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L-carnitine in the treatment of HIV infection. C. De Simone, G. Famularo*, S. Tzantzoglou°, S. Moretti°, F. Paoletti°, V. Vullo°, S. Delia°.Infectious Diseases and *Internal Medicine, L'Aquila; °Infectious Diseases, Rome, Italy.

Carnitine depletion could occur in AIDS patients, possibly contributing to the impaired immune response and wasting. We treated with either L-carnitine (6 gr. per day) (group A) or placebo (group B) for two weeks twelve AIDS (CDC IVC1) patients (32±5 yrs) with reduced lymphocyte carnitine content (1.6±0.5 vs 3.3±0.5 nmol/mg cell protein, in AIDS and healthy subjects, respectively, P<0.001). Both groups also received AZT (600 mg per day). L-carnitine treatment increased lymphocyte carnitine content (1.6±0.5 vs 2.1±0.5, P<0.05, and 1.6±5 vs 1.6±0.4 at base-line and after treatment, respectively, in group A and B) and was followed by an increased percentage of lymphocytes entering S and G2-M phases of DNA cycle after PHA stimulation (9±3 vs 14±3, P<0.002, and 8.4±2 vs 8.3±3 at base-line and after treatment, respectively, in group A and B). The elevated serum beta-2-microglobulin and triglycerydes (TG) at base-line were also reduced following L-carnitine, but not placebo, treatment (2,588±512 vs 1,902±451, P<0.05, and 2,404±514 vs 2,393±523 ug/L, NS, for beta-2-microglobulin, and 514±389 vs 339±279, P<0.05, and 532±390 vs 521±401 mg/dl, NS, for TG, at base-line and after treatment, respectively, in group A and B). Therefore, our results indicate that L-carnitine could ameliorate both the dysregulated immune response and the abnormal lipid metabolism in AZT-receiving AIDS patients.

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SYNTHESIS OF NEW CARBOCYCLIC ANALOGUES OF 3'-DEOXY-PURINE-RIBONUCLEOSIDES WITH POTENTIAL ANTIVIRAL ACTIVITY.

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Carbocyclic analogues of nucleosides seem to be an important group of anti-virus and anti-tumor agents, in particular against the CMV, HSV and HIV. As part of continuing research of new carbocyclic nucleosides which could have antiviral properties, we describe the complete synthesis of two new exocyclic amino carbocyclic nucleosides and of a new purine carbocyclic analogue. They are derivative compounds of biologically active nucleosides. The synthesis of such compounds occurs first by the formation of a functionalized cyclopentylamine, obtained by the opening of an epoxide, and then by the coupling of a purine or pyrimidine precursor on the amino group. The epoxidation of 1-hydroxy-methyl-3-cyclopentene which is the key step of our syntheses is governed by steric and electronic interactions. So, we have studied the stereoselectivity of the epoxidation by steric control using aryl or silyl 1-hydroxyl protecting groups. The opening of the epoxide ring *via* a trans addition with azide ion, then the reduction of the azido group by a catalytic hydrogenation gave the expected cyclopentylamine. The reaction of the amine with 4,6-dichloro-5-nitropyrimidine followed by some reactions, gave the refered products.The carbocyclic nucleosides obtained have been prepared quickly, regioselectively and with good yields from 1-hydroxymethyl-3-cyclopentene. The biological tests were performed by The Wellcome Research (Beckenham).