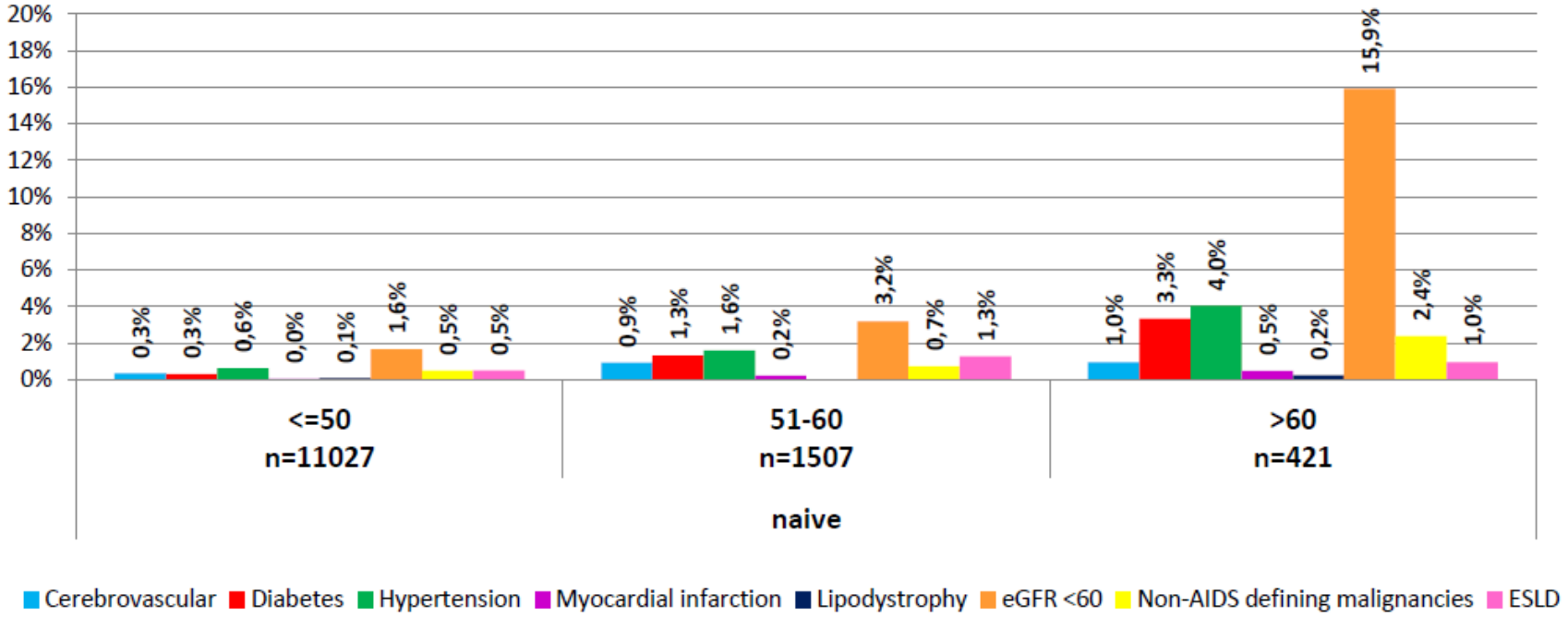
Silvia Nozza, Italy
Adrian Curran, Spain

Italian Data from ISS



- In 2015 in Italy 650 new HIV infections occurred in people more than 50 years old
- Most of them are heterosexual

Prevalence of different non-AIDS related co-morbidities at different age strata in naive patients



Pt G-C

- Male, born in 1949
- IVDU
- 1989: diagnosis of HIV infection
- 1999: neurotoxoplasomis, neurological sequelae (right emiparesis)

- 1999: First ART AZT+3TC+SQV/RTV
- Drop out (poor adherence and prison) until 2008
- Different ART combinations PI/based
- Genotypes performed during STI (wild type virus)

- 2008: TDF+FTC+DRV/r 800/100 mg

GEPPO Italian cohort

Geriatric Patients living with HIV/AIDS

geppo cohort
GEriatric Patiens living with HIV/AIDS
a Prospective multidisciplinary cOhort

HIV Drug Therapy 2016 GLASGOW

Guaraldi G *et al.* **P158**; HIV Drug Therapy 2016
Nozza S *et al.* **P163** HIV Drug Therapy 2016

Aim of the Cohort

- To describe
  - Multimorbidity (MM)
  - Polypharmacy (PP)
  - Antiretrovirals'use (ARV)

in elderly patients living with HIV

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Material and Methods

- Retrospective
- HIV-positive subjects aged **≥65 years** and currently on care were included
- HIV negative subjects patients were age (±4 years) matched with patients attending an out-patient cardiovascular screening clinic in a University Geriatric Centre
- Demographic, therapeutic and clinical data were recorded
  - Patients were stratified according to the duration of HIV infection (>20, 10-20 and <10 years)
- Multimorbidity (MM) was defined as the presence of 3 or more non-infectious comorbidities
- Polypharmacy (PP) was defined as the presence of 5 or more drug compounds beyond ARVs
- Multivariate binary logistic regression models were generated Data are expressed as median values (interquartile range)

Demographics

	HIV+ (n=1323)	
	Mean (SD)[n]	P-Value
- F	16.86% [223]	<0.01
- M	83.14% [1100]	
Age median (ds)	71.3 (4.98)[1323]	0,293
- [65,69)	45.41% [599]	
- [70,74)	30.4% [401]	
- [75,Inf]	24.18% [319]	
Current smoker	25.05% [276]	<0.0001
BMI	25.86 (9.29)[973]	<0.01
HIV duration (years)	16.55 (7.5)[1302]	
<10 years	424 (33.11%)	
10-20 years	596 (46.5%)	
>20 years	261 (20%)	
CD4 Nadir	218.84 (175.77)[1231]	
Current CD4	641.31 (287.62)[1294]	
CD4 / CD8 median e SD	0.97 (1.42)[1077]	
Viral Load ≤ 40	94.07% [1078]	
Viral Load Undetecable	86.37% [963]	
HBV co-infection	9.6% [105]	
HCV co-infection	12.61% [147]	

24 Non-Caucasian HIV infected patients were excluded

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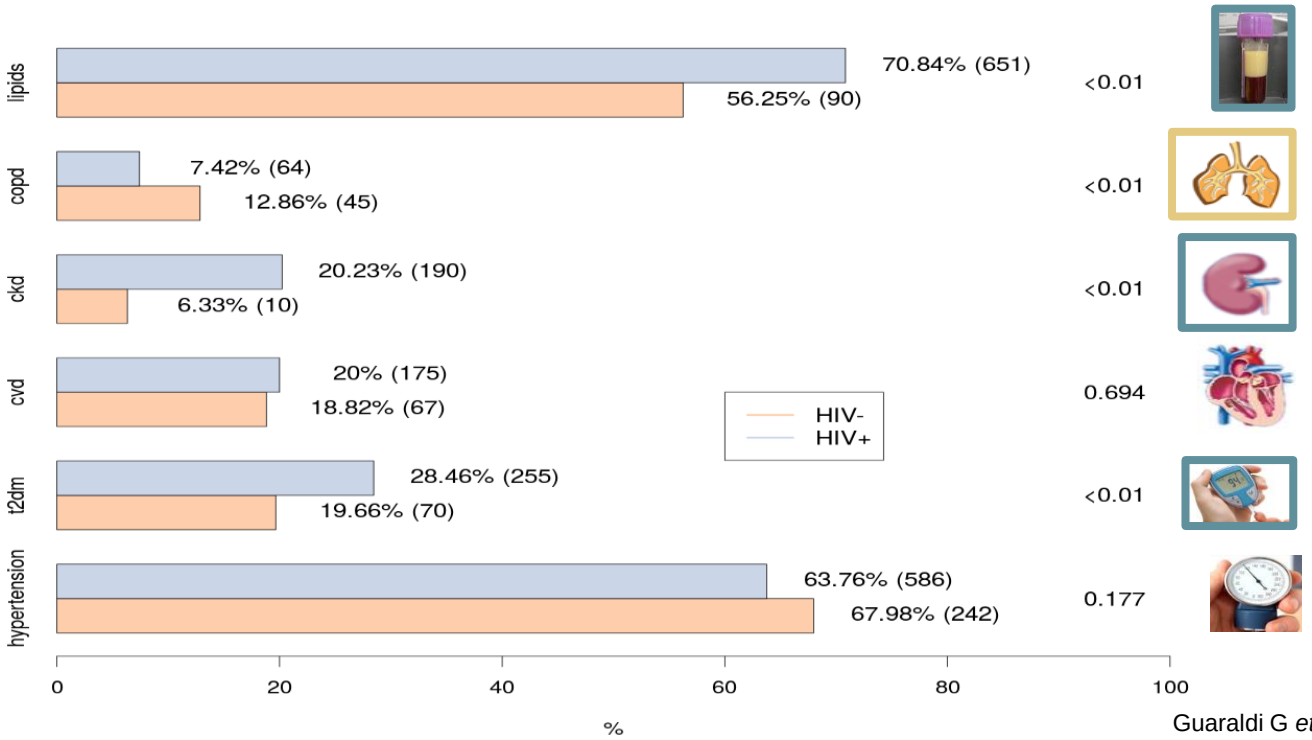
Nozza S *et al.* **P163** HIV Drug Therapy 2016

Co-morbidity



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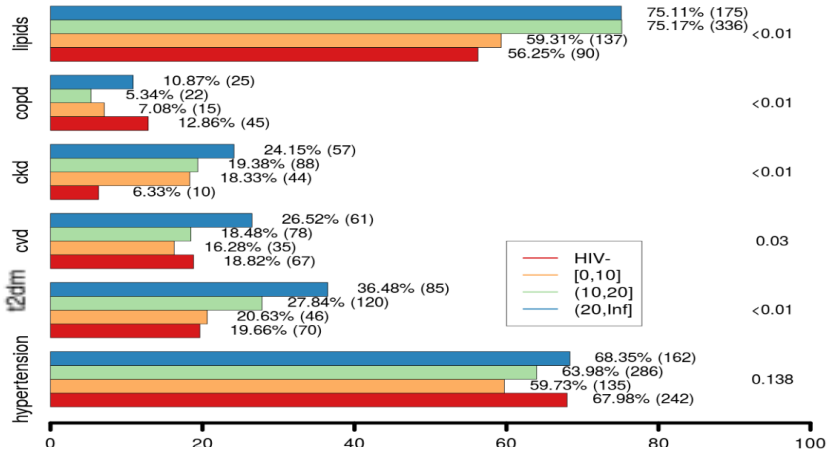
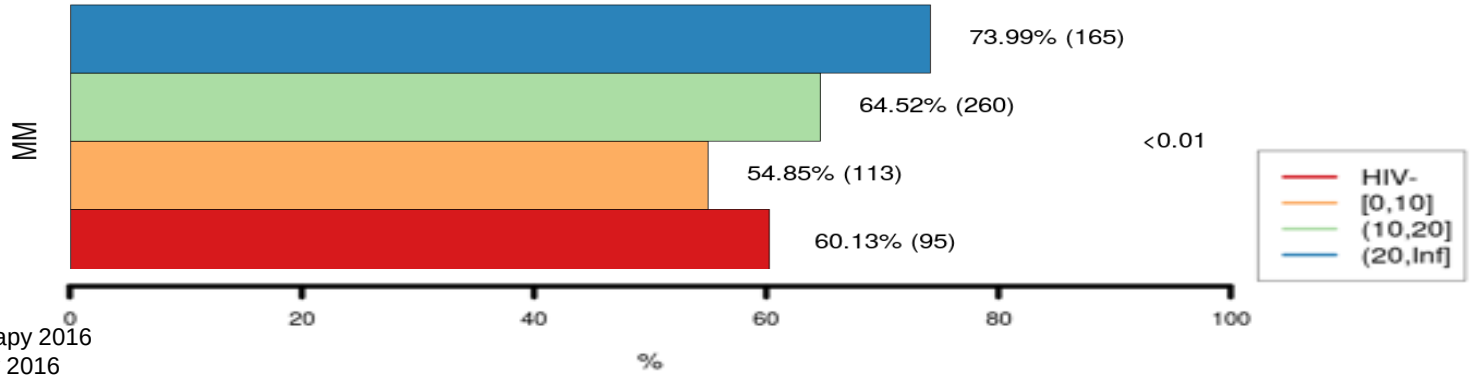
Nozza S *et al.* **P163** HIV Drug Therapy 2016

