

What Should I Know About Niacin Preparations and Dyslipidemia?

Question

I have read conflicting reports regarding the use of various niacin preparations for dyslipidemia. Would you describe the effectiveness of niacin, nicotinic acid, inositol, and niacinamide?



Response from **W. Lane Edwards, Jr., MSN, ARNP, ANP**

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You have asked an excellent and timely question, as the data from the *Arterial Biology for the Investigation of the Treatment Effects of Reducing Cholesterol* (ARBITER 2) study provide an excellent look at the impact of combination therapy for the treatment of dyslipidemias.^[1] ARBITER 2 has shown us that the addition of extended-release niacin (*Niaspan*) 1000 mg to statin therapy for the treatment of dyslipidemias slows the progression of atherosclerosis compared with statin monotherapy in patients with coronary artery disease and low levels of high-density lipoprotein.^[1]

Niacin is a water-soluble B vitamin and the common name for 2 very different compounds: nicotinic acid (used for cholesterol management) and niacinamide (used for those with diabetes/arthritis). Three preparations of nicotinic acid (which have been used for cholesterol management) are available as nutritional supplements or prescription medications: immediate-release (*Niacor*), extended-release (*Niaspan*, *Advicor* -- by prescription), and slow-release (*Endur-Acin*), and inositol niacinate (*Niacinol*), to name a few.

It may help to first clarify that niacin, in doses less than 100 mg, is usually considered a nutritional supplement, requiring no evidence to support claims as to the efficacy or outcomes of taking this product. Also, over-the-counter (OTC) products differ from nutritional supplements in that nutritional supplements are not regulated by the US Food and Drug Administration (FDA).

The claims for OTC use are^[2]:

- Niacin -- lowers cholesterol and triglycerides;
- Niacinamide -- prevents/treats diabetes;
- Inositol niacinate -- improves circulation; and
- Niacinamide -- relieves arthritis.

Issues arise with the type of niacin used in the treatment of dyslipidemia when *therapeutic doses* of niacin (greater than 100 mg/day) are needed to alter the lipid profile. Safety and efficacy are major concerns when dosages exceed 100 mg daily. For example, niacin taken in high doses (500-3000 mg) is known to cause a wide range of adverse effects. Although the slow-release forms of niacin (*Endur-Acin*) and inositol niacinate (*Niacinol*) do not cause skin itching, flushing, hypotension, lightheadedness, or tachycardia that can be associated with the immediate-release forms, the efficacy in treating dyslipidemias has not been proven.

The slow-release forms of niacin also have greater potential for hepatotoxicity; otherwise, there are minimal side effects, but also minimal reported efficacy. The inositol niacinate form of niacin may be less likely to cause the liver toxicity than

the timed-release forms.^[2]

There are no OTC niacin products that have been approved by the FDA according to the Orange Book.^[3] Many of the items you ask about are considered dietary supplements and are regulated loosely and vary widely in their content. I concur with the following quotation found in a summary article regarding niacin use: "Given the degree of toxic effects encountered, we believe that allowing niacin to remain on the nonprescription market, where it may be used in high doses for cholesterol lowering without proper monitoring by trained health professionals, presents a potentially serious public health problem."^[4]

The research trial data are clear that prescription niacin, such as niacin extended-release (*Niaspan* or *Advicor*), is efficacious and safe and should be the niacin product used to improve dyslipidemias. Patients who understand that the efficacy and safety are not documented with "health" food-type nutritional supplements have no difficulty using prescription niacin (*Niaspan*, *Advicor*). I find that spending a little extra time reviewing with patients using prescription niacin about administration techniques (taking niacin at bedtime, taking aspirin at dinner, avoiding food and drinks that result in a vasoactive response such as hot spicy foods, hot liquids, alcohol, etc. in the evening) will significantly diminish the side effects of flushing and itching during the initial 14 days of therapy.

References

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4. McKenney JM, Proctor JD, Harris S, Chinchili VM. A comparison of the efficacy and toxic effects of sustained-vs. immediate-release niacin in hypercholesterolemic patients. *JAMA*. 1994;271:672-677. [Abstract](#)

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