Disclosure and Conflict of Interest

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Pharmacological Rx of Nystagmus (off label)

**Drug therapy for jerk nystagmus**
- baclofen (periodic alternating nystagmus)
- 4-aminopyridine (downbeat nystagmus), (acetazolamide for episodic ataxias)
- clonazepam, chlorzoxazone (downbeat nystagmus)

**Drug therapy for pendular nystagmus:**
- memantine, gabapentin
- levetiracetam, clonazepam

**Drug therapy for congenital nystagmus:**
- memantine, baclofen, clonazepam

**Drug therapy for saccadic oscillations:** memantine, betablockers, ethosuximide, clonazepam
Drug Treatments Downbeat Nystagmus – Aminopyridines

- 4-aminopyridine (ampyra) (Compounding Pharmacy)
- NOTE may also lessen gaze-evoked nystagmus, improve pursuit and improve balance

Downbeat_Before34DAP
Downbeat_After34DAP

Anatomical Locus of PAN

Nodulus
PAN: Treatment

• **Baclofen (GABA-b)** provides the missing inhibition and stops the nystagmus.
  – Usually need only 10 mg PO TID.
  – Avoid precipitous discontinuation.
  – May work synergistically with memantine
  – Baclofen does not work as well in congenital PAN.
Elliptical Nystagmus
Rx of pendular nystagmus
Effects of saccades and blinks on pendular nystagmus
Congenital Nystagmus
Rx of CN with memantine
McLean et al, 2007
Saccadic oscillations: Opsoclonus
Opsoclonus
Updating our circuit models with ‘real’ neurons with membrane kinetics, ion channels and neurotransmitters

Understanding the ion channels involved leads to TARGETED PHARMACOTHERAPY
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