Pt G-C comorbidities

- 2009: osteoporosis
- 2009: hypetrigliceridemia
- 2009: hypercholesterolemia
- 2010: diabetes

Co-morbidity and Multy-Morbidity prevalence by duration of HIV infection





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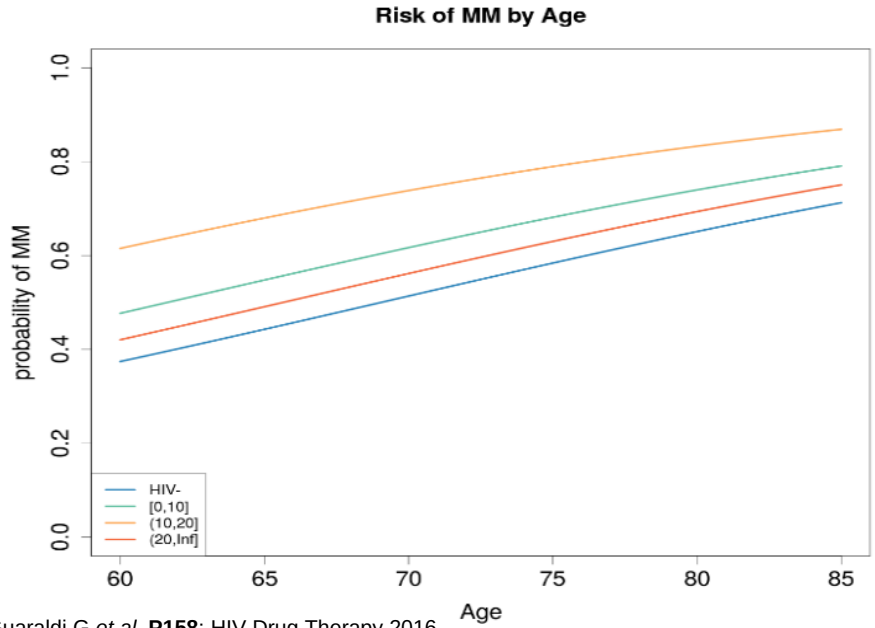

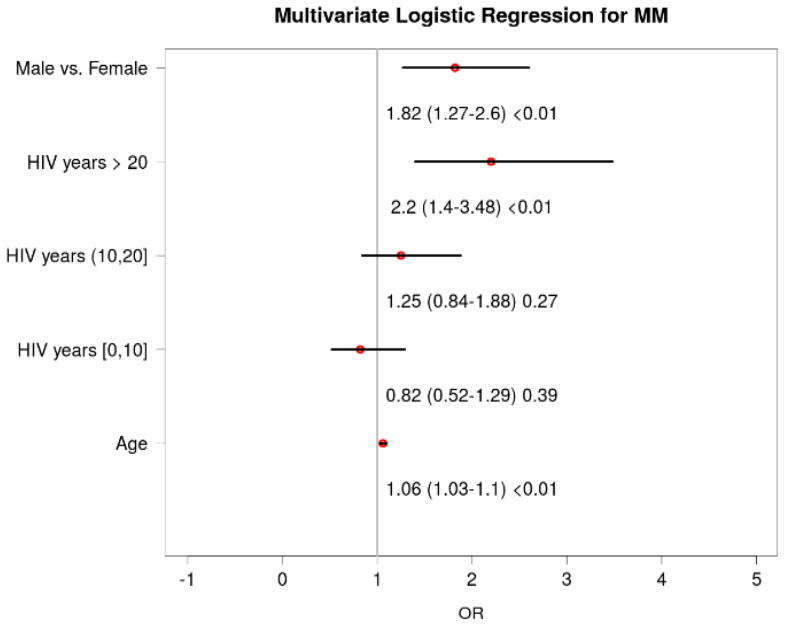

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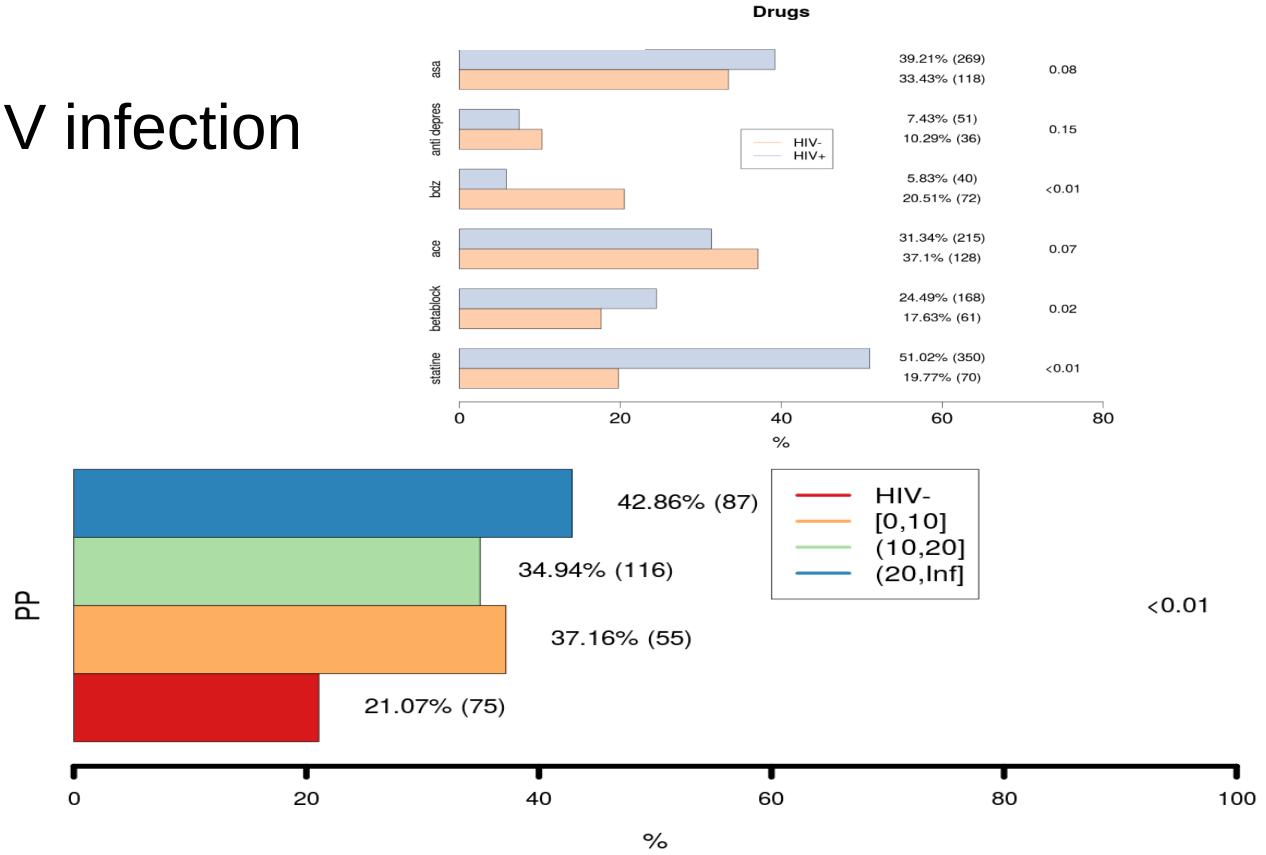
Poly-Pharmacy by duration of HIV infection



Guaraldi G *et al.* **P158**; HIV Drug Therapy 2016
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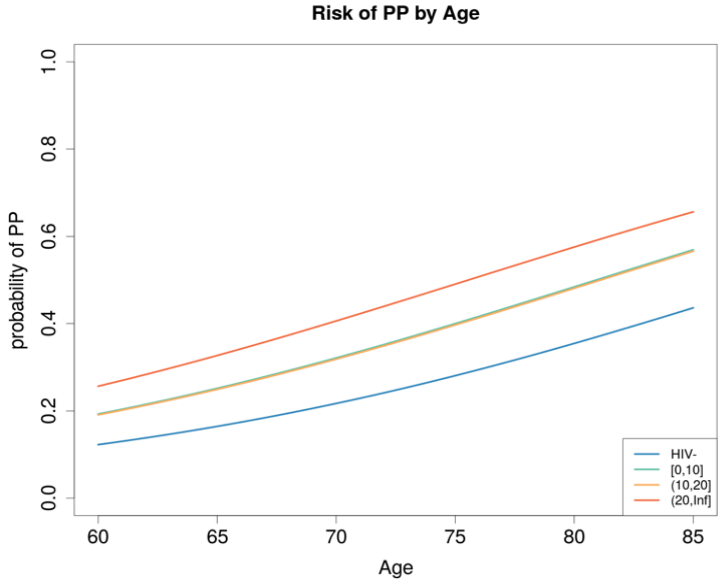
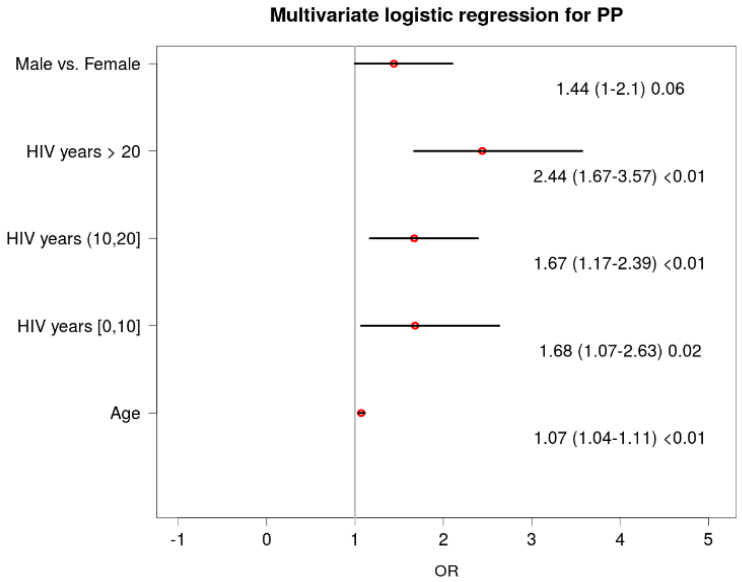
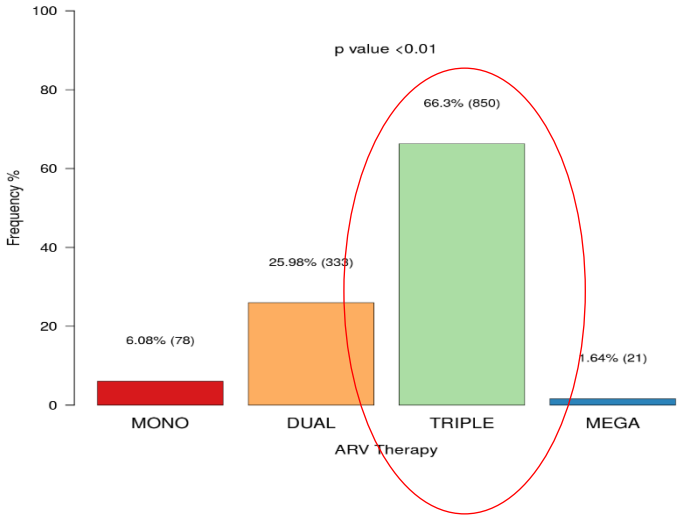




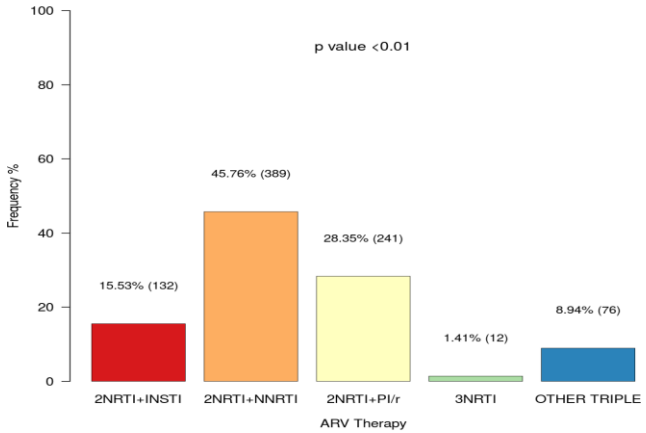
Guaraldi G *et al.* **P158**; HIV Drug Therapy 2016
Nozza S *et al.* **P163** HIV Drug Therapy 2016

