



THE ART OF HIV CARE

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The whole person

- Being “healthy” at all levels:
 - Physical self.
 - Emotional self.
 - Intellectual self.
 - Spiritual self.

The whole patient-a multidimensional approach

- Diet
- Exercise
- Vitamins
- Complimentary approach(eg acupuncture, herbs--be aware of drug interactions!!)
- Spirituality/positive attitude/emotions
- Western medicine



Diet

- Loss of weight(lean body mass/muscle) i.e. wasting (<66% IBW) is an independent factor associated with a poorer outcome (Kotler et al, 1989).
- HIV-associated malnutrition is not adequately addressed by reducing HIV viral load.



Exercise

- Aerobic(cardiovascular).
- Progressive resistance exercise.
 - Adds muscle mass.
 - In HIV positives, probably more important than aerobic exercise.



Exercise

- Aerobic exercise.
 - Appears to be safe and leads to significant cardiopulmonary fitness(Cochrane review, 2002).
- Resistance exercise.
 - Alone or in conjunction with anabolic steroids results in significant improvement in muscle mass(Bhasin et al, 2000; Grinspoon et al, 2001)



Management of metabolic complications and antiretroviral therapy

- Recommendations by IAS-USA Panel(2002):
 - Glucose intolerance- "... a healthy balanced diet and regular exercise..."
 - Lipid abnormalities- "...dietary guidelines... and increased physical activity or exercise..."
 - Body fat distribution- "Both aerobic and resistance exercise...should be encouraged...with central or generalized fat accumulation."



Vitamins

- Several studies have shown serum levels of vitamins A, B6, B12, E, beta carotene, selenium and zinc to be lower in HIV+ vs. HIV-.
- Observational data have shown that low blood levels of vitamins A, E, B12, selenium, and zinc are associated with a more rapid disease progression and death.



Vitamins

- In longitudinal studies involving asymptomatic HIV+, higher intake of vitamins B, C, and multivitamins was associated with improved CD4 cell counts, less disease progression, and decrease mortality.
- **Despite these observations, there have actually been only 2 randomized, double-blinded, placebo-controlled trials examining the benefits of vitamins in HIV individuals.**



Vitamins

- NEJM, 2004:
 - Africa: 1,078 pregnant HIV positive women enrolled in a randomized, double-blind, placebo-controlled study.
 - End points: disease progression, CD4 cell count, and HIV viral load.
 - All women received antenatal iron and folic acid.
 - CD4 cell count: 204 – 653 cells/mm³.
 - HIV viral load: log 4.56 to 4.66.
 - Median follow-up: 5.91 years.



Vitamins

- Randomized to one of four groups:
 - Vitamin A only
 - Multivitamins excluding vitamin A
 - Multivitamins + vitamin A
 - Placebo



Vitamins

- Results:

- Disease progression/death:

- Vitamin A 29%
 - Multivitamins + Vit A 26.1%
 - Multivitamins only 24%
 - Placebo 31%
 - Those who received multivitamins were less likely to progress to AIDS or death($P=0.04$).



Vitamins

■ Results

- The multivitamin group also had a significant reduction in URIs, oral and GI symptoms, rashes and fatigue compared to placebo.
- The multivitamin group had a CD4 cell count that was higher by 48 cell/mm³ and an HIV viral load that was lower by 0.18 log compared to placebo.
- Vitamin A alone did not differ significantly from placebo in terms of benefit.



Vitamins

- Despite the limited data on the benefits of multivitamins, it seems prudent for patients to take a daily multivitamin since data does show that vitamin levels tend to be lower in HIV positive individuals.



Complementary approaches

- 40-70% of HIV + patients use some form of complementary approach in addition to conventional treatment.
- The PROBLEM: In one study, 33% of clinicians did not know that their patients were using complementary therapy and in this same study, 25% of patients were using complementary therapy with the potential for adverse effects.



Complementary approaches

- Reasons for disconnect:
 - Clinician simply not asking.
 - Patient not wanting to disclose this information for fear of losing the respect of the clinician.



Complementary Medicine

- Alternative Medicine Care Outcomes In AIDS Study
 - 1,675 HIV patients, study took place between 1995-1997
 - Massage therapist 48.8 %
 - Acupuncturist 45.5 %
 - Prayer 58.3 %
 - Meditation 45.9 %
 - Garlic 53.0 %
 - Multivitamins 54.0 %



Complementary approaches

- Characteristics of HIV patients who tend to use complementary therapy:
 - Be more involved in the medical decision making process.
 - Have HIV for a longer period of time.
 - Have a negative attitude towards antiretroviral therapy.
 - Have progression of their HIV disease.
 - Have a higher income.
 - Have a higher level of education.
 - Be female.



Complementary approaches

- Reasons for complementary use:
 - Slow the progression HIV.
 - Enhance the immune system.
 - Relieve symptoms due to HIV or medications.
 - Supplement allopathic medicine(studies have shown that most patient do not replace allopathic medicine with complementary approach).



Complementary approaches

- How often do HIV patients see a complementary practitioner:
 - In a telephone survey involving 180 patients found that for the HIV patient who saw a complementary practitioner, the patient visited the complementary practitioner 12 times a year while visiting the primary provider 7 times a year.



Antiretroviral activity

- Calanolide A
 - Naturally occurring NNRTI isolated from a tropical tree (*Calophyllum lanigerum*) in the Malaysian rain forest.
 - 43 HIV patients enrolled in a 2 week, randomized, double-blind, placebo controlled study. At 600 mg bid, there was a mean HIV viral load reduction of 0.81 log₁₀ from baseline. This reduction was significantly greater when compared to the placebo group (P=0.027).



