FAST FACTS AND CONCEPTS #272
POSTHERPETIC NEURALGIA

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Background Postherpetic neuralgia (PHN) is a syndrome of zoster-associated pain persisting more than 3 months after resolution of an initial herpes zoster (HZ) rash ('shingles').

Epidemiology Inconsistencies in diagnosis and data collection make the incidence of HZ and PHN difficult to estimate (1,2). PHN develops rarely in those under 50 years. However, it occurs in 20% of persons 60 to 65 with HZ and its incidence rises to 30% in persons over 80 years old (1,2). Risk factors for PHN include severe acute shingles-related pain, rash severity (i.e., more than 50 lesions), increasing age, and immunocompromised status (3,4).

Pathophysiology In acute HZ, reactivation of the virus from the dorsal root ganglia of spinal or cranial nerves causes inflammation and damage to the affected nerve tissue, resulting in acute pain. Subsequently, primary afferent neurons responding to the acute neuronal damage of zoster reactivation can cause sensitization of the nociceptive dorsal horn neurons, resulting in a prolonged exaggerated response to non-noxious stimuli (1). This central sensitization is thought to be a key mechanism in the development and maintenance of the pain of PHN.

Natural History Most HZ patients experience resolution of the rash and acute HZ pain within two months (1). For those who develop PHN, prolonged severe disabling symptoms rarely remain beyond 6 months (5). A small subset may experience irreversible damage to skin and sensory abnormalities that can result in ongoing pain for years (2). For all patients with acute HZ and/or PHN, physical and emotional quality-of-life can be affected (6-8).

Prevention In adults over 60 years old, live vaccination against the zoster virus reduces overall incidence of HZ by 50% and PHN by two-thirds. It is contraindicated in patients with immune deficiencies (primary or acquired such as patients with leukemia), including patients taking immunosuppressants or high dose corticosteroids (9). Initiating antiviral drugs within 72 hours of rash onset reduces acute and chronic pain associated with HZ. There is no clear benefit to initiation after this window (10-12). Best available evidence does not support the routine use of glucocorticoids in preventing PHN (10).

Pain management strategies PHN is a quintessential neuropathic pain syndrome and the approach to treatment is similar to other neuropathic syndromes. Recent guidelines cite strong evidence for using tricyclic antidepressants (TCAs), gabapentinoids (gabapentin, pregabalin), opioids, lidocaine 5% patch, and capsaicin 8% patch to manage PHN (13,14). (See *Fast Facts* #49, 148, 255, and 271.) Strong evidence also supports combined therapy of gabapentin plus opioids or TCAs (14). Second-line therapies include topical salicylate and topical capsaicin 0.075% cream. Epidural steroid injections and acupuncture are likely no better than placebo (14). While serotonin norepinephrine reuptake inhibitors such as duloxetine are commonly used for neuropathic syndromes (see *Fast Fact* #187), there are currently no published trials regarding their use for PHN.

Cost There is limited literature regarding cost effectiveness among commonly used agents. The following table provides current information regarding starting dose, effective dose, and cost (15).

Drug	Starting dose (cost in USD/month)	Typical effective dose (cost/month)
Gabapentin 300 mg capsule	900 mg/day ($19)	1800 mg/day ($99)
Pregabalin 50 mg capsule	150 mg/day ($180)	450 mg/day ($180)
Desipramine 25 mg tablet	25 mg/day ($38)	100 mg/day ($99)
Nortriptyline 50 mg capsule	50 mg/day ($20)	75 mg/day ($20)
Lidocaine 5% patch	1 patch per 12 hours ($217)	1 patch/12 hours ($217)

Capsaicin 8% patch	1 patch per 90 days ($265)	1 patch/ 90 days ($265)

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