Antiretroviral regimens and relationship with MM and PP

ARV strategy



3rd Drug

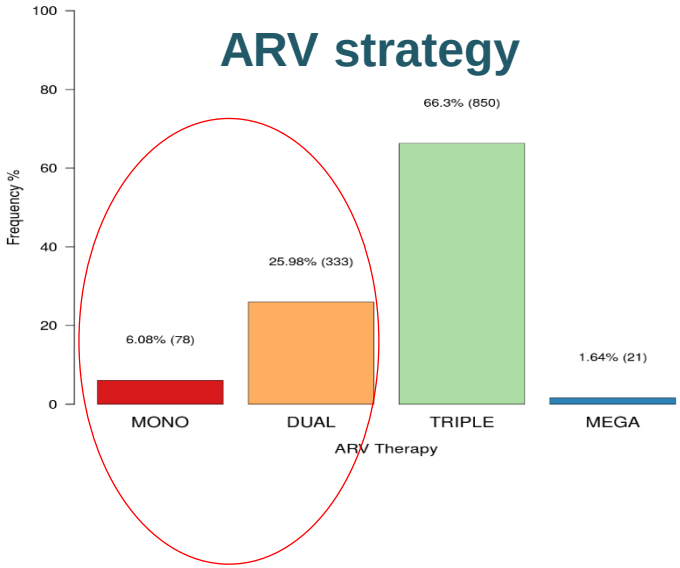


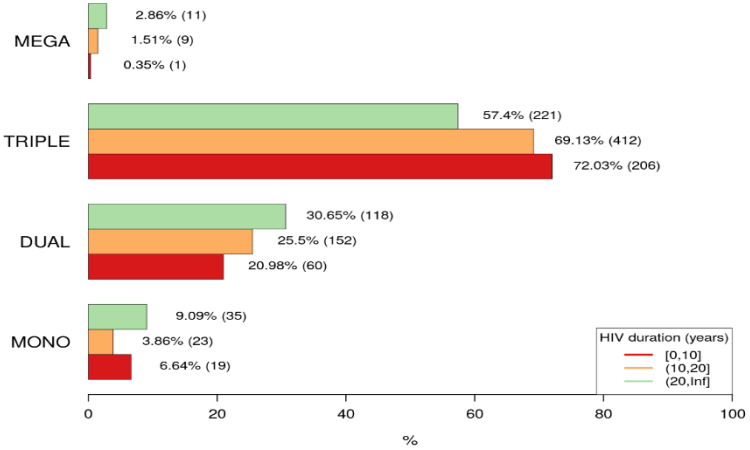
Guaraldi G *et al.* **P158**; HIV Drug Therapy 2016
Nozza S *et al.* **P163** HIV Drug Therapy 2016

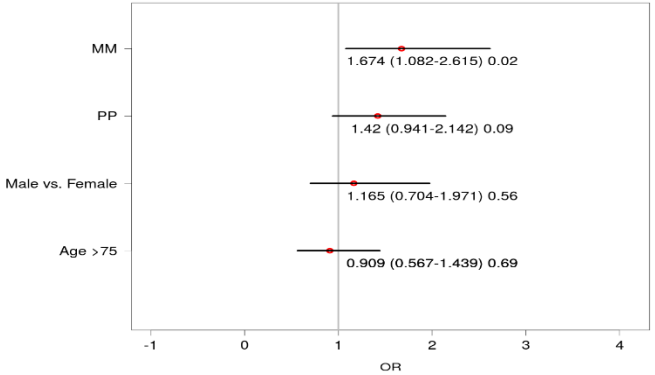
G.C. ART

- eGFR=69 mL/min/1.73 m^2
- Framingham score 25, ACC/AHA score 29
- To avoid TDF
- To avoid ABC

3TC+DRV/r

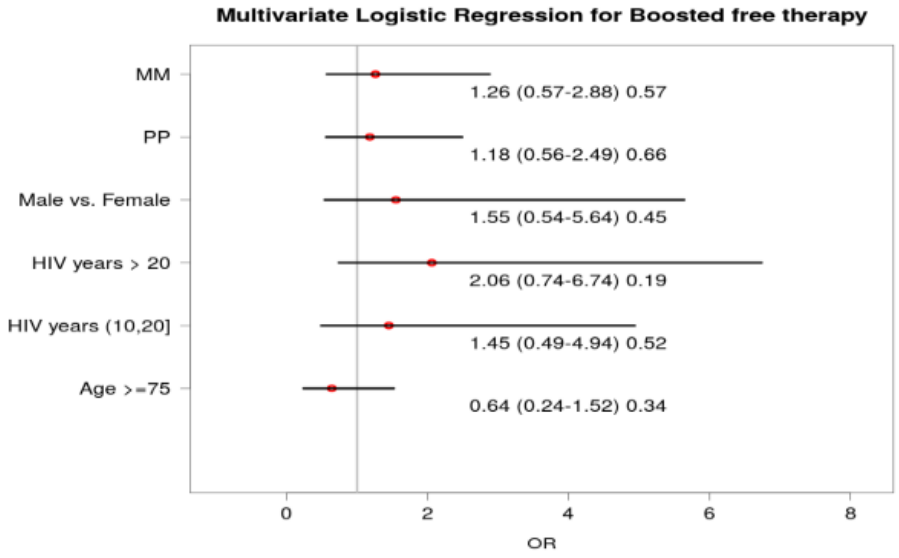


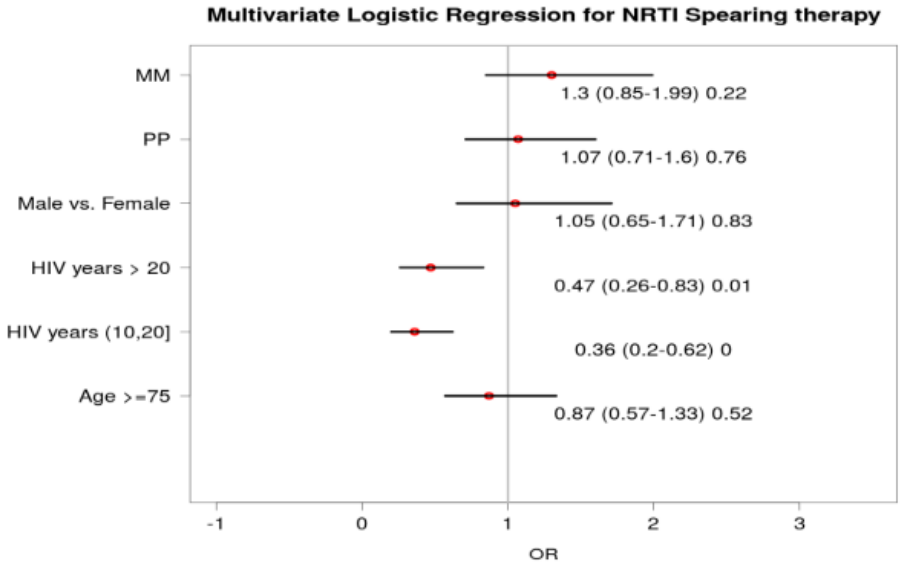




Guaraldi G *et al.* **P158**; HIV Drug Therapy 2016
Nozza S *et al.* **P163** HIV Drug Therapy 2016

Antiretroviral therapy





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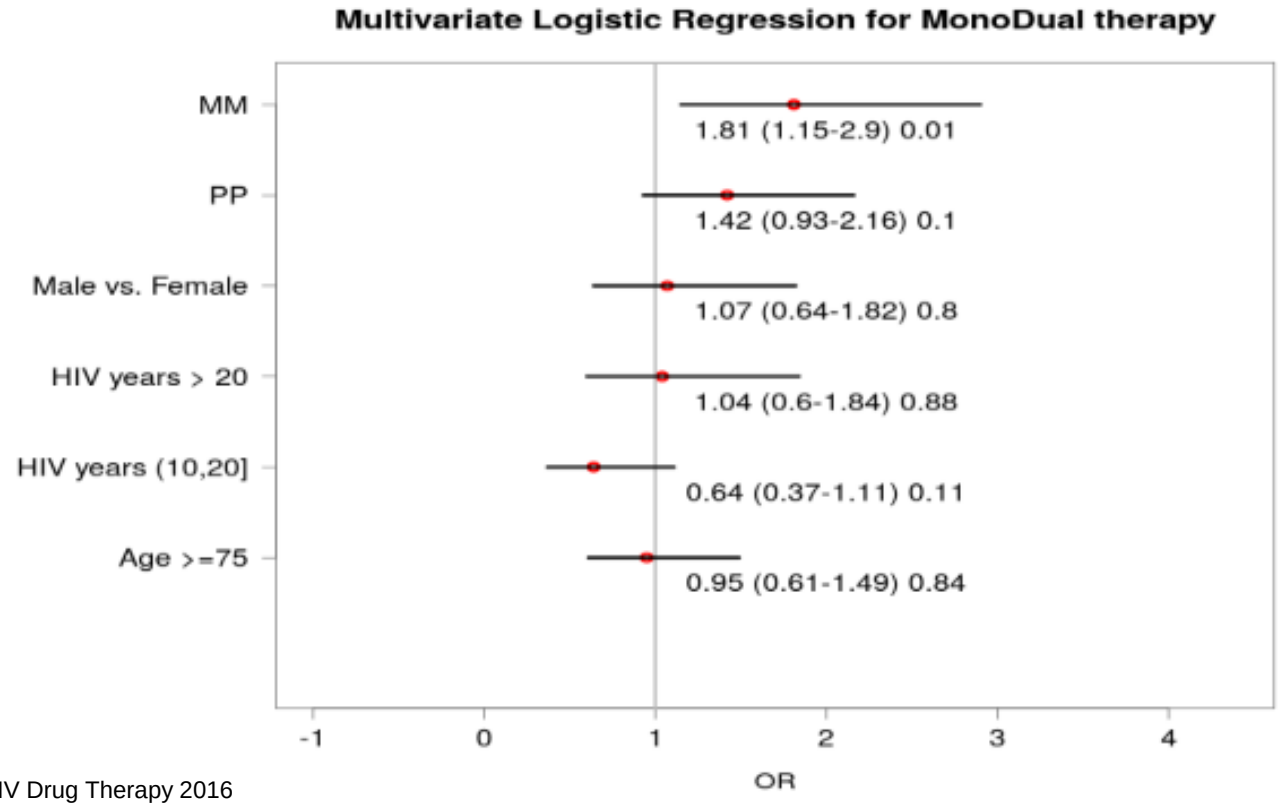
Nozza S *et al.* **P163** HIV Drug Therapy 2016



Guaraldi G *et al.* **P158**; HIV Drug Therapy 2016
Nozza S *et al.* **P163** HIV Drug Therapy 2016

Conclusions

- In this cohort both multi-morbidity and polypharmacy are function of HIV duration rather than age
- Elderly people living with HIV have higher burden of comorbidities than the general population
- A significant proportion of these patients are treated with non-conventional ARV regimens: the selection of ARVs seems to be driven by several factors including MM and PP

G.C.

- Metformina 1000 mg: 1 tb TID
- Fenofibrate 200 mg: 1 tb QD
- Rosuvastatine 20 mg: 1 tb QD
- Cardioaspirina 100 mg: 1 tb QD

Infection (2015) 43:509–522
DOI 10.1007/s15010-015-0795-5

REVIEW

Ageing with HIV: a multidisciplinary review

A. Calcagno[1] · S. Nozza[2] · C. Muss[3] · B. M. Celesia[4] · F. Carli[5] · S. Piconi[6] · G. V. De Socio[7] · A. M. Cattelan[8] · G. Orofino[9] · D. Ripamonti[10] · A. Riva[11] · G. Di Perri[1]

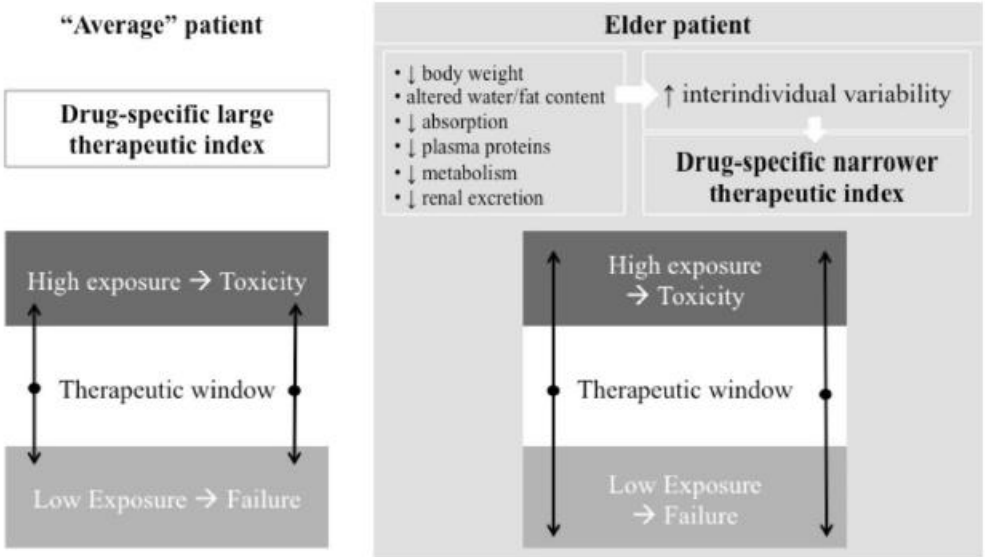


Fig. 1 Schematic representation of pharmacokinetic modifications in elder patients and the potential associated consequences. *Rounds* and *arrows* represent ideal average and range concentrations: in elderly patients a higher variability increases the chance of supra- or sub-therapeutic exposures

And now

- Left carotid stenosis (85%) and right carotid stenosis destra (70%)
- Surgical intervention
- CD4=301/mmc (21%)
- HIVRNA < 1 cp/mL

ART

- To continue dual therapy with 3TC+DRV/r
- To change PI: 3TC+ATV/r
- Triple therapy: TAF/FTC/EVG/c
- Dual therapy: 3TC+DTG

Clinical case. HIV journey

- Medical history: male, 67 year-old, osteoporosis, dyslipidemia, diabetes, carotid stenosis
- HIV history: CD4 301 (21%), RNA-VIH <1 c/mL
- ART with XXX…
- Concomitant Rx: Metformina 1000 mg/8 h, Fenofibrate 200 mg/24 h, Rosuvastatine 20 mg/24 h, AAS 100 mg/24 h

Now what??????

