



PIC QUESTION OF THE WEEK: 11/19/07

Q: What are the current treatment recommendations for phantom-limb pain?

A. There are a number of neuropathic pain syndromes that result in chronic disability for many patients. These include Complex Regional Pain Syndrome type one (CRPS I), previously known as reflex sympathetic dystrophy (RSD), and post-amputation or *phantom limb* pain. RSD is characterized by chronic neuropathic pain resulting from soft tissue, bone, or nerve injury. The pain is usually described as burning or aching. Signs and symptoms include autonomic (sweating, warmth, etc.), motor (weakness, dystonia, tremors, etc.), and trophic changes (bone atrophy, hair loss, etc.). The skin may be red and edematous. Phantom-limb (now referred to as *phantom pain*) pain occurs in about 50-80% of people who undergo amputation and is described as a shooting, burning, throbbing, stabbing, or squeezing sensation of the phantom limb. Certain positions, movement, pressure affecting the limb, as well as physical and psychological factors can trigger the onset of pain. *Phantom* pain should not be confused with *residual-limb* or *stump pain* which affects the area adjacent to the amputated body part. Clinical characteristics of phantom pain are dependent on the extent and site of injury. Temperature, oxygenation, and local inflammation are also contributing factors. The management of phantom pain is complex and may require intervention by several healthcare providers. Referral of the patient to a pain clinic is sometimes required. Non-drug treatment measures include psychological evaluation and rehabilitation techniques. Local infiltration of anesthetics, transdermal lidocaine patches, and epidural blockade have occasionally been successful. Surgical revision of the stump may also be considered. There is no standard treatment for this condition and the number of drugs used in its management is extensive. These include opioid analgesics, calcitonin, and ketamine. Tricyclic antidepressants such as amitriptyline and the older antidepressants have frequently been used; however, controlled trials supporting their efficacy are lacking. The selective serotonin uptake inhibitors (SSRIs) have generally been ineffective for treating most types of neuropathic pain. Gabapentin in a daily dose of 2.4 g was determined to be somewhat beneficial in reducing *established* phantom pain when evaluated over a six-week period. Unfortunately, a recent study concluded that gabapentin (2.4 g per day for thirty days immediately after surgery) did not significantly reduce the incidence or intensity of phantom pain in patients undergoing lower limb amputation. These patients were evaluated on five occasions over a six month period. This disappointing finding will continue to stimulate research into alternative methods for managing this severe and often resistant form of neuropathic pain.

References:

- Flor H. Phantom-limb pain: characteristics, causes, and treatment. *Lancet Neurol* 2002;1(3):182-9.
- Beers MH, Porter RS, Jones TV, et al. Neuropathic pain. In: Beers MH, Porter RS, Jones TV, et al. eds. *The Merck Manual of Diagnosis and Therapy*, 18th ed. Whitehouse Station, NJ: Merck Research Laboratories;2006:1779-81.
- D'Arcy Y. Managing phantom limb pain. *Nursing* 2005;35(11):17-9.

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