ALPHA LIPOIC ACID (ALA)

THERAPEUTICS

Brands
- Multiple, available and sold over-the-counter without a prescription as nutritional agent

Generic
- Alpha lipoic acid
- Lipoic acid
- Lipolate
- Thiotic acid
- Dihydrolipoic acid

Class
Antioxidant and anti-neuropathic pain supplement

Used for
Possible beneficial effects for
- Cardiovascular disease
- Neuropathic pain
- Diabetic neuropathy
- Burning mouth syndrome
- Migraine
- Chronic wound healing
- Metabolic syndrome
- Age-related cognitive dysfunction
- Inflammation
- Multiple sclerosis
- Chronic diseases associated with oxidative stress

How the Drug Works
- Oxidative stress is an important determinant of neuropathological changes leading to neuropathic pain states. Only the R-(+)-enantiomer of ALA (RLA) exists intracellularly and this is an essential cofactor of four mitochondrial enzyme complexes, necessary to turn glucose into energy. RLA is a potent endogenous antioxidant. Prevention and treatment of neuropathy may require adequate cellular levels of RLA

How Long until It Works
Undetermined. May be used in cycles

If It Works
- Treatment cycles can be repeated

If It Doesn’t Work
- Alternative supplements, anti-inflammatory, or analgesic medications as per physician’s recommendations

Best Augmenting Combos for Partial Response or Treatment-Resistance
- In combination with current analgesic agents or other nutrapharmaceutical agents

Tests
- Undetermined

ADVERSE EFFECTS (AEs)

- Skin rash, GI disturbances

How Drug Causes AEs
- Undetermined

Life-Threatening or Dangerous AEs
- None reported

Weight Gain
- Unlikely

What to Do About AEs
- Lower dose or discontinue ALA and resume it later at half the dose

DOSING AND USE

Usual Dosage Range
- For antioxidant support: 50–100 mg/day
- For chronic pain and other disorders: 400–800 mg/day in divided doses

Dosage Forms
- Multiple

How to Dose
- No need to titrate

Overdose
- Unknown

Long-Term Use
- Recommended to be taken in cycles

Habit Forming
- No
How to Stop
• No need for tapering schedule

Pharmacokinetics
Lipoic acid is considered to be an essential nutrient, found in almost all foods. However, lipoic acid is always covalently bound and not immediately available from dietary sources. Baseline levels (prior to supplementation) of RLA have not been detected in human plasma
• 30% oral bioavailability

Drug Interactions
• Hypoglycemic agents: ALA can interact with these drugs, raising the risk of hypoglycemia or low blood sugar; may need to adjust medication doses
• Chemotherapy: ALA may interfere with some chemotherapeutic agents
• Levothyroxine: ALA may lower levels of thyroid hormone. Need to monitor thyroid function

SPECIAL POPULATIONS

Renal Impairment
• Undetermined

Hepatic Impairment
• Undetermined

Cardiac Impairment
• Undetermined

Elderly
• Reportedly well tolerated

Children and Adolescents
• ALA has not been studied in children, so it is not recommended for pediatric use

Pregnancy
• Not recommended in pregnancy

Breast-Feeding
• Not recommended

THE ART OF PAIN PHARMACOLOGY

Potential Advantages
• Adjuvant therapy for neuropathic pain, CRPS/RSD, burning mouth pain syndrome, and migraine in combination with current standard therapies

Potential Disadvantages
• Unknown

Primary Target Symptoms
• Can be used as a nutritional supplement in patients with painful neuropathies, burning mouth syndrome, and for migraine prophylaxis

Pearls
• ALA and acetyl-L-carnitine may have a synergistic effect on neuropathic pain
• There are several lines of evidence that ALA and acetyl-L-carnitine can reverse age-related markers in old rats to youthful levels
Suggested Reading


