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Neuropathic Pain

Ms. S is a 36-year-old Caucasian female with metastatic invasive ductal breast carcinoma. She is being admitted to home hospice services. Her chief complaint during the admission visit is "burning, piercing" pain radiating from her xiphoid process along the ribs to the subscapular region of her back. She describes the intensity of her pain on average as 6 on a 0–10 scale, with discomfort escalating to 8 with a light touch or with predictable activities and movements. The pain began four months ago when she was diagnosed with acute herpes zoster (AHZ) (i.e., shingles). However, the pain did not abate with the resolution of the AHZ rash. The discomfort is causing difficulty sleeping, interfering with her ability to participate in normal activities of daily living, and leading to progressive withdrawal from her husband and three-year-old son.

Ms. S was diagnosed three years earlier with invasive ductal breast carcinoma and treated with a modified radical mastectomy with lymph node dissection, chemotherapy with doxorubicin and cyclophosphamide, and hormonal therapy with tamoxifen. Ms. S had a two-year, disease-free interval but experienced disease recurrence with metastases to the bone (i.e., L4–5, pelvis, and right femur), ovaries/adrenals, and liver. She underwent palliative radiation therapy to her lumbar spine, pelvis, and right femur for painful bone metastases and palliative chemotherapy with capecitabine.

Following her final round of chemotherapy, Ms. S developed AHZ. A painful vesicular rash erupted along the T 2–4 dermatome, which lasted 14 days. She was treated with acyclovir 800 mg orally (po) five times per day for 10 days. This antiviral treatment was initiated within 48 hours of the rash onset.

Ms. S's current medications include tamoxifen 10 mg po twice daily, dexamethasone 4 mg po twice daily, famotidine 20 mg po twice daily, sustained-release oxycodone HCl 10 mg po every 12 hours, and immediate-release oxycodone 5 mg po for breakthrough pain. She is using between four and six doses of immediate-release oxycodone daily for exacerbations of pain with incomplete relief.

Ms. S is diagnosed with postherpetic neuralgia (PHN) with associated mechanical allodynia and hyperalgesia. The following pain management was instituted.

- Amitriptyline 10 mg po daily at bedtime
- 5% lidocaine patch over the painful region of the chest wall daily in the morning and removed at bedtime
- Sustained-release oxycodone 20 mg po every 12 hours and immediate-release oxycodone 10 mg po for breakthrough pain

The home hospice nurse visited Ms. S three days after initiation of this new regimen. Ms. S rated her pain on average as 3 out of 10 and noted a decrease in the intensity of the painful paroxysms. Over the prior 24 hours, she used two doses of immediate-release oxycodone. Ms. S noticed that she was able to fall asleep faster and sleep eight or nine hours a night. She expressed a new concern that she frequently was experiencing a dry mouth (xerostomia), which was making her uncomfortable.

The hospice nurse educated Ms. S and her family that peak analgesic effect of amitriptyline might not be achieved for one to three weeks and emphasized the importance of daily dosing at bedtime. Additionally, she explained that xerostomia was a normal side effect of amitriptyline. Ms. S was encouraged to take frequent sips of cold liquids, eat ice, and suck on hard candies to stimulate salivation.

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Clinical Problem Solving

Responding to this clinical challenge are Libby Bowers, RN, BSN, CCRN, CHPN, and Linda Gorman, RN, MN, CS, OCN®, CHPN. Bowers is the palliative care services coordinator at Santa Monica–UCLA Medical Center, a Cedars-Sinai Home Hospice case manager, and a UCLA oncology nurse practitioner student. Gorman is a palliative care/hospice clinical nurse specialist with Cedars-Sinai Medical Center and is a member of the board of directors of the Hospice and Palliative Nurses Association.

How is the neuropathic pain Ms. S is experiencing different from nociceptive (visceral and somatic) pain?

L. Gorman: Neuropathic pain results from injury to neural tissues and is sustained by aberrant somatosensory processing in the peripheral or central nervous system. Neuropathic pain presents with unique clinical characteristics differentiating it from nociceptive pain. Burning, stabbing, throbbing, lancinating, shock-like paroxysms, and pain elicited by non-noxious stimuli (allodynia) are common features of neuropathic pain.

In advanced cancer, 40% of patients experience neuropathic pain. Most neuropathic pain exists in combination with nociceptive pain, and nearly one-third of patients experience three or more distinct pain syndromes (Caraceni & Portenoy, 1999). Nociceptive pain involves normal processing within the nervous system of painful stimuli. Visceral pain is a subtype of nociceptive pain that characteristically is poorly localized and described as a deep pulling or stretching resulting from insults to internal organs. Somatic pain is well localized, described as gnawing, intense, and aching, and commonly is worse with weight bearing because of involvement of bone, muscles, or joints. In the case of Ms. S, the pain she experienced relating to her metastatic cancer was managed with opioids and steroids. However, the opioid analgesics and corticosteroids were ineffective in relieving the neuropathic pain of PHN.

What is the role of amitriptyline, lidocaine patches, opioids, and dexamethasone in the management of PHN?

L. Bowers: Amitriptyline, topical lidocaine patches, and dexamethasone are adjuvant analgesics. The primary indication for these drugs in a pain management regimen is their analgesic properties (McCaffery & Portenoy, 1999). Amitriptyline, a tertiary amine tricyclic antidepressant, is considered a first-line adjuvant analgesic in the management of PHN. Tricyclic antidepressants interfere with the reuptake of serotonin and norepinephrine and work synergistically with endogenous opioids to enhance descending modulation of nociceptive impulses. Amitriptyline would

The solutions offered to the clinical problems posed in this column are the opinions of the authors and do not represent the opinions or recommendations of the Oncology Nursing Society, the Oncology Nursing Forum, *or the editorial staff.*

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