

## Guidelines for Anesthesia and Surgery in Epilepsy Patients

### University of Virginia Comprehensive Epilepsy Program

Antiepileptic drugs (AEDs) cause unique considerations for patients with epilepsy because skipping, or even delaying, a single dose can result in seizures. Strategies for avoiding or minimizing skipped doses are paramount in the care of patients with epilepsy. You can give this guide to your anesthesiologist.

- **AEDs should be taken early in the morning before surgery, even if you are otherwise NPO.** Patients should be advised to take their AEDs with less than one ounce of water. The timing of medication administration is more complicated for patients who must take medications with applesauce or similar solids. In this case, the medication can be administered 6 hours (or as early as possible) before surgery; however, the subsequent dose must still be given as close to on-time as possible. Thus, the risk of seizures if the medication is not given must be weighed against the risk of aspiration if solids are given close to surgery.
- **If patients have missed doses of AEDs then seizures may emerge when anesthesia wears off.** There is little risk of seizures during general anesthesia because anesthetic agents (GABA agonist) inhibit the firing of neurons, although sevoflurane can rarely precipitate seizures. There is generally no increased risk of seizures upon awakening from anesthesia.
- **If even a single AED dose cannot be given orally then the AED should be given by another route.** This may occur because the patient is under anesthesia during prolonged surgery or is unable to swallow in the post-operative period. AEDs that are available in IV form include phenytoin (Dilantin), levetiracetam (Keppra), lacosamide (Vimpat), valproate (Depakote), and phenobarbital. Other AEDs that are not available in IV formulation include carbamazepine (Tegretol), oxcarbazepine (Trileptal), topiramate (Topamax), and lamotrigine (Lamictal).
- **Lorazepam or another benzodiazepine should be administered on a standing basis if the patient can't be given their usual AED by the IV route.** It must be administered at the time their usual AED would be given or simultaneous with the end of general anesthesia. IV doses of benzodiazepines should not be delayed until seizures occur because, obviously, it is then too late to prevent the seizure.
- **There are times when patients cannot take their AEDs for prolonged periods, e.g. in the ICU or after GI surgery.** Switching to an AED that is available in IV form is the simplest solution. For some epilepsy patients, only their unique combination of AEDs will prevent their seizures. These AEDs must be given if the patient will miss more than 2 doses of their usual AED even if the AED is not available in IV form. Alternative methods of administration include through an NG tube or giving oral formulations per rectum.