AAN Guideline Summary for CLINICIANS

# EFFICACY AND TOLERABILITY OF THE NEW ANTIEPILEPTIC DRUGS, I: TREATMENT OF NEW ONSET EPILEPSY

This is a summary of the American Academy of Neurology's (AAN) and the American Epilepsy Society's (AES) guideline assessing the evidence regarding seven new antiepileptic drugs (AEDs). This data can facilitate clinician choice of the appropriate drug for a given individual based on understanding of each drug's pharmacology, side effect profile, and risks.

The purpose of this assessment is to provide clinicians with evidence-based data on the efficacy and safety for the seven newest AEDs. Data for the drugs—gabapentin, lamotrigine, levetiracetam, oxcarbazepine, tiagabine, topiramate, and zonisamide—were reviewed in the treatment of children and adults with newly diagnosed partial seizure disorders and primary generalized epilepsy.

This parameter is the first in a two-part assessment of the new AEDs. Part II addresses the use of new AEDs in refractory epilepsy patients.

These guidelines compared the newer drugs to the older AEDs. Both new and old drugs are generally equally effective in new onset epilepsy. The newer drugs tend to have fewer side effects. This guideline did not evaluate the effectiveness of other medications and treatments for epilepsy. This summary is based on a careful and complete look at the current data. It is designed to provide a strategy to make decisions in patient care. It is not intended to exclude any reasonable alternative treatment.

Please refer to the full guideline and Part II for more information at *www.aan.com/professionals/practice/index.cfm*

## SUMMARY OF EVIDENCE-BASED GUIDELINE RECOMMENDATIONS FOR NEWLY DIAGNOSED EPILEPSY

- Patients with newly diagnosed epilepsy who require treatment can be initiated on standard AEDs such as carbamazepine, phenytoin, valproic acid/divalproex, phenobarbital, or on the new AEDs gabapentin, lamotrigine, oxcarbazepine, or topiramate. Choice of AED will depend on individual patient characteristics **(Level A[§])**.
- Lamotrigine can be included in the options for children with newly diagnosed absence seizures **(Level B)**.

## SUMMARY OF EVIDENCE FOR AEDs IN THE TREATMENT OF NEWLY DIAGNOSED EPILEPSY

| AED | Monotherapy Partial/Mixed | Diagnosed Absence |
|---|---|---|
| Gabapentin | Yes** | No |
| Lamotrigine | Yes** | Yes** |
| Levetiracetam | No | No |
| Oxcarbazepine | Yes | No |
| Tiagabine | No | No |
| Topiramate | Yes** | No |
| Zonisamide | No | No |

**not FDA approved for this indication

## SUMMARY OF ADVERSE EVENTS ASSOCIATED WITH THE NEW AEDs

| AED | Adverse Events | |
|---|---|---|
| | ***Serious*** | ***Non-serious*** |
| Gabapentin | None | Weight gain, peripheral edema, behavioral changes* |
| Lamotrigine | Rash, including Stevens Johnson syndrome and toxic epidermal necrolysis (increased risk for children, also more common with concomitant valproate/divalproex use and reduced with slow titration); hypersensitivity reactions, including risk of hepatic and renal failure, DIC, and arthritis | Tics* and insomnia |
| Levetiracetam | None | Irritability/behavior change |
| Oxcarbazepine | Hyponatremia (more common in elderly), rash | None |
| Tiagabine | Stupor or spike wave stupor | Weakness |
| Topiramate | Nephrolithiasis, open angle glaucoma, hypohidrosis* | Metabolic acidosis, weight loss, language dysfunction |
| Zonisamide | Rash, renal calculi, hypohidrosis* | Irritability, photosensitivity, weight loss |

*predominantly children

Note: This is not meant to be a comprehensive list, but represents the most common adverse events, based on consensus of panel

Note: Psychosis and depression are associated with epilepsy and occur in open label studies with all new AEDs. Although these side effects may appear more commonly with some drugs than with others, it is difficult to ascertain whether these relationships are causal. Consequently, these side effects have been omitted from the table.

This guideline summary is evidence-based. The AAN uses the following definitions for the level of recommendation and classification of evidence. §Recommendation Level: "Level" refers to the strength of the practice recommendation based on the reviewed literature. **Level A:** Established as effective, ineffective or harmful or as useful/predictive or not useful/predictive; **Level B:** Probably effective, ineffective or harmful or useful/predictive or not useful/predictive; **Level C:** Possibly effective, ineffective or harmful or useful/predictive or not useful/predictive; **Level U:** Data inadequate or conflicting; treatment, test, or predictor unproven.



**Copies of this summary and a companion patient version are available at *www.aan.com/professionals/practice/index.cfm* or through Member Services at (800) 879-1960.**

**342 North Main Street • West Hartford, CT 06117**
***www.aesnet.org***
***(860) 586-7505***

**1080 Montreal Avenue • St. Paul, MN 55116**
***www.aan.com • www.thebrainmatters.org***
***(651) 695-1940***