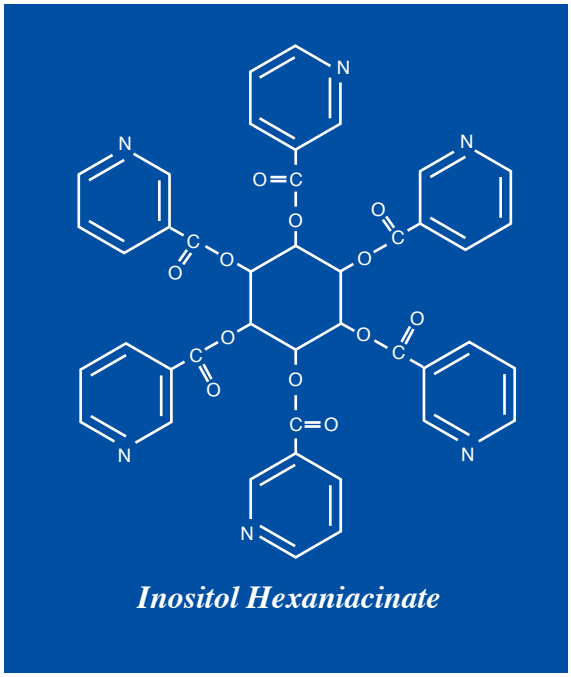

Inositol Hexaniacinate

Introduction

Inositol hexaniacinate (IHN), also known as inositol hexanicotinate and inositol nicotinate, is the hexanicotinic acid ester of meso-inositol. This compound consists of six molecules of nicotinic acid (niacin) with an inositol molecule in the center (see figure). Pharmacokinetic studies indicate the molecule is, at least in part, absorbed intact, and hydrolyzed in the body with release of free niacin and inositol.[1] It appears to be metabolized slowly, not reaching maximum serum levels until approximately 10 hours after ingestion.[2]

Mechanisms of Action

Inositol hexaniacinate's actions in the body are believed to be the same as those for niacin. These include initiating a decrease in free fatty acid mobilization; a decrease in very-low-density lipoprotein (VLDL) synthesis in the liver resulting in a decrease in LDL cholesterol, total cholesterol, and triglycerides; inhibition of cholesterol synthesis in the liver; an increase in high-density lipoprotein (HDL) levels by decreasing its catabolism;[3] and fibrinolysis.[4,5]

Clinical Indications

Hyperlipidemia

Studies report significant lipid-lowering effects of IHN at doses of 400 mg 3-4 times daily.[6] Welsh and Eade found IHN more effective than niacin in its hypocholesterolemic, antihypertensive and lipotropic effects.[2]

Raynaud's Disease

A review of the literature reveals numerous positive studies on the use of IHN in Raynaud's Disease.[2,4,5,7-9] The mechanism of action appears to be more than just a transient vasodilation, involving lipid-lowering and fibrinolysis.[4,5] This explains the need for long-term administration.

Intermittent Claudication

The use of niacin esters for the treatment of intermittent claudication secondary to atherosclerosis has been examined extensively. Significant improvement has been reported by several investigators at dosages of 2 grams twice daily, typically for at least three months.[10-13] While arterial dilation may be a factor, it has been postulated that reduction in fibrinogen, improvement in blood viscosity, and resultant improvement in oxygen transport are involved in the therapeutic effects.[11]

Other Peripheral Vascular Diseases

IHN appears to have application in the treatment of other conditions resulting from peripheral vascular insufficiency, including threatened amputation from gangrene, restless leg syndrome, stasis dermatitis, atherosclerosis-related migraines, and hypertension.[2]

Dermatological Conditions

IHN has been used for the treatment of various dermatological conditions, including scleroderma, acne, dermatitis herpetiformis, exfoliative glossitis, and psoriasis. IHN appeared to help four out of five patients with dermatitis herpetiformis.[2] One patient with sclerodermal skin lesions was reported to have improved significantly on 1200 mg IHN daily.[2] Results with other skin conditions have been less promising. It appears the dermatological problems most benefited by IHN are those related to vascular insufficiency.[2]

Drug-Nutrient Interactions

Although no adverse reactions between inositol hexaniacinate and other nutrients or drugs have been reported, due to its fibrinolytic effect it should be used with caution in conjunction with anticoagulant medications.

Side Effects and Toxicity

No adverse effects have been reported from the use of inositol hexaniacinate in dosages as high as 4 grams daily.[4,6,8,9] Conversely, numerous toxic reactions, both acute and chronic, have been reported from the use of other forms of high-dose niacin. Reactions to niacin range from acute symptoms of flushing, pruritis, and GI complaints to chronic symptoms of hepatotoxicity,

hyperuricemia, and impaired glucose tolerance. Despite the lack of reported adverse reactions, use of IHN in patients with known liver disease should be avoided. In addition, if high doses (2 grams or greater daily) are being administered, liver enzymes should be monitored every 2-3 months for at least the first six months.

Dosage

The typical dosage for Raynaud's disease is 1 gram four times per day for several months.

Recommended dosage for lipid-lowering and improving conditions related to peripheral vascular insufficiency ranges from 1500 mg to 4 grams daily, in divided dosages of two to three times daily.

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