Firdapse (amifampridine)
Introduction

- **Brand name:** Firdapse
- **Generic name:** Amifampridine
- **Pharmacological class:** Potassium channel blocker
- **Strength and Formulation:** 10mg; scored tabs
- **Manufacturer:** Catalyst Pharmaceuticals
- **How supplied:** Tabs—60, 240; Blister packs—10, 120
- **Legal Classification:** Rx
Indication

- Lambert-Eaton myasthenic syndrome (LEMS)
Dosage & Administration

- Initially 15–30mg daily in 3–4 divided doses
- May increase by 5mg every 3 or 4 days
  - Max 80mg/day
  - Max single dose: 20mg
Hepatic or renal impairment (CrCl 15–90mL/min), NAT2 poor metabolizers: 15mg daily in 3 divided doses
Considerations for Special Populations

- **Pregnancy**: No data on developmental risk in pregnant women
- **Nursing mothers**: Consider benefits of breastfeeding with potential adverse effect on infant
- **Pediatric**: Not established
- **Elderly**: Insufficient number studied
- **Hepatic or renal impairment**: See Dosage; monitor and adjust dose or discontinue as needed
Contraindications

- History of seizures
Warnings/Precautions

- Consider dose **reduction** or **discontinuation** if seizure occurs
- **Discontinue** and treat if anaphylaxis occurs
- **N-acetyltransferase 2 (NAT2)** poor metabolizers
Interactions

- Concomitant drugs that lower **seizure threshold** may increase seizure risk

- Drugs with **cholinergic effects** (e.g., direct or indirect cholinesterase inhibitors); additive cholinergic effects with concomitant use which may increase risk for adverse reactions
Adverse Reactions

- Paresthesia
- Upper respiratory tract infection
- Abdominal pain
- Nausea
- Diarrhea
- Headache
- Elevated liver enzymes
- Back pain
- Hypertension
- Muscle spasms
- Seizures
- Hypersensitivity
Mechanism of Action

- The mechanism by which amifampridine exerts its therapeutic effect in LEMS patients has not been fully elucidated.
- Amifampridine is a broad spectrum potassium channel blocker.
Clinical Studies

- The efficacy and safety of Firdapse for the treatment of LEMS was evaluated in 2 randomized, double-blind, placebo-controlled discontinuation studies (Study 1 and Study 2)
Clinical Studies

- Co-primary measures of efficacy in both studies:
  - Change from baseline to end of discontinuation period in the Quantitative Myasthenia Gravis (QMG) score
  - Change from baseline to end of discontinuation period in the Subject Global Impression (SGI) score
In **Study 1** (N=38), efficacy was assessed at Day 14 of the double-blind period

- **QMG scores** changed by 0.4 in the Firdapse group vs 2.2 in the placebo group (difference -1.7, 95% CI, -3.4, 0.0; \( P = .045 \))
- **SGI scores** changed by -0.8 in the Firdapse group vs -2.6 in the placebo group (difference 1.8, 95% CI, 0.7, 3.0; \( P = .003 \))
In **Study 2** (N=26), efficacy was assessed at Day 4 of the double-blind discontinuation period

- **QMG scores** did not change in the Firdapse group vs 6.54 in the placebo group (difference -6.54, 95% CI, -9.78, -3.29; \(P = .0004\))

- **SGI scores** changed by -0.64 in the Firdapse group vs -3.59 in the placebo group (difference 2.95, 95% CI, 1.53, 4.38; \(P = .0003\))
In both studies, the clinical global impression improvement (CGI-I) score was significantly greater for patients in the placebo group vs patients who continued treatment with Firdapse.

This indicates a greater worsening of clinical symptoms in patients who were randomized to placebo and discontinued from Firdapse treatment vs patients who continued Firdapse in the double-blind period.

For more clinical trial data, see full labeling.
For more information view the product monograph available at:

https://www.empr.com/drug/firdapse/