Gabapentin AKA Neurontin

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abapentin (brand name Neurontin) appears to be the "new Prozac." It was on the 2001 list of the top 50 prescription medications dispensed in pharmacies. Since its release in 1993 for the treatment of partial seizures in children and adults with epilepsy, gabapentin has also been studied for use in many different causes of pain (reflex sympathetic dystrophy, diabetic neuropathy, neuropathy from chemotherapy, Guillain-Barré syndrome, restless legs, and other neuropathic pain, muscle, and joint pain). Smaller studies have been done for migraines, tremors, certain muscle disorders (stiff-person syndrome), certain eve movement problems (nystagmus), manic-depressive illness (bipolar disorder), schizophrenia, substance abuse, and even for sleep maintenance problems, and perimenopausal hot flashes.

A search of the medical literature yields over 1,000 references to its uses in therapy, although the FDA has so far approved it only for epileptic seizures and, in May 2002, for post-herpetic neuralgia (shingles). A recent review of its use in neuropathic pain suggests it can be started and increased over a week or so to effective doses in the 1,800-3,600 mg per day range (lower in people with kidney disease), with excellent reduction in pain and improvement in quality of life, mood, and sleep.¹

This breadth of use of gabapentin is due in part to its mechanism of action. Calcium channels ("voltage-gated") are important in nerve cell growth, nerve cell activity levels, and nerve cell death and have been found to be altered in animal models of neuro-

pathic pain.² Gabapentin seems to help correct this.

Because of the involvement of these channels in the health of nerve cells, gabapentin was also tested for its ability to protect nerves in animals³ and in people with Lou Gehrig's disease,⁴ but was not found to be helpful.

The popularity that gabapentin has attained certainly relates to its broad effectiveness for various neurologic conditions, including pain, but also to its modest side effects. Adverse effects (commonly dizziness or imbalance, fatigue, and sleepiness) are usually mild to moderate, but occur soon after starting the drug, don't appear to get worse at higher doses, and often go away after the first month. Gabapentin doesn't interact with other medications (although it shouldn't be taken at the same time as certain antacids, like Maalox), and only rarely causes allergic reactions.

Polio survivors, experiencing pain from nerve or muscle areas, restless legs, or disturbed sleep because of these factors, might be recommended to try gabapentin by their physician, as an "off-label" use supported by the various studies reported in the medical literature. However, the common side effects of fatigue or imbalance might not be well tolerated by a post-polio person who already has problems with low daytime energy levels and declining mobility. Starting at lower doses and increasing more slowly over time might minimize these undesirable effects.

References

- 1. Backonja, M., & Glanzman, R.L. (2003). Gabapentin dosing for neuropathic pain: Evidence from randomized, placebocontrolled clinical trials. *Clin Ther*, 25(1), 81-104.
- 2. Luo, Z.D., Calcutt, N.A., Higuera, E.S., et al. (2002). Injury type-specific calcium channel alpha 2 delta-1 subunit up-regulation in rat neuropathic pain models correlates with antiallodynic effects of gabapentin. *J Pharmacol Exp Ther*, 303(3), 1199-1205.
- 3. Rekling, J.C. (2003). Neuroprotective effects of anticonvulsants in rat hippocampal slice cultures exposed to oxygen/glucose deprivation. *Neurosci Lett*, 335(3), 167-170.
- 4. Kalra, S., Cashman, N.R., Caramanos, Z., Genge A., & Arnold, D.L. (2003). Gabapentin therapy for amyotrophic lateral sclerosis: Lack of improvement in neuronal integrity shown by MR spectroscopy. *AJNR Am J Neuroradiol*, 24(3), 476-480.