Antiretroviral activity

- Prostratin-phorbol ester derived from the plant, *Homalanthus nutans*.
- Healers in Western Samoa use this plant to treat yellow fever.
- In vitro, prostratin has been shown to induce expression of HIV from latently infected cells without causing de novo HIV infection of other CD4 cells.
- Potential: once a patient has full viral suppression with ART, prostratin could be given to patients to activate these latent reservoirs.



Antiretroviral therapy

- Shikonin

- Chinese herb derived from the dried root of the purple gromwell, *Lithospermum erythrorhizon*.
- In-vitro inhibits CCR5 a major coreceptor HIV needs to infect a human cell.



Neuropathy

- Acupuncture
 - NIH study(Shlay et al. JAMA, 1998) showed neither acupuncture nor elavil to be more effective than placebo in relieving HIV-related neuropathy.
 - Traditional acupuncture highly individualized and done in conjunction with herbs, diet, and exercise
- If the acupuncture is “working” for that individual then that is the most important consideration.



Neuropathy

- Jay et al. 11th CROI, San Francisco, 2004.
 - To assess the effect of smoking marijuana on pain due to HIV-related neuropathy.
 - 16 HIV patients smoked one 3.56%-tetrahydrocannabinol 3 times a day for 7 day.
 - Results: drop in pain score when compared to baseline scores and 10 patients experienced a >30% decrease in pain.



Diarrhea

SP-303

- Extract from sap of *Croton lechleri* tree that has been used by shamans in the Amazon rainforest to promote normal stool formation.



Diarrhea

- SP-303
 - Randomized, double-blind, placebo-controlled study involving 51 AIDS who had >200 grams of watery stool during a 24 hour period, no anti-diarrheal agents 24 hours prior to enrollment and stool assessed for pathogens(48/51 had no pathogens).
 - 26 patients received 500 grams of SP-303 orally qid for 4 days and 25 patients received a placebo.
 - When both groups compared over the 4 day study period, the treatment group had a significant decrease in stool weight($P=0.008$) and diarrhea frequency($P=0.04$) vs. placebo.



Cholesterol

■ Garlic

- Purportedly has anticholesterol activity.
- 10 healthy individuals took 3 days of saquinavir followed by garlic capsules bid for 3 weeks.
- Garlic decreased saquinavir levels by about 50%.
- Even after a 10 day wash out period, saquinavir blood levels remained 35% lower than baseline.
- Garlic should be used with caution in HIV individuals.



Cholesterol

- Cholestin

- Produced by red yeast fermented on rice.
- Contains 12 monacolins (statins) that inhibit HMG CoA reductase.
- Two controlled trials (one in USA, one in China) of cholestin involving 250 non-HIV patients showed a drop of LDL cholesterol and triglyceride by 20%-30%.
- Case report of cholestin-induced myopathy (South Med J, 2003).



Depression

- St. John's wort used for mild depression.
- St. John's wort decreased indinavir trough levels by 81%.
- St. John's wort decreased nevirapine blood levels by 20%.
- St. John's wort should not be used with protease inhibitors or NNRTIs.



Hepatitis

- Abnormal liver function tests are common in the HIV + population.
- Chronic hepatitis B and/or C, alcohol, infections, malignancies, and side effects from medications.
- Milk thistle(active ingredient-silymarin) commonly used for it's hepatoprotective or hepatorestorative properties.
- In 10 healthy individuals who took milk thistle and indinavir, mean indinavir trough levels decreased by 25%.
- Probably okay to use but with caution.



Spirituality

- Studies have shown that most patients want their spiritual needs to be addressed and welcome inquiry into their spiritual needs but <20% of physicians routinely take a spiritual history.



Spirituality

- In surveys inquiring about complementary therapy, up to 63% of HIV patients reported being involved in a spiritual activity.
- Most of the studies on spirituality have either been descriptive or exploratory.



Spirituality

- 202 HIV patients(62% AA, 38% caucasian; 54.5% men, 45.5% women) in St. Louis. Study was to determine sources that influenced patient's decision to take antiretroviral therapy(2001):
 - Physician most common source 60%
 - Prayer second most common source 12%
 - AAs more likely than caucasians to indicate prayer as the most important source.
 - Those indicating prayer as the most important source were less likely to use antiretroviral therapy.



Spiritual history

- Controversial.
- No specific formula or script:
 - Whether the patient has religious or spiritual beliefs that is of significance.
 - How these beliefs might affect the patient's decisions about medical care.
 - How these beliefs affects treatment choices.



Spirituality

- Spirituality/religious practices should not replace effective allopathic interventions.
- A patient who expresses an interest in discussing spirituality should be screened for and respected by the provider.
- If the clinician is uncomfortable in addressing the spiritual needs of the the patient, an appropriate referral should be made.



Complementary medicine

- Access to complementary therapy can be limited by cost and availability.
- Most health insurances do not cover complementary modalities so patients need to pay out-of-pocket.
- In on study, the average yearly out-of-pocket cost for complementary therapies in HIV patients was \$938.00.



Integrating complementary into the clinical practice.

- Taking a complementary medicine history can be part of the medication history.
- It is important to explain to your patient why you are asking about complementary therapy.
- It is important to be supportive, nonjudgemental, and willing to learn more about complementary therapies in order to have an open discussion with your patients.
- Clinicians can be an important source of accurate and unbiased information on complementary therapies.