Clinical case. HIV journey

- **Now what??????**

  a. Follow him as any other HIV patient

  b. Follow him as any other HIV patient, asking the GP/other specialists to look after all co-morbidities & prevention

  c. Follow him for HIV AND all co-morbidities & prevention

Pros & Cons of centralizing care in HIV Units

Advantages

- Less visits for the patient (1 physician)
- No loss of information between physicians
- Lower risk of DDI
- Better control??

Limitations

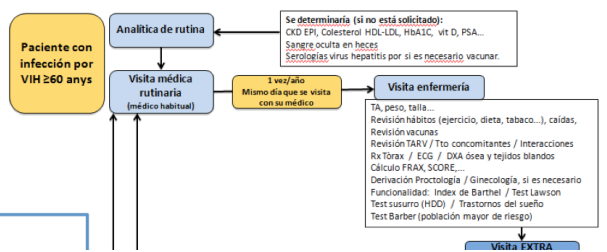
- Need for actualization in non-HIV fields
- Hospital care more expensive?
- More tests performed?
- Globally, more time per visit/more visits?
  - In an increasing HIV-population
  - In an older HIV-population

In an ideal world (no limitation of time or expenses), in the “older” HIV patients we should…

- Screen for & treat co-morbidities (pro-actively)
- Polypharmacy
- Specific vaccinations
- Evaluate non-medical aspects
  - Nutrition
  - Social
  - Functional
  - Frailty???
  - Others

The Can Ruti's "Over-60 Cohort" Example

Métodos



MÉDICO:

(adapt del cuestionario SERAD, 2007)
- Síntomas depresivos (Escala geriátrica de depresión, GDS, 1983)
- Calidad de vida (adapt MOS-VIH, 1991)
- Queja cognitiva (Simioni y col, 2010)
- Reserva cognitiva (CRC 2011)

FUNCIONAL/otros:
- Test funcional: Barthel y Lawson
- Test sensorial: HDD (oído), test visual
- Test nutricional
- Test de Pittsburgg
- Test Barber (personas de alto riesgo)
- Síndrome de fragilidad.

SOCIAL:
- Test OARS

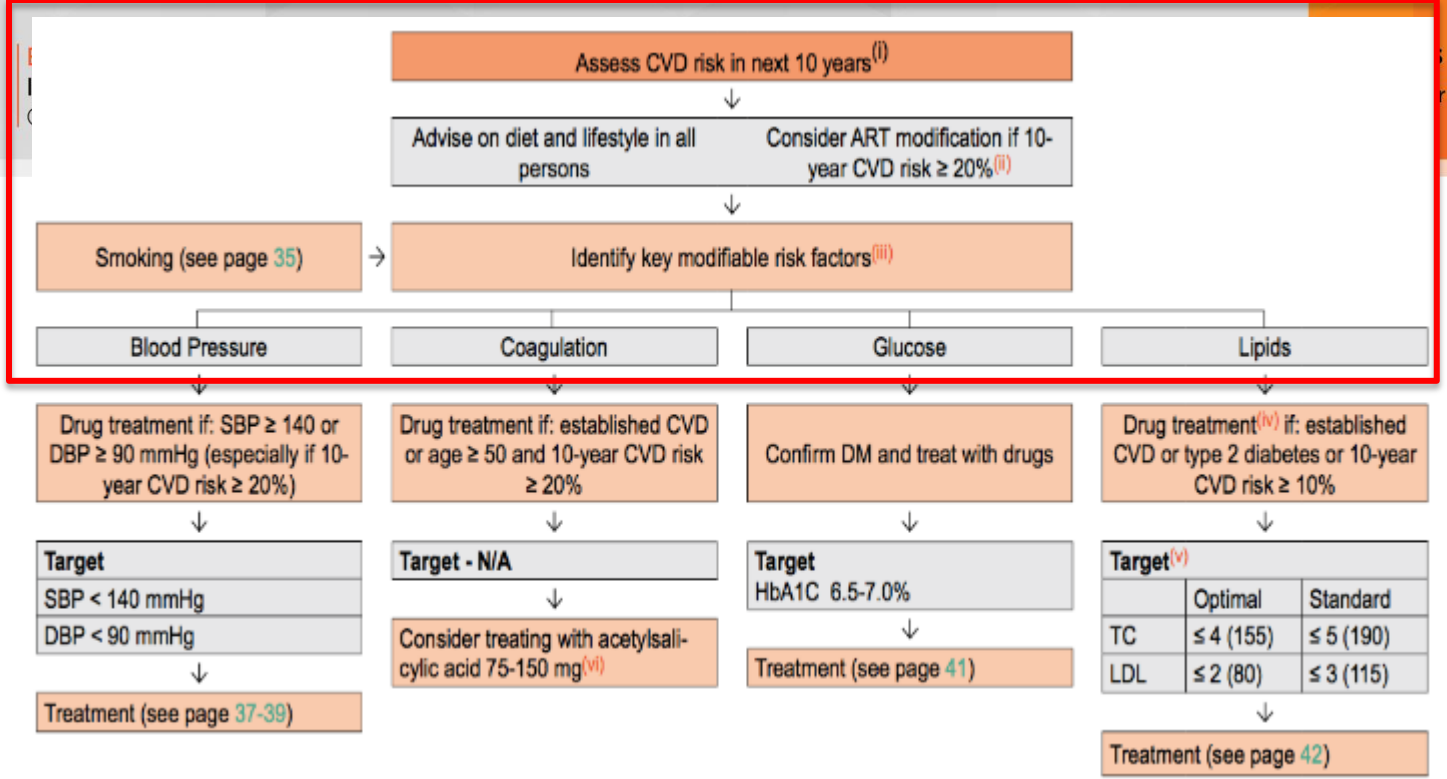
Otras evaluaciones:
- Densitometría ósea y de grasa total
- Electrocardiograma
- Rx tórax y columna lumbar

Caracterización inmunológica:
Activación inmune, inmunosenescencia y marcadores de inflamación.

In 15-20 minutes per patient???

Negredo E *et al. GeSIDA Conference San Sebastian* Dec 16. PO-36

SCREEN FOR CO-MORBIDITIES. CV RISK



i Use the Framingham equation or whatever system local National Guidance recommends; a risk equation developed from HIV populations is available: see http://www.chip.dk/Tools. This assessment and the associated considerations outlined in this figure should be repeated annually in all persons under care, see pages 5-6, to ensure that the various interventions are initiated in a timely way.

EACS Guidelines v 8.1. October 2016

Thompson-Paul AM *et al. Clin Infect Dis* 2016; 63: 1508-16

Screen for co-morbidities. CV Risk

- HIV considered as high CV risk subjects
- More aggressive treatment??

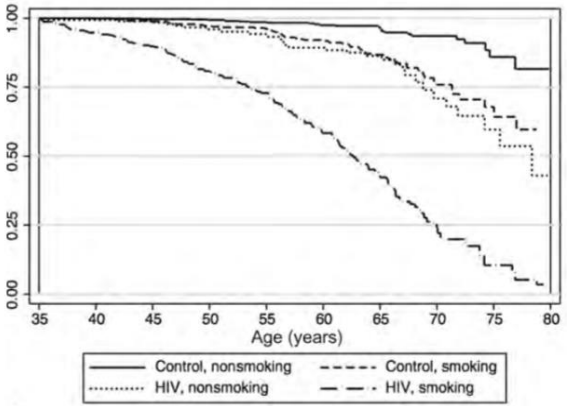
Table 32 Recommendations for lipid-lowering drugs in HIV patients

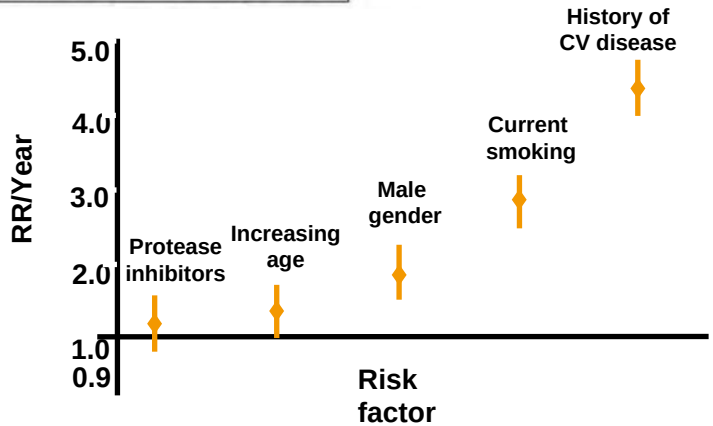
Recommendations for treatment goals for low-density lipoprotein-cholesterol		
In patients at VERY HIGH CV risk[c], an LDL-C goal of <1.8 mmol/L (70 mg/dL), or a reduction of at least 50% if the baseline LDL-C[d] is between 1.8 and 3.5 mmol/L (70 and 135 mg/dL) is recommended.	I	B
In patients at HIGH CV risk[c], an LDL-C goal of <2.6 mmol/L (100 mg/dL), or a reduction of at least 50% if the baseline LDL-C[d] is between 2.6 and 5.2 mmol/L (100 and 200 mg/dL) is recommended.	I	B

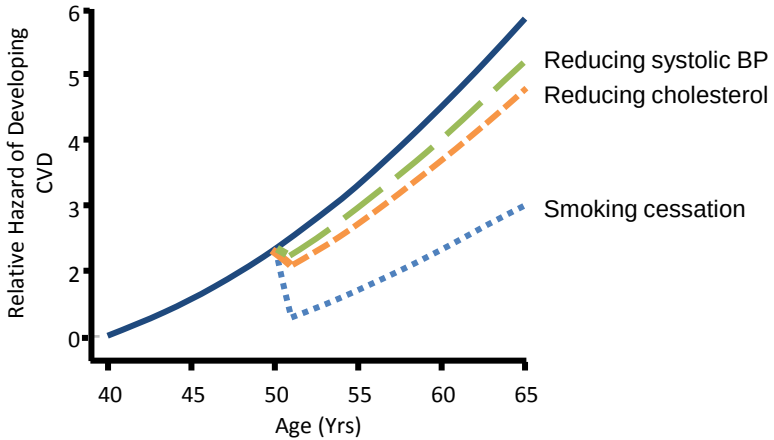
2016 ESC/EAS Guidelines for the management of dyslipidaemias. Atherosclerosis 2016 Oct; 253:281-344

