Rush Hemophilia & Thrombophilia Center

Guidelines for Niacin Therapy For the Treatment of Elevated Lipoprotein a (Lp^a)

August 15, 2002, Revised July 27, 2005

Lipoprotein "little" a (Lp^a) is a distinct class of serum lipoproteins that consists of an LDL particle to which a long polypeptide chain is attached by a disulfide bridge. The level of Lp^a is genetically determined and is linked to the plasminogen gene. An association between Lp^a and atherosclerotic heart disease, cerebrovascular and peripheral arterial disease has demonstrated in several studies although the role of Lp^a as a cardiovacular risk factor remains controversial. Lp^a appears to have atherogenic as well as thrombogenic properties and may bridge atherogenesis and thrombogenesis. Because of its structural similarity to plamsminogen, Lp^a inhibits plasminogen binding of fibrin and endothelial cells interfering with fibrinolysis and enhancing thrombus formation. Although the levels of Lp^a in the blood are genetically determined, there is a component of the elevation due to an "acute phase" repsonse. Niacin supplementation has been shown to reduce the levels of Lpa in the blood and may have a protective effect against atherogeneis and thrombogenesis. The following recommendations are provided based on data available in the published literature. No randomized controlled trials have been performed to prove the effectiveness of Niacin supplementation.

Precautions

Niacin therapy impairs mylelination and therefore should be avoided during pregnancy. Safety and effectiveness of niacin therapy in pediatric patients (less than 16 years old) have not been established. No studies in patients under 21 years of age have been conducted with NIASPAN.

Patients with a history of hypersensitivity to niacin products or known liver disease should not receive Niacin therapy.

Adverse Reactions

NIASPAN is generally well tolerated; adverse reactions have been mild and transient and include the following:

- **facial flushing** is a common side effect of niacin therapy that usually subsides after several weeks of consistent niacin use
- **pruritus** (itching)
- **dizziness**
- **palpitations**
- **shortness of breath**
- **sweating**
- **chills**
- **edema** (leg swelling)
- **GI upset** (stomach ache)
- **Hepatotoxicity** (liver inflammation)
  NIASPAN should be used with caution in patients who consume substantial quantities of alcohol and/or have a past history of liver disease. Active liver diseases or unexplained transaminase elevations are contraindications to the use of NIASPAN.

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Dosage forms

Niacin is supplied as a 500-mg sustained-release tablet (NIASPAN®) and as 100 mg, 250 mg, 50 mg, 500 mg, 750 mg tablets.

Adult recommendations

Week 0

Check liver enzymes (ALT, AST, LDH) and repeat Lp^a prior to Niaspan therapy.

Week 1-2

Niaspan, 500-mg controlled-release niacin capsules, one capsule at bedtime.

Week 3-4

Niaspan, 750 mg at bedtime.

Check liver enzymes (ALT, AST, LDH) at the end of the 4th week (day 28)

Week 5-10

Niaspan, 1000 mg at bedtime and continue at this dose for six weeks.

Recheck Lp^a at the end of the 10th week (day 70)

Week 11-16

Niaspan, 1500 mg at bedtime and continue at this dose for six weeks.

Check liver enzymes (ALT, AST, LDH) at the end of the 16th week (day 112)

Week 17-

Niaspan, 2000 mg at bedtime and continue at this dose indefinitely.

Check liver enzymes (ALT, AST, LDH) every 6 months.

Repeat Lp^a yearly.

Pediatric recommendations

Week 0

Check liver enzymes (ALT, AST, LDH) and repeat Lp^a prior to Niaspan therapy.

Week 1-2

Niacin, 50 mg/M^2/dose given three times daily.

Week 3-4

Niacin, 100 mg/M^2/dose given three times daily.

Check liver enzymes (ALT, AST, LDH) at the end of the 4th week (day 28)

Week 5-10

Niacin, 150 mg/M^2/dose given three times daily and continue for six weeks.

Recheck Lp^a at the end of the 10th week (day 70)

Week 11-16

Niacin, 250 mg/M^2/dose given three times daily and continue for six weeks.

Check liver enzymes (ALT, AST, LDH) at the end of the 16th week (day 112)

Week 17- onward

Niacin, 333 mg/M^2/dose given three times daily and continue indefinitely.

Check liver enzymes (ALT, AST, LDH) every 6 months.

Repeat Lp^a yearly.