HIV Medical Alert

for primary health care providers and health professionals

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HIV Medical Alert provides clinicians with comprehensive and up-to-date information about diagnosis, treatment, and prevention of HIV.

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WELCOME to the *HIV Medical Alert* Newsletter Continuing Medical Education (CME) format. This activity has been planned and implemented in accordance with the Essentials and Standards of the Medical Society of the State of New York through the joint sponsorship of Glens Falls Hospital and Upper Hudson Primary Care Consortium. The Glens Falls Hospital is accredited by the Medical Society of the State of New York (MSSNY) to sponsor continuing medical education for physicians. The Glens Falls Hospital designates this continuing medical education activity for a maximum of 1 hour of Category I credit towards the American Medical Association Physician's Recognition Award (AMA-PRA). Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

Optimizing the Nutritional Health of People Living with HIV Disease Given the Challenges Associated with HAART

By Vivica Kraak, MS, RD, LD

Introduction

The AIDS wasting syndrome (AWS) was the AIDS defining condition for approximately 20% of all AIDS cases in the 1980s. Although it was thought that HAART would eliminate AWS and other nutrition-related problems, HAART has not reduced the incidence of AWS but has made it more difficult to recognize; paradoxically, the nutritional management in the era of HAART has become more complex. This article provides an overview of the nutrition-related issues resulting from HAART, and offers recommendations for primary health care providers to optimize the nutritional health of HIV-infected patients.

Lipodystrophy

Paramount among the unexpected consequences of HAART has been the recognition of lipodystrophy, a broad term used to describe HAART-associated metabolic and morphologic complications. These include insulin resistance, elevated cholesterol and triglyceride levels, fat atrophy (loss of subcutaneous fat in the arms, legs, and face), central fat accumulation (e.g., abdominal paunch, breasts, buffalo hump), and metabolic acidosis. Potential causes of the morphological and metabolic complications have been proposed and include the interactions of HIV, hormones, pro-inflammatory cytokines, genetic profile, and immune reconstitution. However, the greatest focus is on the role of antiretrovirals.

PIs and NRTIs may have *both* independent and synergistic effects on the development of lipodystrophy.[1] Protease inhibitors are associated with insulin resistance as well as blood glucose and lipid abnormalities. NRTIs are associated with mitochondrial toxicity, metabolic acidosis, lipoatrophy, peripheral

neuropathy, and bone demineralization. The syndrome is highly prevalent among antiretroviral-experienced patients. Facial wasting, in particular, can be stigmatizing and has been linked to poor drug adherence. Unfortunately, there is no evidence-based support for dietary or nutritional interventions which positively impact body composition changes. However, awareness of the syndrome is important due to the implications for other organ systems as reviewed below.

Cardiovascular Health

The dietary guidelines for cardiovascular health for HIV disease are similar to those recommended for the general population in both the primary and secondary prevention of cardiovascular diseases. Early referral to a registered dietitian or experienced nutritionist after HIV diagnosis can emphasize the following:

- Select lean meats, poultry, and fish that are baked, boiled, broiled, or grilled; choose plant-based complex starches including whole grains, beans and legumes and fresh fruits and vegetables that are high in soluble and insoluble fiber.
- Consume a variety of beneficial fats (e.g., salmon that is a rich source of omega-3 fatty acids) and monounsaturated fats (e.g., peanut, olive, and canola oil).
- Limit consumption of saturated fats (e.g., fatty fried meats, whole-milk dairy products), trans-fatty acids (e.g., partially hydrogenated fats), concentrated sweets, and alcohol.
- Actively pursue smoking cessation.

Additional unproven but potentially beneficial measures include the use of vitamin B complex, therapeutic doses of vitamin C and E. These may provide antioxidant functions to protect mitochondria from NRTIs and diminish the oxidation of low-density lipoprotein (LDL) cholesterol and N-acetyl cysteine (NAC), a precursor of glutathione, which is a major antioxidant. Omega-6 fatty acid supplements (e.g., walnut, borage, flaxseed oil) may reduce elevated trigycerides associated with HAART. Clinicians must be attentive to the adverse metabolic consequences of HAART and aggressively intervene using all available tools including nutritional manipulations and pharmacologic means.