The importance of smoking cessation

Mortality attributable to smoking among HIV-1-infected individuals





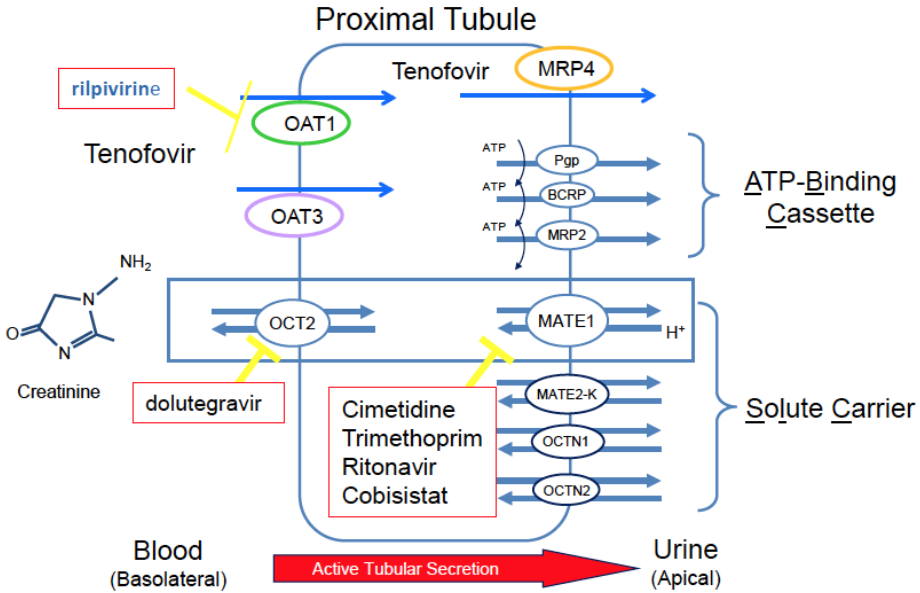


Helleberg M CID 2013; 56:727-34. Stein JH. N Engl J Med 2007;356:1773–1775. Petoumenos K, et al. HIV Med.2014;15:595-603

SCREEN FOR CO-MORBIDITIES. KIDNEY

Screen for co-morbidities. Kidney

- **CKD-epi**
  - Cobi and cobi-like effect (DTG, RPV, RTV…)



Cihlar T *et al. Antivir Ther* 2007; 12:267-72. Tong L *et al. AAC* 2007;51:3498-34504. Stray KM *et al. AAC* 2013;57:4982-9

Kidney Disease: Definition, Diagnosis and Management

Diagnosis of kidney disease

		eGFR[i]		
		≥ 60 mL/min	30-59 mL/min	< 30 mL/min
Proteinuria[ii]	UP/C[iii] < 50	Regular follow-up	• Check risk factors for CKD[x] and nephrotoxic medicines including ART[iv, x] • Discontinue or adjust drug dosages where appropriate[v] • Perform renal ultrasound • If haematuria present with any level of proteinuria refer to nephrologist • Refer to nephrologist if new CKD or progressive decline in eGFR	• Check risk factors for CKD and nephrotoxic medicines including ART[iv] • Discontinue or adjust drug dosages where appropriate[v] • Perform renal ultrasound • Urgent referral to nephrologist
	UP/C[iii] 50-100			
	UP/C[iii] > 100			

i For eGFR: Use CKD-EPI formula based on serum creatinine, gender, age and ethnicity because eGFR quantification is validated ≥ 60 mL/

ii Urinalysis: use urine dipstick to screen for haematuria. To screen for proteinuria, use urine dipstick and if ≥ 1+ check urine protein/creatinine (UP/C), or screen with UP/C. Proteinuria defined as persistent if con-

- UP/C
  - Role in the TAF *vs* ABC *vs* non-nuke regimen era?
- UP/C + UA/C
  - Role of HBP and DM in proteinuria, mainly microalbuminuria

new set point after 1-2 months

urine protein (mg/L) / urine creatinine (mmol/L); may also be expressed as mg/mg. Conversion factor for mg to mmol creatinine is x 0.000884

EACS Guidelines v 8.1. October 2016

SCREEN FOR CO-MORBIDITIES. BONE

Risk factors	Diagnostic tests
Consider classic risk factors(ii) Consider DXA in any person with ≥ 1 risk of:(iii) 1. Postmenopausal women 2. Men ≥ 50 years 3. History of low impact fracture 4. High risk for falls(iv) 5. Clinical hypogonadism (symptomatic, see Sexual Dysfunction) 6. Oral glucocorticoid use (minimum 5 mg/qd prednisone equivalent for > 3 months) Preferably perform DXA in these	**DXA scan** **Rule out causes of secondary osteoporosis if BMD low**(vi) **Lateral spine X-rays** (lumbar and thoracic) if low spine BMD, osteoporosis on DXA, or significant height loss or kyphosis develops. (DXA-based vertebral fracture assessment can be used as an alternative to lateral spine X-ray).
DXA results in the FRAX® score (http://www.shef.ac.uk/FRAX) • Only use if > 40 years • May underestimate risk in HIV-positive persons • Consider using HIV as a cause of secondary osteoporosis(v)	

Consider HIV as an individual risk factor?

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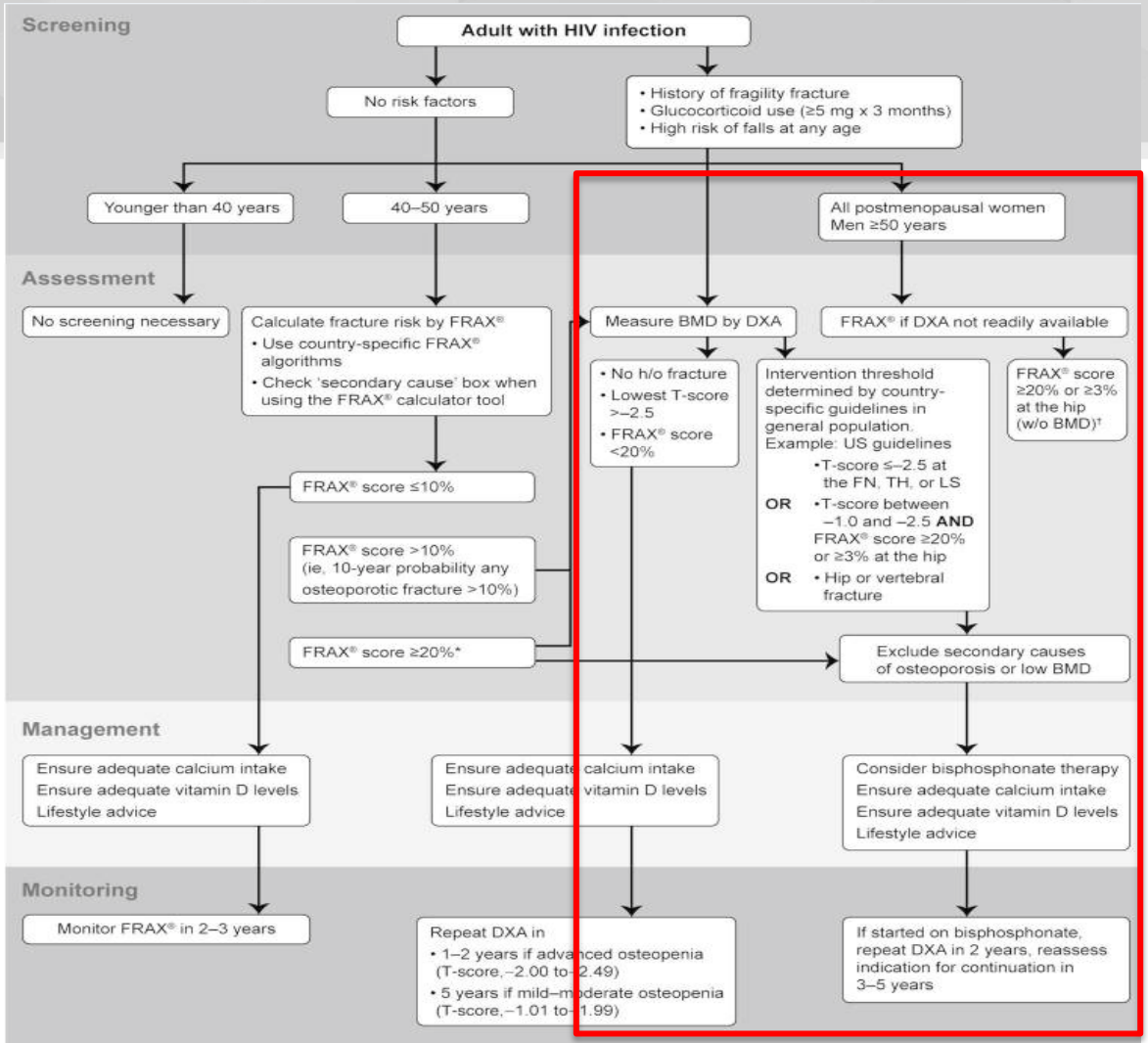
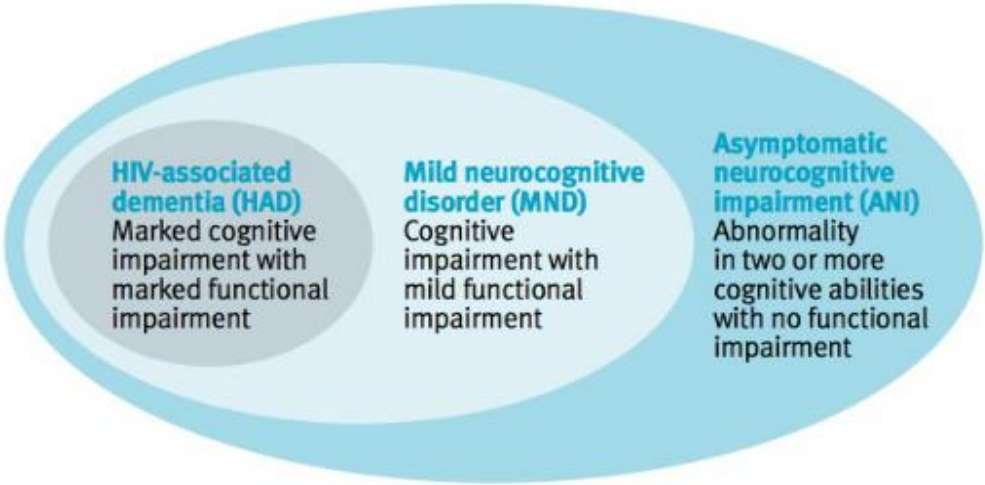


Brown TT *et al. CID* 2015; 60: 1242-51

SCREEN FOR CO-MORBIDITIES. CNS

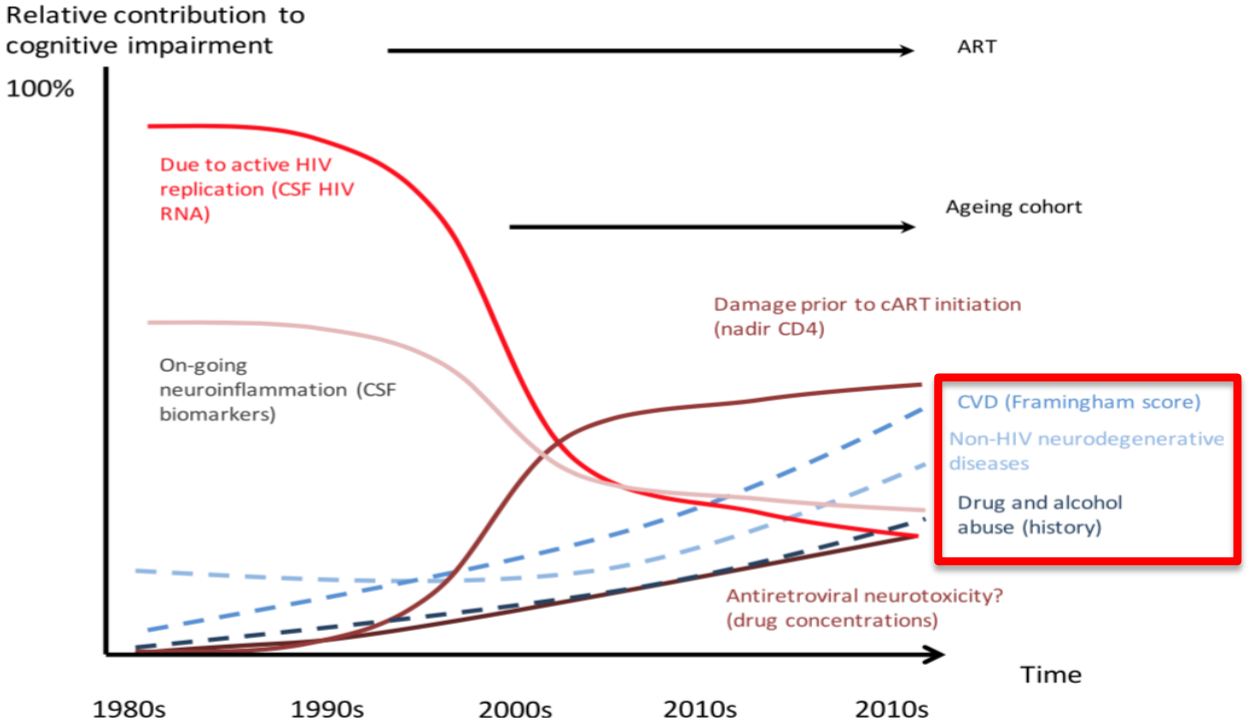
HIV-Associated Neurocognitive Disorders (HAND): Frascati criteria



Onset delayed and HAD reduced

Antinori A *et al. Neurology* 2007; 69: 1789-99

People aging with HIV have Non-HIV Dementias



Underwood J &Winston A; Curr HIV/AIDS Rep 2016 Oct; 235-40

Screen for cognitive impairment?

