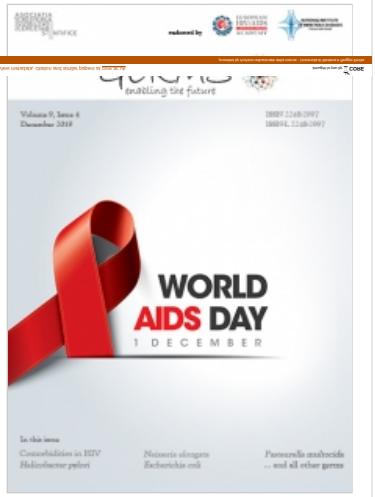
Site cofinanţat din Fondul Social European prin Programul Operaţional Sectorial Dezvoltarea Resurselor Umane 2007-2013



Evolving approaches and resources for clinical practice in the management of HIV infection in the HAART era

Giovanni Guaraldi

Received: 2 November 2011; accepted: 29 November 2011

**MD, Department of Medicine and Medical Specialties, University of Modena and Reggio Emilia, via del pozzo 71, 41100 Modena, Italy, giovanni.guaraldi@unimore.it*

doi: 10.11599/germs.2012.1002

Abstract

Physicians treating HIV infection concentrate not only on the viral management but they also have to take into account the potential age and lifestyle-related conditions likely to influence long-term morbidity, correlated with patients' survival. Hypertension, diabetes, cardiovascular, bone, kidney and liver disease, better than opportunistic infection, depict the changing spectrum of HIV disease in the HAART era. These conditions, the so called non infectious co-morbidities, are age-related diseases affecting the general population. However, their prevalence in HIV-infected individuals is higher, with earlier onset, probably as a result of the complex inter-relationship between HIV infection, co-infection and antiretroviral therapy.

Regular screening for non infectious co-morbidities helps identify those asymptomatic HIV-infected individuals who are most at risk of developing comorbidities; this means that appropriate intervention, either by lifestyle changes to reduce modifiable risk factors or by the use of pharmacological management, can be initiated.

Keywords **HIV, non infectious co-morbidities, HAART, metabolic clinic.**

Expert opinion

Some of the first reports of lipodystrophy in HIV-infected patients receiving protease inhibitors (PIs) date back to 1998, when they raised questions about antiretroviral therapy (ART), which had just become available at that time.[1]Lipodystrophy could be described as one or both (mixed forms) of the following: peripheral fat loss (lipoatrophy), central fat accumulation (lipohypertrophy), usually, but not invariably, associated with alterations of lipid metabolism and impairment of insulin sensitivity possibly leading to diabetes mellitus.[2]

Thymidine analogue use was considered to be the leading risk factor for lipoatrophy development.[3] In the context of earlier detection of HIV infection and newly available drugs and drug classes that replace regimens with thymidine analogue-based backbones or ritonavir boosting of protease inhibitors,[4]it is reasonable to foresee a decrease in the prevalence of lipodystrophy in the coming years.[2]

Lipodystrophy includes manifestations which often overlap with the diagnosis criteria for metabolic syndrome, leading to increased risk of cardiovascular disease (CVD) and diabetes in the general population. It is extremely important for physicians treating HIV infection to concentrate not only on the viral management but to also take into account the potential age and lifestyle-related conditions likely to influence long-term morbidity, correlated with patients' survival. Hypertension, diabetes, cardiovascular, bone, kidney and liver disease, better than opportunistic infection, depict the changing spectrum of HIV disease in the HAART era.

These conditions, the so called non infectious co-morbidities, are age-related diseases affecting the general population. However, their prevalence in HIV-infected individuals is higher, with earlier onset, probably as a result of the complex inter-relationship between HIV infection, co-infection and ART.[5,6]

European AIDS clinical society (EACS) guidelines were the first to suggest a regular screening for non infectious co-morbidities in the context of the management of antiretroviral drugs.

Regular screening helps identify those asymptomatic HIV-infected individuals who are most at risk of developing comorbidities; this means that appropriate intervention, either by lifestyle changes to reduce modifiable risk factors or by the use of pharmacological management, can be initiated. Although currently some of the assessment criteria are identical to those applied in the general population, for example, using the Framingham score for calculation of CVD risk, caution is required as some of these generalized assessment tools do not allow for the additional potential risk caused by HIV-related inflammatory processes. What makes risk prediction difficult in HIV-infected individuals, is the presence of additional potentially contributing factors besides the traditional ones: HIV-associated immunodeficiency and immune activation, chronic inflammation as well as drug toxicities.

Risk prediction algorithms appear to underestimate events in the context of HIV in a yet relatively young population. As such, clinicians are increasingly interested in identifying those patients which qualify for primary prevention rather than identifying those who are theoretically at risk.[2]

Therefore, risk prediction cannot be considered a diagnostic process per se, but rather the way to stratify and subsequently identify patients who need further evaluation in a multidisciplinary approach. Patients identified in the intermediate risk groups should be evaluated for subclinical organ diseases.

To provide a few examples, with regards to cardiovascular diseases as patterns of subclinical organ disease, coronary calcium scoring or carotid intima-media thickness measurement can be mentioned as markers of global atherosclerosis burden and flow-mediated dilation testing or pulse wave velocity as markers of endothelial dysfunction.