Bone Health

Low bone mineral density (BMD) is common and thought to be due to NRTI use. Dual Energy X-ray Absorptiometry (DEXA) scanning is recommended to detect bone loss in the course of treatment. Modifiable risk factor reduction may include one or more of the following:

- Reducing or discontinuing smoking, alcohol and caffeine consumption.
- Engaging in regular weight resistance exercise.
- Eating calcium-rich and vitamin D fortified foods and supplementing with 500-1200 mg/day of calcium.

Peripheral Neuropathy

Peripheral neuropathy may have multiple etiologies but it has been associated with mitochondrial toxicity linked to NRTIs. It may also be attributed to a vitamin B12 or B6 deficiency although serum levels should be measured before supplementing with therapeutic doses of these micronutrients so that other potential causes are recognized. Two dietary supplements have been identified as possibly mitigating symptoms of AIDS-related neuropathy—L-carnitine and alpha-lipoic acid. However, further research is warranted to explore the combined benefits of dietary supplements, acupuncture, massage, and the adjustment of HAART or other medications by primary care providers.

Oral Care

Optimal systemic health requires excellent oral health. Advanced periodontal disease is commonly evident in individuals with HIV and negatively impacts the ability to eat and enjoy healthful foods. Modifiable interventions to optimize oral health may include one or more of the following:

- Offering an early referral to a dentist for regular care.
- Promoting daily oral hygiene including brushing and flossing.
- Reducing or eliminating alcohol and tobacco consumption.
- Avoiding excessive consumption of concentrated sweets and soda.

- Encouraging adequate fluid consumption.

Summary

Since the early 1990s, the annual rate of new HIV infections in the United States is estimated at 40,000. A large proportion of new HIV cases are from economically disadvantaged communities with historically poor access to HIV care.[2,3] These affected groups may be diagnosed at a later stage of HIV disease, often delay care for themselves due to competing caregiver responsibilities[4] and depend heavily on the public sector for the finance and delivery of their care[5]. Living with limited resources, they are at very high risk of experiencing hunger and *food insecurity*—when regular access to nutritionally adequate and safely prepared foods is limited or uncertain.

Access to regular nourishing meals, adequate cooking facilities, nutritional counseling that includes meal planning, and the provision of culturally acceptable foods (and possibly nutritional/dietary supplements) can complement HIV treatments and are recognized to be vital components that support successful medication adherence.[6] Primary care providers should emphasize the importance of nutritional management considering the patient's symptoms, food preferences, perspectives about their own roles in disease management, and willingness to explore a range of nutrition-related strategies to optimize their individual health. Special care needs to be given to those with limited resources because of their higher risk of food insecurity. A variety of HIV/AIDS-related nutrition resources exist that are summarized in Table 1. (See next page).

Referral to a registered dietitian or experienced HIV/AIDS nutritionist is recommended for regular nutrition assessments to develop individually tailored and mutually satisfactory nutrition plans.