- Probably only if symptomatic
- If we do, simple test for multiple cognitive domains
  - 3 questions:
    - 'Do you experience frequent memory loss?'
    - 'Do you feel that you are slower when reasoning, planning activities, or solving problems?'
    - 'Do you have difficulties paying attention?'
  - International HIV Dementia Scale (IHDS)
    - Motor speed, psychomotor speed, memory-recall
  - Mini-cog
    - Remember 3 nouns
    - Draw a clock
  - MoCA (Montreal Cognitive Assessment)
    - Picks up MCI
  - Others: MEC-35, SPMSQ Pfeiffer, Bloch...
  - Probably MMSE not useful
- Important to rule out Depression as cause of CI!!!
- CSF viral escape rare!!!

Borson J et al. Int J Geriatr Psychiatry 2000; 15: 1021-7. Sacktor NC et al. AIDS 2005; 19:1367-74 www.mocatest.org Underwood J & Winston A. Curr HIV/AIDS Rep 2016 Oct; 235-40. EACS Guidelines v 8.1. October 2016 Bloch et al. CID 2016; 63: 687-93

SCREEN FOR CO-MORBIDITIES. CANCER

Problem	Persons	Procedure	Evidence of benefit	Screening interval	Additional comments
Anal cancer	MSM	Digital rectal exam ± anal cytology	Unknown; advocated by some experts	1-3 years	If anal cytology abnormal, anoscopy
Breast cancer	Women 50-70 years	Mammography	↓ Breast cancer mortality	1-3 years	
Cervical cancer	Sexually active women	Liquid based cervical cytology test	↓ Cervical cancer mortality	1-3 years	Target age group should include the 25 to 64 years at least. HPV testing may aid screening
Colorectal cancer	Persons 50-75 years	Faecal occult blood test	↓ Colorectal cancer mortality	1-3 years	Flexible sigmoidscopy at 55-years is an alternative
Hepatocellular carcinoma	Persons with cirrhosis & persons with HBV co-infection at high risk of HCC[ii]	Ultrasound and alpha-foetoprotein	Earlier diagnosis allowing for improved ability for surgical eradication	Every 6 months	See pages 52 and 69
Prostate cancer	Men > 50 years	Digital rectal exam ± PSA	Use of PSA is controversial	1-3 years	Pros: ↑ early diagnosis. Cons: overtreatment; ambiguity about size of ↓ cancer-related mortality

Lung cancer??

i Screening recommendations derived from the general population. These screenings should preferably be done as part of national general population-screening programmes. Although non-Hodgkin's lymphoma has a higher incidence in HIV-positive persons than in the general population, it is currently unknown whether it can be screened.
Careful examination of skin should be performed regularly to detect cancers such as Kaposi's sarcoma, basal cell carcinoma and malignant melanoma.

ii Persons of Asian and Black ethnicity, family history of HCC, liver cirrhosis, NAFLD or replicating HBV infection

VACCINATION

Infection	Vaccination rationale in HIV-positive persons	Comment
Influenza Virus	Higher rate of pneumonia. Explicitly recommended in all HIV-positive persons	Yearly
Human Papilloma Virus (HPV)	Shared risk with HIV of contracting infection. Higher rate of cervical and anal cancer	If HPV infection is established, efficacy of vaccine is questionable
Hepatitis B Virus (HBV)	Shared risk with HIV of contracting infection. HIV accelerates liver disease progression	Vaccinate if seronegative. Consider double dose (40 µg) in non-responders, in particular with low CD4 count and high HIV-VL. Repeat doses until HBs antibodies ≥ 10 IU/L / ≥ 100 IU/L according to national guidelines. See page 69
Hepatitis A Virus (HAV)	According to risk profile (travel, MSM, IVDU, active hepatitis B or C infection)	Vaccinate if seronegative. Check antibody titres in individuals with risk profile See page 69
Neisseria meningitidis	As general population	Use conjugated[ii] vaccine (2 doses 1-2 months apart) if available. Booster every five years if exposure continues. Polysaccharide vaccine not recommended anymore.
Streptococcus pneumoniae	Higher rate and severity of invasive disease. Vaccine explicitly recommended for all HIV-positive persons	Use conjugated[ii] 13-valent vaccine instead of PPV-23 polysaccharide vaccine if available. No recommendations yet about the need for a booster dose.
Varicella Zoster Virus (VZV)	Higher rate and severity of both chickenpox and zoster	Perform serology if exposure history negative. Vaccinate if seronegative. For contra-indications, see*
Yellow Fever Virus	Mandatory for travel to selected countries (provide exemption letter if no true risk of exposure)	Contra-indicated if past or current haematological neoplasia or thymus affection (thymoma, resection/radiation) For other contra-indications, see*

Vaccination

- Vaccinate according to national guidelines for healthy population, preferably after having achieved suppressed viremia and immune reconstitution (CD4 count > 200 cells/µL)
- Consider repeating vaccinations performed at CD4 count < 200 cells/µL (< 14%) following adequate immune reconstitution (HIV-VL undetectable and CD4 count > 200 cells/µL)
- As vaccine responses may be significantly lower in HIV-positive persons, consider antibody titers to assess their effectiveness
- Avoid polysaccharide vaccination
- For additional details, see http://www.bhiva.org/vaccination-guidelines.aspx

- For attenuated live vaccines[i] (in addition to restrictions for general population):
  - ***Varicella, measles, mumps, rubella, yellow fever**
    Contra-indicated if CD4 count < 200 cells/µL (14%) and/or AIDS
  - **Oral live typhoid**
    Contra-indicated if CD4 count < 200 cells/µL (14%): give inactivated parenteral polysaccharide vaccine. Preferred if CD4 count > 200 cells/µL (> 14%).

“NON-MEDICAL” ASPECTS

“Non-medical”aspects

- Lifestyle interventions
  - Dietary, Exercise, Toxics
- Sexual (dys)function
  - Causes: psychological, co-morbidities, drugs, hypogonadism
  - Treatment: DDI!
  - STDs!
- Functional/autonomy/dependency
  - Basic activities (ambulation, bathing, eating, dressing, grooming, toilet,...): Barthel, Katz
  - Instrumental activities (finances, cooking, shopping, housekeeping, telephone, transportation, taking meds): Lawton&Brody
  - Advanced activities (lifestyle, social relationships)
- Pain/range of motion/gait (risk of falls & fractures)
- Social
- Frailty??
- Advanced-care planning???

Greene M *et al. JAMA* 2013; 309:1397-1405. EACS Guidelines v 8.1. October 2016

Frailty phenotype

- **Shrinking** (unintentional weight loss 4.5> kg in prior year)
- **Weakness** (grip strength lowest 20%)
- **Poor endurance/exhaustion** (self report)
- **Slowness** (4 m walk 6-7 sec)
- **Low activity** (subject report)

- ≥3 criteria: frail
- 1-2 criteria: prefrail or intermediate

Fried LP *et al. J Gerontol A Biol Sci Med* 2001; 56: 146-56

Some simpler Frailty Screens

"FRAIL" Questionnaire
3 or greater = frailty; 1 or 2 prefrail

- Fatigue: are you fatigued?
- Resistance: Cannot walk up 1 flight of stairs?
- Aerobic: Cannot walk 1 block?
- Illnesses: Do you have more than 5 illnesses?
- Loss of weight: Have you lost more than 5% of your weight in the past 6 months?

Morley et al. J Nutr Health Aging. 2012 Jul;16(7):601-8. PMID: 22836700

Gérontopôle Frailty Screening Tool
(yes to at least 1, + gestalt)

- Patient living alone?
- Involuntary weight loss in the past 3 months?
- Fatiguability from the past 3 months?
- Mobility difficulties for the past 3 months?
- Memory complaints?
- Slow gait speed (>4 s for 4 m)

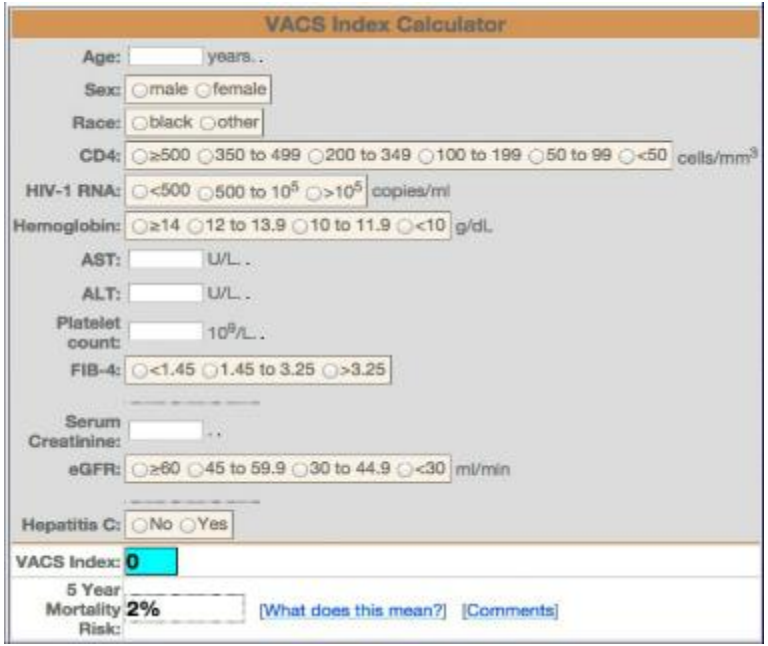
Subra et al. J Nutr Health Aging 2012
doi: 10.1007/s12603-012-0391-7.

Timed up and Go

Get up of the chair, walk 3 m, turn around, walk 3 m, sit on the chair

Normal <10''
Frail 10-20''
Risk of falls 20-30''
High risk of falls >30''

VACS Calculator: Assess prognosis/disease progression



Highly predictive of

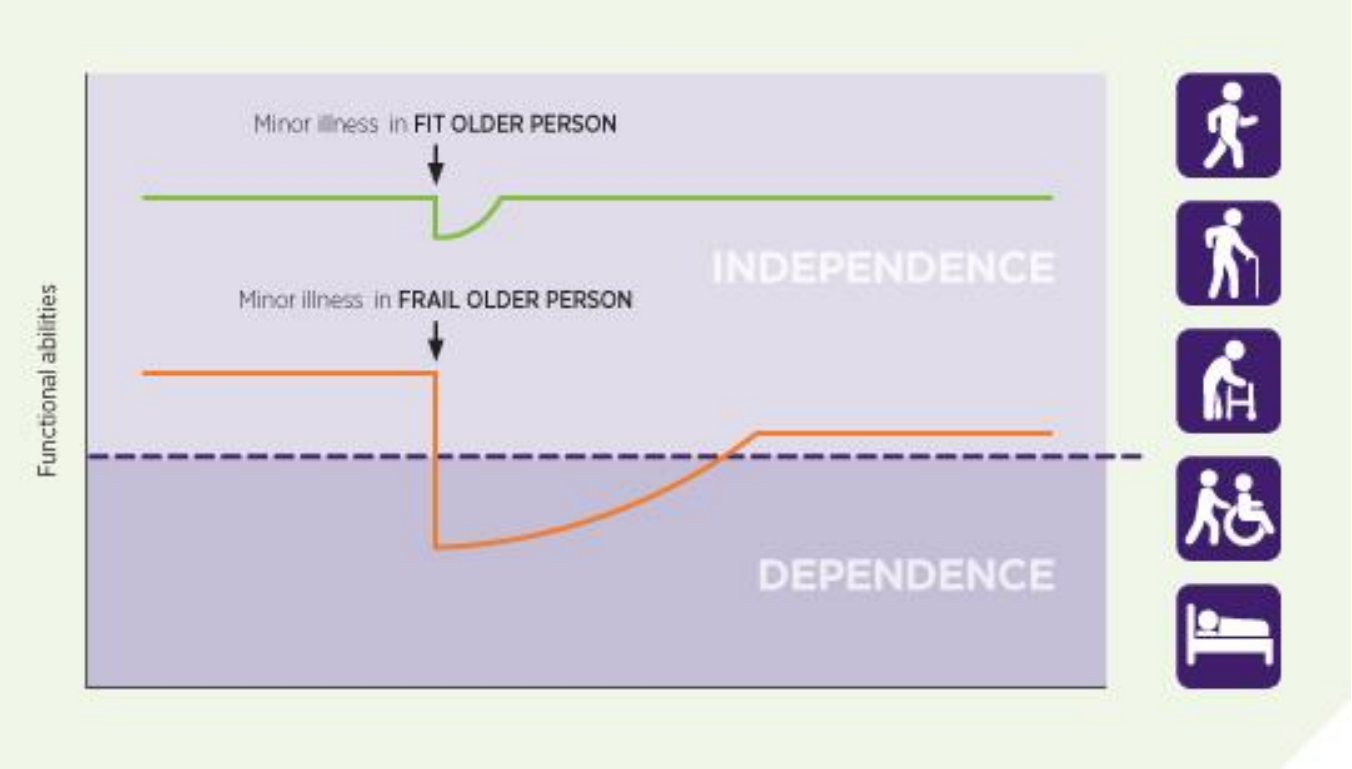
- All cause and cause-specific mortality
- Hospitalization, ICU admission
- Fragility fractures