In regard to bone diseases examples of subclinical organ disease, useful tools include DEXA and X-ray morphometric assessment of vertebral body.

An ageing HIV population demands a new approach to the management of HIV infection. It requires HIV physicians to be vigilant for the presence of comorbidities, preferably via initial screening and regular monitoring, to allow appropriate referral to other clinical specialists when required, for example, endocrinologists, cardiovascular specialists, renal physicians and hepatologists. In addition, tracking of disease progression and adjustments to management protocols need to be considered as part of multidisciplinary care that accommodates the increasing number of factors influencing non-HIV-related outcomes.

Educating physicians is essential, potentially through existing programmes for providing physicians with the extensive knowledge required in order to effectively diagnose and treat age-associated, HIV-related comorbidities.

Some web based tools may facilitate this work from the bench to the bed side. Among them is MyHIVClinic (www.myhivclinic.com/). This is an educational resource designed as a 'virtual treatment clinic' to support healthcare professionals in the management of the most common co-morbidities experienced by people living and ageing with HIV.

The website has been optimized for use on mobile phones and tablet devices. Users can simply navigate through different departments of the virtual clinic according to their educational needs and interests and quickly find the information, tools and educational resource that they need, including:

• Educational material on the most common co-morbidities experienced by people living and ageing with HIV

• Summaries of the key considerations when managing a number of comorbid conditions in the context of HIV infection, including current options and implications for assessment, management and care

• Access to relevant current guidelines, tools, reference lists and patient case studies for commonly occurring co-morbidities

Registered users can set their preferences and subscribe to the new information and content update alerts that are of most interest to them. The following departments are currently open on myHIVclinic: HIV >50 years, Cardiology and Endocrinology. Currently these departments cover: prevention of cardiovascular disease, coronary artery disease, dyslipidemia, hypertension, thromboembolic disease, diabetes, osteoporosis, thyroid disease, cognitive impairment, renal impairment, aspects of ageing (including frailty).

A practical example of this integrated multidisciplinary approach is the Metabolic Clinic of Modena University in Italy, a tertiary level referral centre for diagnosis and treatment of metabolic and morphologic alteration in HIV people.

HIV patients attending the Metabolic Clinic are evaluated by a multidisciplinary team consultant service consisting of infectious diseases physicians, nutritionists, personal trainers for physical activities, psychologists, cardiologist, nephrologists, endocrinologists and plastic surgeons, in the efforts to provide a holistic approach to the changed health needs of people living with HIV.

Given the fact HIV infection is increasingly regarded as a chronic condition, it is important for the patients to benefit from the care of a multi-disciplinary team, particularly in the context of a population aging with HIV and respectively aging on ART. All aspects regarding non infectious co-morbidities need to be taken into account in order to be able to choose the optimal ARV regimen for each patient. There is still work underway but nowadays, we find ourselves closer to reaching the goal of individualized care in HIV infection.

Acknowledgment www.myHIVclinic.com was initiated and is funded and managed by ViiV Healthcare UK Ltd. The site's content is directed by an international steering committee made up of HIV experts with additional input from experts from other therapy areas as well.

Conflicts of interest No conflicts of interest have been declared.

References

1. Carr A, Samaras K, Burton S, et al. A syndrome of peripheral lipodystrophy, hyperlipidaemia and insulin resistance in patients receiving HIV protease inhibitors. AIDS. 1998; 12(7): F51-8.

2. Guaraldi G, Baraboutis IG. Evolving perspectives on HIV-associated lipodystrophy syndrome: moving from lipodystrophy to non-infectious HIV co-morbidities. Journal of Antimicrobial Chemotherapy. 2009; 64(3): 437-40.

3. Ribera E, Paradiñeiro JC, Curran A, et al. Improvements in subcutaneous fat lipid profile, and parameters of mitochondrial toxicity in patients with peripheral lipoatrophy when stavudine is switched to tenofovir (LIPOTEST study). HIV Clin Trials. 2008; 9(6): 407-17.

4. Florea D, Oţelea D, Paraschiv S, Frăţilă M, Streinu-Cercel A. Is the human leucocyte antigen B*5701 predicted by sequence variations of HIV-1 subtype F reverse transcriptase? Therapeutics, Pharmacology and Clinical Toxicology. 2010; XIV(3): 183-7.

5. Lohse N, Hansen AB, Gerstoft J, Obel N. Improved survival in HIV-infected persons: consequences and perspectives. J Antimicrob Chemother. 2007; 60(3): 461-3.

6. Appay V, Almeida JR, Sauce D, Autran B, Papagno L. Accelerated immune senescence and HIV-1 infection. Exp Gerontol. 2007; 42(5): 432-7

Please cite this article as:

Guaraldi G. Evolving approaches and resources for clinical practice in the management of HIV infection in the HAART era. GERMS. 2011;1(1):6-8. doi: 10.11599/germs.2012.1002

European Academy of HIV/AIDS and Infectious Diseases, 1 Dr. Grozovici street, Bucharest, ROMANIA
Contact us at: office@germs.ro