Management of Breakthrough Pain in the Cancer Patient

a report by
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Effective pain management in the cancer patient requires an understanding of pain control strategies. Within this context, on-going assessment of pain is crucial. It is also important to determine whether the pain is nociceptive (somatic or visceral pain) or neuropathic since the two forms of pain are treated differently. Pain can also be a combination of these two types. Opioids and other traditional analgesics, such as non-steroidal anti-inflammatory drugs (NSAIDs), are the cornerstone of nociceptive pain management. Although evidence is emerging of the efficacy of opioids in controlling neuropathic pain,[1] antidepressants and anticonvulsants are considered first-line in the treatment of neuropathic pain.

Breakthrough Pain

Breakthrough pain is pain that is over and above the background pain that is being addressed by on-going pain control medications. Breakthrough pain is highly prevalent in cancer patients. In one study it was estimated that approximately one-half to two-thirds of patients with chronic cancer-related pain also experience episodes of breakthrough pain.[2] Moreover, the pathophysiology of the breakthrough pain was believed to be somatic in 33% of the patients, visceral in 20%, neuropathic in 27%, and mixed in 20%. Although it is an important component of cancer pain management, breakthrough pain is often overlooked.

Breakthrough pain in the cancer population is usually abrupt, acute, and can be very intense. The characteristics of breakthrough cancer pain vary from person to person, including the duration of the breakthrough episode and possible causes. The most common form is incidental breakthrough pain, which is associated with an activity. Other categories include idiopathic breakthrough pain, which occurs spontaneously, and breakthrough pain known as 'end-of-dose failure', which typically occurs at the end of the dosage interval of pain medication used to control the patient's persistent pain.

Management of Breakthrough Pain

Breakthrough pain can sometimes be alleviated by non-pharmacological methods such as repositioning or distraction methods. However, most breakthrough pain is of a moderate-to-severe nature and pharmacological intervention is considered first-line, with non-pharmacological methods used as a supplement.

Many physicians managing pain in cancer patients use a variety of breakthrough pain medications based on personal experience, past experience and the patient's pain scenario.[3] The current recommendation is to use a long-acting opioid formulation to treat persistent cancer pain and provide the patient with a fast-acting, short-duration analgesic to take when breakthrough pain occurs.[4] Whenever possible, the same opioid that is used in the long-acting form to manage the persistent pain should be prescribed for breakthrough pain. For example, if long-acting morphine is used for the persistent pain, immediate-release morphine should be used for the breakthrough pain. The recommended dose of the breakthrough pain medication is usually 10–15%, and sometimes more, of the total daily dose of the long-acting analgesic the patient is taking.[4]

The long-acting opioid dose should be increased for patients using a significant amount of medication for breakthrough pain, and the increase should reflect the total breakthrough dose taken in 24 hours. One proposed strategy for this increase is to use 25% of the

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total dose of immediate-release analgesic when slight reduction of pain is needed, 50% when moderate reduction is needed and 100% when a significant reduction is needed.[5]

It is important to note that the number of breakthrough doses taken during a 24-hour period is an indication of the efficacy of the initial persistent pain management plan. Similarly, an increase in breakthrough pain can also be useful as a diagnostic tool since it can indicate the presence of new pathology.

If pain does not respond to one analgesic medication, an equianalgesic dose chart should be used when changing the medication or route of administration.[4] Furthermore, opioid rotation can be used if pain can no longer be controlled with a specific regimen because of tolerance or intolerable and unmanageable side effects.[4]

Routes of Administration

The most common route of administration used to manage breakthrough pain is the oral route. It is convenient and allows for flexible dosing. A drawback of the oral route is that it has a slow onset of action (30–45 minutes).[4] Given intravenously (IV), opioids have a fast onset of action (five to 10 minutes) and can be rapidly titrated to address severe, escalating pain. A general principle, however, is to use the least invasive route of administration when managing chronic pain, so the oral route should be used whenever possible.[4]

Within the hospital setting, administration of pain medication can often be delayed, resulting in inadequate pain control. The effectiveness of oral pain medication taken on an as needed (prn) basis is often hampered because of the time delay in the delivery of the required medication by busy nurses.[5] The use of patient-controlled analgesia (PCA), an interactive method for managing pain that allows the patient access to pain medication when needed, has provided a safe solution to this dilemma for patients who are cognitively and physically able to use the PCA equipment.

IV PCA, whereby the patient can self-administer analgesic doses as needed, has become a mainstay in the management of moderate-to-severe pain in the hospital setting, particularly for post-operative pain. Effectively, with PCA, patients have more control over their pain management, especially their breakthrough pain. Though oral PCA has been used in the hospital setting, it is hampered by logistical issues.[4] The addition of a new oral PCA device to the pain management arena addresses these issues and allow patients, within a hospital setting, to access their own oral medication as needed for managing breakthrough pain.

The new oral PCA device is the first device that allows analgesics to be locked at the bedside. The analgesic prescription is programmed into the device so access is controlled within the prescribed limitations. The patient accesses the medication by swiping a radio frequency identification (RFID) wristband over the RFID reader on the device.

The new device also has a large 0–10 pain intensity scale on its face, and the patient is required to input the current pain rating at the time of the request for medication. The nurse or physician can query the device to obtain and even print the patient's pain rating and dosing history. It is hoped that the new oral PCA device will address an unmet need for the timely administration of oral medication for breakthrough pain within the hospital setting.

It is very important for prescribers and care providers to establish appropriate criteria for which patients are suitable for PCA, including the new oral PCA device. Patients will need to understand basic concepts of pain management, such as staying on top of the pain by taking pain medication before the pain becomes severe, and they must be cognitively and physically able to use the equipment.

Conclusion

The availability of long-acting opioid formulations has provided physicians and nurses with better therapeutic options for the management of chronic cancer pain. However, there is still a need to continuously encourage those who care for patients with chronic pain to assess for the presence of breakthrough pain. Moreover, it is important to inform and prepare the patient that breakthrough pain is a possibility. They must be encouraged to treat their breakthrough pain promptly as a means of improving their overall pain control and, ultimately, their function and quality of life. The new oral PCA device represents an excellent addition to the treatment options for breakthrough pain in these patients. ■

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