Associated with

- Markers of chronic inflammation
- Cognitive performance
- Functional performance

https://vacs.med.yale.edu/calculator/

Impact of Frailty

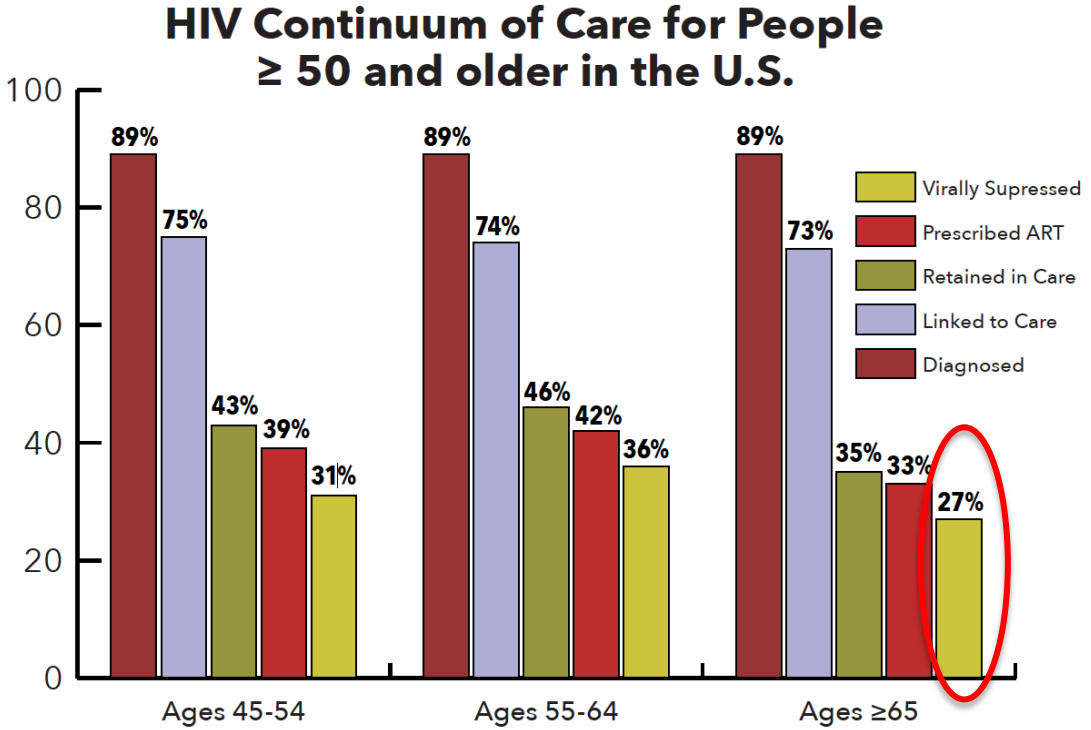


Geriatric (ageing-related) syndromes

- Immobility
- Falls
- Incontinence
- Confusional syndrome/delirium, dementia
- Infections
- Malnutrition
- Sight/hearing impairment (doctor-patient communication!)
- Constipation
- Depression, insomnia
- Iatrogenic (polypharmacy!)
- Sexual dysfunction
- ...

These syndromes may have a greater impact than co-morbidities in our aging HIV patients!

Achtung!!



Reference: http://www.cdc.gov/hiv/risk/age/olderamericans/
Disclaimer: The original version of this bar graph was taken from the CDC website and modified to display data for the 45 years and older population only.

EACS Young Investigators Conference

Summary

EACS European AIDS Clinical Society

Brussels
December 16
2016

NEW YORK STATE DEPARTMENT OF HEALTH AIDS INSTITUTE

HIV IN OLDER ADULTS

A Quick Reference Guide for HIV Primary Care Clinicians

Effective antiretroviral therapy (ART) has prolonged the lifespan of people living with HIV. Non-HIV/AIDS-related conditions now account for most morbidity and mortality among older people with HIV infection. Although ART reduces the effects of HIV disease and chronic inflammation, it does not restore normal immunologic function. The literature describes an aging HIV-infected population (between 50-65 years of age) with high rates of comorbid conditions compared with their non-HIV-infected counterparts. Medical care may be further complicated by neurocognitive decline and high rates of depression, alcohol and substance use, and social isolation. The goals of caring for older people with HIV infection are to minimize illness and frailty, optimize health and well-being, and prolong life.

This reference guide for care of older adults with HIV supplements, but does not replace, standard guidelines for all adults with HIV, which can be found at www.hivguidelines.org.

KEY POINTS

- People with HIV may develop chronic diseases associated with aging earlier in life, resulting in the development of multiple comorbid conditions.
- Aging can compound the immunological impact of HIV and accelerate HIV disease progression.
- Older people with HIV are at particular risk for polypharmacy, which increases the risk of drug-drug interactions and adverse events; it also can negatively affect cognitive function and quality of life.

To prevent or delay disability, the following assessments are particularly important for older adults with HIV/AIDS:

- Total HIV and non-HIV disease burden and functional status
- Medication adherence, side effects, drug-drug interactions, need for dose adjustments
- Alcohol and substance use, including prescription drugs
- Mental and cognitive status
- Social support

Cognitive Function Screening Tool: International HIV Dementia Scale (IHDS)

Memory-Registration—Give 4 words to recall (dog, hat, bean, red)—1 second to say each. Then ask the patient all 4 words after you have said them. Repeat the words if the patient does not recall them all immediately. Tell the patient you will ask for recall of the words again a bit later.

1. **Motor Speed:** Have the patient tap the first two fingers of the non-dominant hand as widely and as quickly as possible.
   - ✔ *Score:* 4 = 15 in 5 seconds, 3 = 11–14 in 5 seconds, 2 = 7–10 in 5 seconds, 1 = 3–6 in 5 seconds, 0 = 0–2 in 5 seconds
2. **Psychomotor Speed:** Have the patient perform the following movements with the non-dominant hand as quickly as possible: 1) Clench hand in fist on flat surface. 2) Put hand flat on surface with palm down. 3) Put perpendicular to flat surface on the side of the 5th digit. Demonstrate and have the patient perform twice for practice.
   - ✔ *Score:* 4 = 4 sequences in 10 seconds, 3 = 3 sequences in 10 seconds, 2 = 2 sequences in 10 seconds, 1 = 1 sequence in 10 seconds, 0 = unable to perform
3. **Memory-Recall:** Ask the patient to recall the 4 words. For words not recalled, prompt with a semantic clue as follows: animal (dog); piece of clothing (hat); vegetable (bean); color (red).
   - ✔ *Score:* Give 1 point for each word spontaneously recalled. Give 0.5 point for each correct answer after prompting. Maximum – 4 points

Total International HIV Dementia Scale Score: This is the sum of the scores on items 1–3. The maximum possible score is 12. Patients with a score of ≤10 should be evaluated further for possible dementia.

Reprinted by permission of Wolters Kluwer Health. Sacktor NC, Wong M, Nakasujja N, et al. The International HIV Dementia Scale: A new rapid screening test for HIV dementia. *AIDS* 2005;19:1367–1374.

Questions to Identify Depression (PHQ-2)[a]:

Over the past 2 weeks, how often have you been bothered by any of the following problems?

1. **Little interest or pleasure in doing things:** 0 = Not at all, 1 = Several days, 2 = More than half the days, 3 = Nearly every day
2. **Feeling down, depressed, or hopeless:** 0 = Not at all, 1 = Several days, 2 = More than half the days, 3 = Nearly every day
- ✔ *Score:* A score of 3 or more indicates the need for further evaluation.

TOTAL DISEASE BURDEN AND FUNCTIONAL STATUS

ASSESS:

- Disease progression since last visit
- Consultations, specialty care visits, oral health care, ancillary tests, changes in medications
- New symptoms and diagnoses
- Changes in hearing and sight
- Basic and instrumental activities of daily living (ADLs)
- Pain, range of motion, gait
- Frailty
- Need for home care, assisted or congregate living, skilled nursing, or hospice services
- Hygiene: hair, nails, feet

Screening Tools:

- *Osteoporosis:* Bone density, vitamin D
- *Cardiovascular disease risk:* Framingham risk score assessment, lipid profile including total cholesterol, HDL, LDL, and triglycerides (at least annually, repeat before initiating ART, and within 4 to 8 months after initiating)
- *Activities of daily living*[b]: Ask patient and/or caregivers whether patient can perform the following activities with or without assistance from others or from assistive devices:
  - ✔ *Basic ADLs:* feeding, toileting, continence, bathing, grooming, dressing, ambulation, transfers (to or from bed or chair)
  - ✔ *Instrumental ADLs:* telephone, shopping, food preparation, housekeeping, laundry, transportation, medication management, financial management
- *Pain, range of motion, gait:* Note whether patient is impaired by pain, joint stiffness, or abnormal or unsteady gait and is at risk for falls
- *Frailty*[c]: Using a phenotype assessment, frailty is indicated by the presence of three or more of the following five factors. Assess:
  - ✔ Shrinking: unintentional weight loss (>10 lbs in prior year)
  - ✔ Weakness: as determined by grip strength
  - ✔ Poor endurance and energy: self-report of exhaustion
  - ✔ Slowness: more than 6-7 seconds (depending on height) to walk 15 ft
  - ✔ Decreasing physical activity
- *HIV disease progression*[d]: The VACS Index, a prognostic tool based on a calculation of age and eight routine laboratory tests, helps monitor HIV disease progression and response to therapy. An online calculator can be accessed at: http://vacs.med.yale.edu

SOCIAL SUPPORT AND DAILY CARE

- **Update:**
  - ✔ Emergency contact information
  - ✔ Name of case manager, care coordinator, agencies providing services
  - ✔ Need for interpreter, family conference, advance directives, long-term care, or hospice discussion
  - ✔ HIPAA consents for communicating with support network

SAMPLE SCREENING QUESTIONS:

- **Social/household support.** Ask:
  - ✔ Do you do things socially with friends? What do you like to do?
  - ✔ Is there anyone who could come with you to medical appointments?
  - ✔ Is there anyone who you would call if you felt really sick?
  - ✔ Does anyone help you shop, cook, do the laundry, or take care of the house?
- **Nutrition.** Ask:
  - ✔ How often do you eat? What do you eat for breakfast? Lunch? Dinner?
- **Mobility.** Ask:
  - ✔ What do you do for exercise? How often to do you leave the house?
  - ✔ Do you ever use a cane, walker, or wheelchair?
  - ✔ Do you drive? Do you use the subway, buses, or taxis? Can you manage stairs?
  - ✔ Do you have friends or family members who could help with transportation?
- **Safety.** Ask:
  - ✔ Have you ever fallen in your home or outside? Do you ever feel that you might?
  - ✔ Is your telephone always working? Do you have a phone in your bedroom?
  - ✔ Currently, does anyone hit you, bully you, or yell at you? Do you feel safe in your home and neighborhood?
  - ✔ Do you manage your own money? Do you think that anyone is stealing from you or taking advantage of you financially?

