

Issue Highlights

- **Carnitine and Acetyl Carnitine**
- **Questions And Answers on T-cells**
- **Nutrition for Healthy Living— Boston, MA**

Volume 6, Issue 6

May/June 2002

Carnitine And Acetyl Carnitine

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Complementary nutrition therapies for HIV/AIDS have come and gone over the course of the epidemic, but L-carnitine (or levocarnitine) has endured as a popular supplement. Early on, it was said to be an antiviral and T-cell booster. As effective antiretroviral medications became available, carnitine's use in HIV-disease evolved. It remained popular, but primarily for protection against or treatment of HIV-related neuropathy. And most recently it's been recommended as a therapy for abnormal fat metabolism and fat deposition. Its use has also expanded among the general public, as well as HIV-positive people, as a supplement to improve physical performance. Although evidence of its effectiveness is mainly anecdotal testimonials,

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Editor's Note

The National HIV/AIDS Nutrition Guidelines Working Group is progressing towards publication of National Nutrition Guidelines for HIV-positive people. The feature article in this issue is an expansion of a literature review completed by members of the Macronutrients, Micronutrients, and Non-Essential Dietary

Supplements subgroup. L-carnitine was chosen for review by the subgroup because it represents one of the most frequently used complementary nutrition products among people living with HIV infection. We look forward to publishing the results of literature reviews on other subjects being studied by this group in the future.



MED WATCH: Indinavir sulfate (Crixivan)

By William Palumbo, MS, RD, CDN

Pharmacologic Classification (600 mg once daily) for one week resulted in an 89% +9% decrease in Crixivan plasma concentration. Crixivan is an inhibitor of HIV infection. It is classified as a protease inhibitor.

Dosage and Administration The recommended dosage is 800 mg (two 400 mg capsules) orally every 8 hours. The dosage is the same whether Crixivan is used alone or in combination with other antiretroviral agents. It must be taken at intervals of 8 hours. For optimal absorption, take Crixivan without food but with water 1 hour before or 2 hours after a meal. Alternatively, Crixivan may be taken with other liquids such as skim milk, juice, or with a light meal, e.g. dry toast with jelly. To ensure adequate hydration, the patient should drink at least 1.5 liters (about 48 ounces) of liquids during the course of 24 hours.

Concomitant Administration Crixivan administration needs to be adjusted when the following medications are used in conjunction: Rifabutin, Ketoconazole, and Didanosine. Rifampin should not be coadministered with Crixivan. Administration of Crixivan (800 mg every 8 hours) with rifampin

Indications For Use Crixivan in combination with antiretroviral agents is indicated for the treatment of HIV infection. This indication is based on clinical trials that demonstrated: 1) a reduction in the risk of AIDS defining illnesses or death; 2) a prolonged suppression of HIV RNA.

Pharmacodynamics HIV protease is an enzyme required for the proteolytic cleavage of the viral polyprotein precursors into the individual functional proteins found in infectious HIV. Crixivan binds to the protease active site and inhibits the activity of the enzyme. This inhibition prevents cleavage of the viral polyproteins resulting in the formation of immature noninfectious viral particles.

Pharmacokinetics *Absorption:* Crixivan is rapidly absorbed in the fasted state with a time to peak plasma concentration of 0.8 to

0.3 hours. *Effects of Food on Oral Absorption:* Administration of Crixivan with a meal high in calories, fat, and protein (784 kcal, 48.6 grams fat, 31.3 grams protein) resulted in a 77% +8% reduction of plasma concentration. *Distribution:* Crixivan was approximately 60% bound to human plasma proteins. *Metabolism:* Seven metabolites have been identified, one glucuronide conjugate and six oxidative metabolites. In vitro studies indicate that cytochrome P450 3A4 (CYP3A4) is the major enzyme responsible for formation of the oxidative metabolites. *Elimination:* Less than 20% of Crixivan is excreted unchanged in the urine.

Drug Interactions *Special Populations: hepatic insufficiency-* Patients with mild to moderate hepatic insufficiency and clinical cirrhosis had evidence of decreased metabolism of Crixivan resulting in 60% higher plasma concentrations following a single 400 mg dose.

Warning: Nephrolithiasis has occurred with Crixivan therapy. In some cases,

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Editor's Corner

HIV Nutrition Update is a bimonthly newsletter of practical and timely nutrition resources. Features present peer-reviewed articles and practice-oriented reviews of essential information for the clinician working in HIV/AIDS care. Information is supplemented by news releases, conference proceedings, and expert recommendations.

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MED WATCH: Indinavir sulfate (Crixivan)

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nephrolithiasis has been associated with renal insufficiency or acute renal failure. **Adequate hydration is recommended** in all patients treated with Crixivan.

New onset diabetes mellitus, exacerbation of pre-existing diabetes mellitus and hyperglycemia have been reported during surveillance in HIV-infected patients receiving protease inhibitor therapy.

Adverse Reactions

Taste changes, nausea,

vomiting, regurgitation, abdominal pain, diarrhea, nephrolithiasis, asymptomatic hyperbilirubinemia (total bilirubin >2.5mg/dL), kidney stones, lipodystrophy, new onset diabetes mellitus, and hypertriglyceridemia.

Nutrient-Herb Interactions

Patients should avoid the use of St. John's Wort to limit possible nutrient-herb interactions.

Sources

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