

LAB NOTES



TRILEPTAL® (oxcarbazepine)

Trileptal®, an anticonvulsant or antiepileptic drug (AED), was FDA approved January 2000 for use as an adjunctive and monotherapy for treatment of partial seizures in adults with epilepsy. It can be used in combination with other seizure medications in children as young as four years old. It is the first AED to be approved as a monotherapy in several years.

Trileptal® is similar in makeup to the front line trigeminal neuralgia (TN) drug Tegretol® (carbamazepine). It is as effective as Tegretol® but with fewer side effects. Trileptal® goes to work faster than Tegretol® and seems to cause less sluggishness and fewer skin allergies than Tegretol®. Studies show pharmacoeconomic benefits with Trileptal®. According to two studies presented at the 5th European Congress on Epileptology, Trileptal® was associated with fewer treatment-related adverse events and lower healthcare-related costs than Tegretol®. These studies directly compared the cost associated with the incidence of adverse events and healthcare utilization. The studies showed that by reducing adverse events, costs of hospitalization reduced by an average of 11 percent. Results of these studies suggest that treatment with Trileptal® is a good option, in terms of both tolerability and cost effectiveness.

The most common side effects associated with Trileptal® include headache, fatigue, nausea, dizziness, and hyponatremia (low serum sodium level). Patients taking any other medication that may also lower the level of sodium in their blood (e.g. Tegretol®, Diabinese®, Diuretics, Octreotide, Vincristine) in conjunction with Trileptal® should monitor their sodium levels during treatment.

The pharmacological activity of Trileptal® is primarily exerted through the 10-monohydroxy metabolite (MHD) of oxcarbazepine. The precise mechanism by which oxcarbazepine and MHD exert their anti-seizure effect is unknown; however in vitro electrophysiological studies indicate that they produce blockade of voltage-sensitive sodium channels, resulting in the stabilization of hyperexcited neural membranes, inhibition of repetitive neuronal firing, and diminished propagation of synaptic impulses. These actions are thought to be important in the prevention of seizure spread in the brain. In addition increased potassium conduction and modulation of high-voltage activated calcium channels may contribute to the anticonvulsive effects of the drug.

Trileptal® levels can be measured with a simple blood specimen. A green top tube is required and normally requires a 3-5 day turn-around time for result reporting.



The Lab-in-a-Box™

1. "Drug Name: Trileptal™ (oxcarbazepine) Tablets" Center Watch: Clinical Trials Listing Service. pg1-4, www.centerwatch.com/patient/drugs/dru599.html, copy right 1995-2000.
2. "Trileptal: New Drug Showing Promise in Treatment of TN", pg.1, www.tnasupport.org/Tnalert/trile.html. (unattributed) TN Alert, Fall 1994
3. "Studies Show Pharmacoeconomic Benefits with Trileptal" Doctor's Guide, pg.1-2, www.docguide.com/news/content.nsf/NewsPrint/, Copyright 2003
4. "Trileptal Consumer Information" www.fda.gov, pg.1-2 Posted 12-12-00 Updated 6-18-01