DISCUSSING LONG-TERM CARE AND HOSPICE[f]

- Establish a supportive relationship, acknowledge patient feelings and concerns, and offer reassurance
- Identify and include other decision makers
- Help define expectations based on disease status and prognosis
- Discuss service needs, recommend level of care (home care, assisted living, skilled nursing, hospice), and establish consensus for treatment plan

INITIATION OF ART IN PATIENTS OVER 50

All patients, regardless of CD4 count, should be evaluated for ART. Patients >50 years of age are a high-risk group for whom initiation of ART is particularly urgent.

- Older untreated HIV-infected persons have more rapid disease progression than younger persons.[1]
- Immunologic response is less robust in older patients[a,b]; however, patients >50 years of age who initiate therapy with higher CD4 counts are more likely to achieve better immunologic responses.[a]
- Patients who have longstanding HIV infection have increased susceptibility to inflammation-induced diseases and have diminished capacity to fight certain diseases.[1]

POLYPHARMACY

Polypharmacy significantly increases the chances of serious drug-drug interactions, toxicity, and poor adherence.

RECOMMENDATIONS:

- Perform medication review at every visit
- Discontinue medications that are no longer needed
- Encourage patients to use one pharmacy
- Consider obtaining a dispensing history from the pharmacy

ASSESS:

- Current medications and adherence
- Potential drug interactions, adverse drug effects, allergies
- Dosing considerations: renal and hepatic function, pharmacokinetic changes with aging

Note: When patients report use of erectile dysfunction medications or products to relieve vaginal dryness, clinicians should use the opportunity to discuss safer sex practices.

Screening Tools: ▪ Urine screen ▪ Blood panel

Medication List and Adherence Verification:

- ✔ Create/update medication list, including over-the-counter drugs, supplements, and complementary and alternative medications.
- ✔ Verify current pharmacy and check prescription pattern and fill dates.
- ✔ Ask patients to bring pill bottles to visits, compare with medication list, and perform pill counts.
- ✔ Cross-reference information with home health agency or other caregivers.
- ✔ Consider use of customized pill cards, pill boxes (for those who can fill them on their own), home delivery, prepackaging of medication, "easy-open" containers.
- ✔ Ensure that instructions on medication dosing are appropriately conveyed.

COMMUNICATING WITH OLDER PATIENTS[g]

Establish rapport:

- Use respectful, preferred forms of address
- Engage the patient: maintain eye contact; use frequent, brief, affirmative responses; avoid rushing and interrupting; demonstrate empathy

Compensate for vision and hearing deficits:

- Ensure patients are wearing eyeglasses and/or working hearing aids, if needed
- Speak slowly and clearly; keep hands away from face
- Use large type, visual aids

Create opportunity for discussion of sex:

- Ask whether the patient is sexually active and has any problems to address
- Assess and enhance patient's knowledge of safer-sex practices

Ensure understanding:

- Write down important information
- Avoid jargon, ask if clarification is needed
- Summarize plan and next steps

Footnotes:

a Based on D Katz S. Assessing self-maintenance: Activities of daily living, mobility, and instrumental activities of daily living. *J Am Geriatr Soc* 1983;31:721–727. b Lawton MP, et al. Assessment of older people: Self-maintaining and instrumental activities of daily living. *Gerontologist* 1969;9:179–186.

c For the full validated assessment, refer to Fried LP, et al. Frailty in older adults: Evidence for a phenotype. *J Gerontol A Biol Sci Med Sci* 2001;56:M146–M156.

d Justice AC, et al. Predictive accuracy of the Veterans Aging Cohort Study index for mortality with HIV infection: A North American cross cohort analysis. *J Acquir Immune Defic Syndr* 2010;54:149–165.

e Adapted from www.mayoclinic.com/

f Reprinted from Kroenke K, et al. The Patient Health Questionnaire-2: Validity of a two-item depression screener. *Med Care* 2003;41:1284–1292.

g Derived from the National Institute on Aging. Talking with your older patient: A Clinician's Handbook. NIH Pub. No. 08-7705. September 2011. www.nia.nih.gov/sites/default/files/talking_with_your_older_patient.pdf

For more quick reference guides for HIV primary care clinicians, visit www.hivguidelines.org.

CONDITIONS OF AGING THAT MAY AFFECT ADHERENCE

Impaired hearing	Perform screening test to determine need for formal testing: www.asha.org/public/hearing/Self-Test-for-Hearing-Loss
Impaired vision	Perform vision screening every 1–2 years in pts ≥65; every 1–3 years in pts 55-64; annually for pts with CD4 <200, diabetes mellitus, or hypertension
Cognitive impairment	Assess cognitive function at baseline and at least annually*
Polypharmacy (higher pill burden, greater cumulative side effects, medication fatigue)	Perform medication review at every visit; discontinue medications that are no longer needed
Social isolation and lack of support	Assess social support at least annually*
Depression	Screen for depression at every visit*
Substance use, including misuse of prescriptions	Screen for substance use at baseline and at least annually

*See reverse side for sample screening tools and questions.

ALCOHOL AND SUBSTANCE USE

Patients >50 years of age are at risk for misuse of prescription drugs. As with all HIV-infected patients, clinicians should screen for alcohol and substance use at baseline and at least annually.

Signs of Possible Abuse of Prescription Medications[a]:

- Frequent reports of "losing" prescriptions and requests for more to be written
- Seeking prescriptions from more than one doctor
- Taking higher doses than prescribed
- Change in sleep patterns
- Mood swings
- Poor decision-making

See *Substance Use Screening: A Quick Reference Guide for HIV Primary Care Clinicians* (available at www.hivguidelines.org).

MENTAL HEALTH AND COGNITIVE STATUS

As with all HIV-infected patients, clinicians should perform a comprehensive mental health screening at baseline and at least annually.

ASSESS:

- Depression, anxiety, PTSD
- Cognitive function
- Sleep habits and appetite
- Psychiatric history
- Suicidal/violent ideation
- Psychosocial status

Screening tools for cognitive function and depression are provided (over). See *Mental Health Screening* card (available at www.hivguidelines.org) for sample screening tools for all components of the comprehensive mental health screening.

ADDITIONAL RESOURCES

- **New York State Office for the Aging** *www.aging.ny.gov*
  Health Insurance Assistance (HIICAP): 1-800-701-0501
  Senior Citizens' Resource Guide:
  www.aging.ny.gov/ResourceGuide/ResourceGuide2013.pdf
  Senior Citizens' Help Line: 1-800-342-9871
- **New York State Department of Health**
  Long-Term Care (information, facilities, services, hotlines):
  www.health.ny.gov/facilities/long_term_care
  New York Elderly Pharmaceutical Insurance Coverage (EPIC) (for low income seniors): *www.health.ny.gov/health_care/epic*
  Red Ribbon Silver Threads: Healthy Aging in the Era of HIV/AIDS (AIDS Institute conference materials):
  www.health.ny.gov/diseases/aids/conferences
- **New York State Office of Mental Health**
  Geriatric Mental Health: *www.omh.ny.gov/omhweb/geriatric/*
  Geriatric Resources: *www.omh.ny.gov/omhweb/geriatric/resources.html*
- **New York State Adult Protective Services**
  Report abuse in NY State: 1-800-342-3009 (Option 6) or contact one of the county departments of social services:
  http://ocfs.ny.gov/main/localdss.asp
- **New York State Advance Directives**
  Health Care Proxy: *www.health.ny.gov/forms/doh-1430.pdf*
  Living Will (NY State Bar Association):
  www.nysba.org, Search "living will"
  Do Not Resuscitate (DNR) form: *www.health.ny.gov/forms/doh-3431.pdf*
- **New York City Department for the Aging**
  Senior Services: *www.nyc.gov/html/dfta/html/services/services.shtml*

REFERENCES

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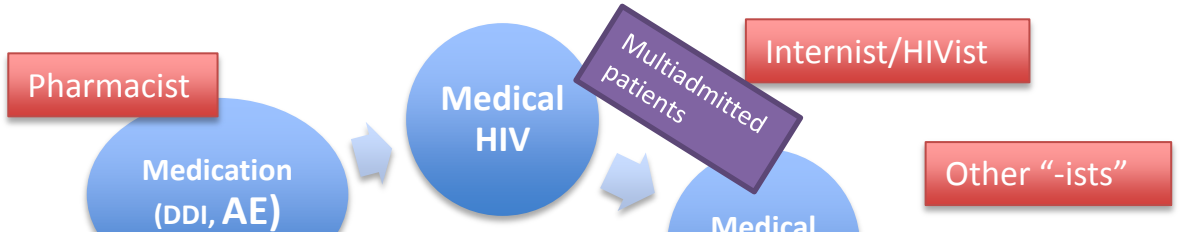
2. Grabar S, et al. CD4 cell counts of 800 cells/mm³ or greater after 7 years of highly active antiretroviral therapy are feasible in most patients starting with 350 cells/mm³ or greater. *J Acquir Immune Defic Syndr* 2007;45:187–192.
3. COHERE Study Group. Response to combination antiretroviral therapy: Variation by age. *AIDS* 2008;22:1463–1473.
4. Li X, et al. CD4+T-cell counts and plasma HIV-1 RNA levels beyond 5 years of highly active antiretroviral therapy. *J Acquir Immune Defic Syndr* 2010;57:401–408.
5. Faxel A. NIH statement on National HIV/AIDS. www.nih.gov/news/health/sepoct2010/niaid-09.htm

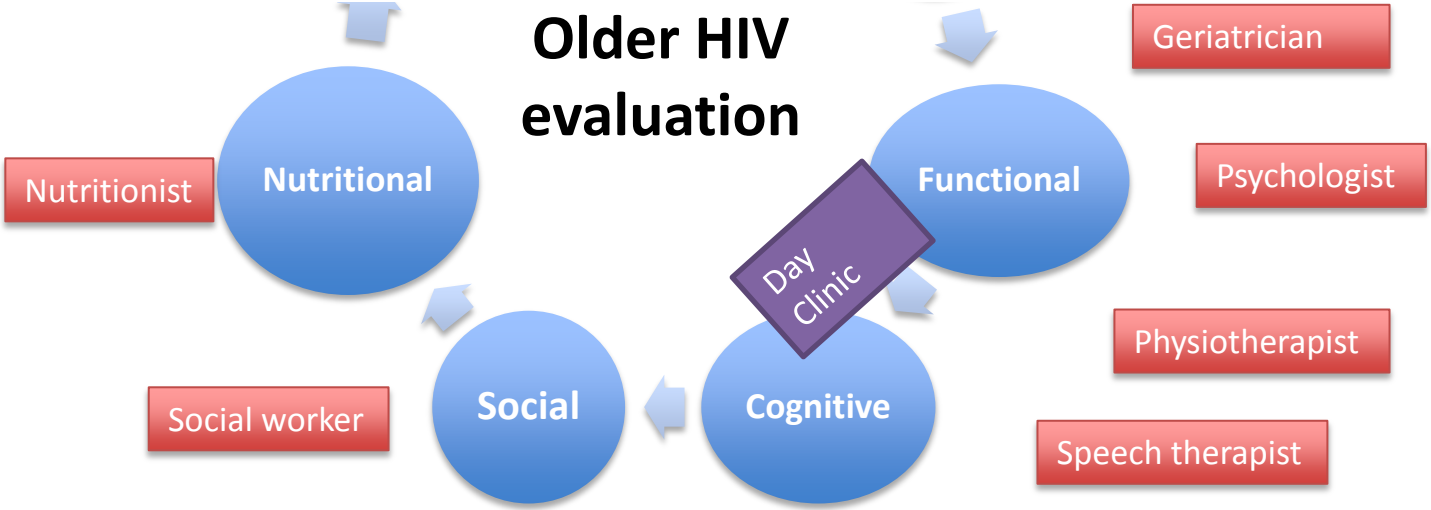
www.hivguidelines.org

Evaluation of the "older" HIV patient

More than managing CD4/VL and comorbidities...



In 15-20 minutes per patient???



Older HIV patients care in the future… Open question

- How should we organize the medical care to our geriatric patients???
  - Within the HIV Units, on our own (after all we are Internists...)
  - Within the HIV Units, incorporating adequate professionals (geriatrician, nutritionist, physiotherapist, social worker, psychologist…)
  - Incorporating HIV physicians (part-time) to the existing Geriatric Units
  - Visiting patients both at the HIV Clinic and the Geriatric Unit

Conclusions

- Patients will die WITH HIV, NOT FROM HIV, and many of them will achieve old ages
- It is not only about HIV or comorbidities, there is also functional, cognitive, social and many more issues to evaluate! Not only extend survival but maintain quality of life!!
- Comprehensive geriatric assessment cannot be completed in an hour (or 20 min!), but you can start
- We will have to start thinking on how to organize the holistic care of our HIV aging population

THANK YOU