REVIEW & UPDATE
IN THE TREATMENT OF EPILEPSY

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TODAY’S TOPICS

• Rescue Treatment of seizure > 5 min.
  • “time is brain”
  • Mortality rate
    • 2.6% 10-29 minutes
    • 19% > 30 minutes

• New Antiepileptics
  • Information
  • Warnings for antiepileptics
  • Warnings in general – “black box”

• Vagal Nerve Stimulator

• Insulin technique
OVERVIEW OF NASAL DELIVER

- Seizures > 5 minutes – status epilepticus
  - midazolam, lorazepam
- Sedations
  - midazolam, lorazepam
- Pain Control
  - fentanyl
- Opiate overdose
  - naloxone
Full Nasal Kit - Store in one place
Pull back syringe plunger until it has air filled to volume needed

Pop Cap off

Puncture Rubber Seal

Tip Over & Inject Air

Twist off/disconnect syringe

Connect Atomizer

Connect tightly with twisting motion
Seizure Therapy


- Prospective study: IN midazolam versus IV diazepam for prolonged seizures (>10 minutes) in children.
- Similar efficacy in stopping seizures (app. 90%).
- Time to seizure cessation:
  - IV Valium: 8.0 minutes.
  - IN Versed: 6.1 minutes.
- Conclusions: IN midazolam controls seizures more rapidly because there is no delay in establishing an IV.
Fig. 1. Mean midazolam plasma concentration–time logarithmic curves after midazolam 0.2 mg kg⁻¹ in children. 
◆ = Group V (i.v.); ■ = group N (nasal); ▲ = group R (rectal).
Step 2

Step 3

Epistatus

Buccolam

For children aged 10 years to less than 18 years
For children aged 5 years to less than 10 years
For children aged 1 year to less than 5 years
For children aged 3 months to less than 1 year

For oromucosal use only
4 pre-filled oral syringes of 2ml
4 pre-filled oral syringes of 1.5ml
4 pre-filled oral syringes of 1ml
4 pre-filled oral syringes of 0.5ml
NEW ANTIEPILEPTICS

• Perampanel  Fycompa  Oct 2012
• Clobazam   Onfi       Oct 2011
• Ezogabine  Potiga     Jun 2011
• Vigabatrin Sabril     Aug 2009
• Rufinamide  Banzel     Nov 2008
• Lacosamide  Vimpat     Oct 2008
Not illustrated:
- Vigabatrin → GABA degradation and drugs with multiple mechanisms:
  - Valproate → GABA turnover, Na⁺ channels, NMDA receptors
  - Topiramate → Na⁺ channels, AMPA/kainate receptors, GABA₆ receptors
  - Felbamate → Na⁺ channels, GABA₆ receptors, NMDA receptors
FYCOMPA may cause mental (psychiatric) problems, including:

- new or worse aggressive behavior (including homicidal behavior), hostility, anger, anxiety, or irritability
- being suspicious or distrustful (believing things that are not true)
- other unusual or extreme changes in behavior or mood

Tell your healthcare provider right away if you have any new or worsening mental problems while taking FYCOMPA.

**Safety Announcement**

[04-26-2013] The U.S. Food and Drug Administration (FDA) is warning the public that the anti-seizure medication Potiga (ezogabine) can cause blue skin discoloration (See Photos) and eye abnormalities characterized by pigment changes in the retina. FDA does not currently know if these changes are reversible. All patients taking Potiga should have a baseline eye exam, followed by periodic eye exams. FDA is working with the manufacturer to gather and evaluate all available information to better understand these events. FDA will update the public when more information is available.

1. **Permanent vision damage:**

   SABRIL can damage the vision of anyone who takes it. The most noticeable loss is in your ability to see to the side when you look straight ahead (peripheral vision). If this happens, it will not get better. People who take SABRIL do not lose all of their vision, but some people can have severe loss particularly to their peripheral vision. With severe vision loss, you may only be able to see things straight in front of you (sometimes called “tunnel vision”). You may also have blurry vision.
A Brief Overview of
Risk Evaluation & Mitigation Strategies (REMS)
FDA: BLACK BOX

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Potiga Approval Includes REMS, Controlled Substance Review

Drug Industry Daily

The FDA has approved GlaxoSmithKline (GSK) and Valeant's seizure treatment Potiga, but will require a risk evaluation and mitigation strategy (REMS) and is recommending classification as a controlled substance.
A pacemaker-like device (called a generator) sends stimulation through a flexible wire (called a lead).

The lead connects to the vagus nerve, which then carries this stimulation the rest of the way to the brain.
PRN — Magnet
Use to stop any seizure
WASH HANDS AND VERIFY INSULIN

• Thoroughly wash hands with soap and water. If appropriate, wear gloves.

• Always check the pen to make sure you’re using the correct type of insulin.
WASH HANDS AND VERIFY INSULIN
ATTACH NEEDLE AND PRIME

• Remove the paper tab from a new pen needle and screw onto pen clockwise.

• Select a dose of 2 units, remove the outer cap from the pen needle (save this for later) and the inner needle cap (through this away).

• Hold the pen with the needle pointing upward and tap insulin window so any air bubbles rise to the needle.

• Press injection button all the way. Insulin should come out of the needle (in either a stream or as drops). If insulin doesn’t come out, check for air bubbles and repeat the test two more times. If still no insulin, try a new needle.
This is a very important step. Attach needle carefully and be sure to prime before every dose. Bent needles or air bubbles are very common sources of inadequate insulin doses.
SELECT DOSE AND INJECTION SITE

- Be sure the dose marker is at 0 after priming the pen.
- Dial the pen to the appropriate dose for this patient.
- Select an appropriate site for injecting the insulin. Abdomen is preferred (back of upper arm, buttocks, thigh).
SELECT DOSE AND INJECTION SITE
INJECT THE DOSE

• Clean area of injection with an alcohol swab.
• Pinch a one inch fold of skin gently.
• Insert needle at a 90° angle.
• Release pinched skin and press the injection button in all the way, until all insulin is injected.
• Leave the needle in place and slowly count to 10 to prevent the insulin from leaking out of injection spot.
• Withdraw the needle straight out of the skin.
INJECT THE DOSE
INJECT THE DOSE

If any insulin comes out of the injection site after removing the needle, leave the needle in the skin for longer before removing it at the next insulin dose.
DISPOSE OF THE NEEDLE

• Replace the outer needle cap and twist the needle counter-clockwise to remove it.

• Dispose of the used needle in a sharps container.
DISPOSE OF THE NEEDLE

A sharps container should be available. Use it.