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TABLE 1: USEFUL HIV/AIDS NUTRITION RESOURCES

Resource	Website/Description
AIDS Nutrition Services Alliance	www.aidsnutrition.org Provides technical assistance to member organizations in 37 states for meeting the nutrition needs of PLWHAs. Coordinates an annual conference and the *Positive Helpings* grant program.
The Body	www.thebody.com Ability to ask experts questions about HIV/AIDS online and provides multiple links to other resources.
The Cutting Edge	www.tceconsult.org Provides information on education and research for clinicians and health care professionals. Free downloadable fact sheets on the nutritional management of symptoms for HAART and food-medication interactions.
Hi-R-Ed	www.hi-r-ed.org Provides a basic and an advanced bioelectrical impedance analysis (BIA) continuing education course online.
HIV ReSources	www.hivresources.com Provides an electronic newsletter, discussion list, update on nutrition and HIV-related resources in English and Spanish.
HIV/AIDS Dietetic Practice Group of the American Dietetic Association	www.hivaidsdpg.com Provides a quarterly newsletter, *Positive Communication*, and access to a network of HIV dietitian specialists throughout the U.S.
National Minority AIDS Council	www.nmac.org Free copies available of an easy to understand English and Spanish version booklet, *Lipo What? A Patient's Guide to Body-Shape Changes and Lipid Problems Associated with HIV.*
NIH National Center for Complementary and Alternative Medicine	http://nccam.nih.gov Provides information on research related to medicine, which combines mainstream medical therapies and complementary and alternative (CAM) therapies for which there is some high-quality scientific evidence of safety and effectiveness.
NIH Office of Dietary Supplements	http://dietary-supplements.info.nih.gov/ Coordinates the International Bibliographic Information on Dietary Supplements database of published, international, scientific literature on dietary supplements including vitamins, minerals, and botanicals.
NUMEDX	www.numedx.com Rich resource of online articles addressing nutrition, medicine, exercise, and complementary therapies for HIV disease management.
POZ Magazine	www.poz.com Written by and for PLWHAs, provides cogent articles on relevant topics including nutrition.
Visionary Health Concepts	www.freehivinfo.com A community-based health and education company providing resources on lipodystrophy, HIV/AIDS, and hepatitis. Excellent downloadable publication for PLWHAs, *Body Changes: The Guide to Lipodystrophy in HIV.*

Continuing Education Test

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To earn credit:

1. Read the CME article.
2. Review the objectives
3. Study and apply the content to the objectives and to your practice.
4. Complete the Post-Test.
5. Return the answer sheet to: Catherine D. Cushing, RN, BSN, Coordinator, HIV Clinical Education, Upper Hudson Primary Care Consortium, One Broad Street Plaza, P.O. Box 3253, Glens Falls, N.Y. 12801, (518) 761-0300 Fax (518)745-1378.

Note: This CME activity and quiz is designated for 1 credit.

Objectives: At the conclusion of this activity, the learner will be able to:

At the conclusion of this activity, the learner will be able to:

1. Describe the common nutrition-related problems associated with HIV and HAART.
2. Discuss optimal nutritional health strategies used to counter metabolic and morphologic complications.
3. Identify essential resources of nutrition guidance to assist in tailoring sound nutrition plans with patients.

Select the best answer for each of the following.

1. The introduction of HAART for the treatment of HIV/AIDS has complicated the nutritional management of HIV and concealed AIDS Wasting Syndrome making this more difficult to recognize.
   - ❒ a. True
   - ❒ b. False

2. Some nutrition-related issues faced by PLWHAs resulting from HAART include:
   - ❒ a. Lipodystrophy
   - ❒ b. Cardiovascular health
   - ❒ c. Bone health
   - ❒ d. Oral health
   - ❒ e. All of the above

3. Please list the local/regional resource(s) or experienced HIV nutritionist you use or plan to use for support of nutritional management of HIV patients.

   ____

   Resource   County

4. Advanced periodontal disease is common for HIV+ individuals since the progressive loss of immune function creates an environment in which oral bacteria can thrive.
   - ❒ a. True
   - ❒ b. False

5. Which of the following are recommended to reduce the occurrence of low bone mineral density? (Check all that apply.)
   - ❒ a. Smoking cessation
   - ❒ b. Weight resistance exercise
   - ❒ c. Alcohol consumption
   - ❒ d. Coffee consumption

Evaluation of CME Activity HIV Medical Alert Vol. 6, No. 3

Overall Activity	Excellent	Good	Fair	Need s Improvement
1. Was the subject matter well balanced in fact & theory?	1	2	3	4
2. Was the format clear and easy to read?	1	2	3	4
3. Did subject matter have sufficient detail?	1	2	3	4
4. Was subject matter valuable for practical application?	1	2	3	4
5. Were objectives met [Listed on reverse]?	1	2	3	4
6. Was the writer clear in content, sequence and style?	1	2	3	4

7. Overall program was? ____

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Comments/Topic Suggestions:

PLEASE PRINT CLEARLY TO ASSURE ACCURATE DOCUMENTATION OF CME CREDIT

Profession: ❐ Physician ❐ PA ❐ NP ❐ CNM ❐ RN ❐ LPN ❐ Other ______________________

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Address: ____

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Signature (please sign legibly for CME records)

Return the completed test and evaluation form to:

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