

On the horizon

A Physicians Newsletter on End-of-Life Care

*Horizon
Hospice*

Pain Control: Part 1 by Dr. Michael C. Marschke Medical Director, Horizon Hospice



Pain is a very personal, multifaceted phenomenon. It is also the second most common symptom at the end of life, number one being weakness. Weakness is sometimes improved by treating anemia, dehydration or depression, but it is quite difficult to resolve. By contrast, pain is very treatable. Yet, 60% of patients in a hospital with cancer are dying with uncontrolled pain. Since pain is more than the physical nerve injury, a step-wise inter-

disciplinary approach is vital to excellent pain control. The most crucial step entails both listening carefully to our patients and believing what they're telling us.

Understanding Barriers

We do not have an objective way to measure pain today. The patient is the only one who can tell us what kind of pain, how much pain, or even if any pain is present. Too often, the patient is unheard or disbelieved. Reports of pain often do not evoke a timely response in institutions, which is where 80-85% of Americans die, despite the widespread growth of hospices. How many times have we walked down the hall of a hospital or nursing home and heard a call light ringing incessantly or a patient in obvious discomfort screaming out repeatedly? Studies show that it takes an average of two hours for a patient to receive prn pain medication after a decision has been made that it's needed. If the medication lasts only four hours, the patient will be in pain for a third of the day.

Not believing the patient is a major barrier to pain control. As physicians, we have been taught to distrust anyone seeking narcotics. This began with government regulations requiring triplicate prescription pads intended to control misuse of these medications. Although most of these laws have been repealed, we've all been burned by patients who claim to seek pain relief and turn out to be lying or stealing to obtain drugs. Nonetheless, true addiction to narcotics occurs rarely in the treatment of end-of-life pain, especially cancer pain.

Getting a Good History

Getting a complete history of the pain is the only way to figure out which of the three physiologic types of pain a patient is experiencing. Somatic pain is typically a localized aching or

sharp pain, tender to touch, worse with movement, occasionally associated with swelling; it is likely responsive to warmth, ice, massage or other local measures. Visceral pain is usually ill-defined, poorly localized, cramping in nature, made worse with meals, and may be associated with gas, nausea, bloating, diarrhea or other bowel problems. Neuropathic pain is located in a dermatomal or stocking-glove distribution. It is often described as a burning, sharp, lancinating or numbing pain, worse with touch. An accurate account of the pain will aid the physician in prescribing the proper medication.

A good history is also the only way to get a measure of pain's intensity. The most well studied measure is the 0-10 scale, which can be attached to a visual scale. This scale is not useful clinically in comparing one person's pain to another's, but it is very useful in following the effects of the treatment on an individual patient's pain.

Treating the Whole Person

There are significant psychosocial components to the way patients experience pain. People who are depressed or anxious experience more pain or more severe pain. In fact, there may be certain patients for whom all pain is psychogenic. Social concerns like economic status may also play a role. Low-income urban residents generally tend to underreport their pain for many reasons. They may not want to be a burden, so they'll be stoic rather than complain. They may distrust physicians because of their socioeconomic advantages; or they may have a deep fear of narcotics from having lived in a neighborhood steeped in drug culture. There are also broad cultural differences in how people experience pain. Patients of certain cultures, such as African-Americans or Asians, may generally be more stoic about pain compared to those of other ethnic groups.

Spiritual concerns also play a role. One of our hospice patients complained of a severe, vague and diffuse pain, ranked at 8 on a 10-point scale. Increasing narcotic doses were not effective in relieving it. Through our conversations, I discovered he had an overwhelming fear of the unknown in the afterlife, which was before him like a brick wall in his face. Talking to our chaplain helped to not only relieve his fear, but also to control his pain. There are other people whose religious beliefs suggest they need to suffer more on earth to earn the privilege of going to a better place when they die. Such spiritual concerns often play at least as strong a role

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in suffering as strictly physical pain, especially at the end of life. Again, listening to the patient is key. In addition to understanding the type of pain and the degree of pain a patient experiences, we must put this suffering in the context of the patient's emotional, cultural and spiritual state to ensure optimal pain control.

Health care providers often seem to experience patients as more believable once they're admitted to hospice care. Certainly a holistic approach is supported by the interdisciplinary nature of hospice care, where we have nurses, social workers, chaplains and bereavement counselors who take time to discuss the way pain affects the whole person. Nevertheless, good pain relief can be implemented in any context by simply engaging the patient in the diagnostic process. My hope is that we will all work harder at hearing and believing what patients are telling us, whether or not they are in hospice. ■

Come to Horizon's 25th Anniversary Party!

On Saturday, June 7th, hundreds of Horizon supporters will gather at Preston Bradley Hall in the Chicago Cultural Center to honor President Michael Preodor, M.D., and Founder Ada Addington for 25 years of dedication to Horizon Hospice. The evening features

an elegant dinner, entertainment

by New York's famed cabaret singer KT Sullivan—and a live auction!

Call our Development Department at 312.733.2233 if you'd like to join us.



Pain Control: Part 2

Pain Control: Part 1 considered some of the barriers to pain control, the goals of a good history for pain and the interdisciplinary approach for chronic pain. Part 2 will address the details of the pharmacologic treatment for chronic pain. Chronic pain is present often—if not all day long—and usually gets worse over time as the condition progresses. This differs from acute pain, which tends to get better over time.

The 3-Step Pain Ladder

The goal of chronic pain control is to find a medication or combination of medications that keep the pain at a tolerable level for the patient, while minimizing side effects. A number of years ago, the World Health Organization created the WHO Pain Ladder—a simplified 3-step approach to treating chronic pain. Once pain is recognized, the initial step involves a non-narcotic analgesic, usually acetaminophen, plus an adjuvant; the choice of adjuvant depends on the physiologic type of pain being treated. Step 2 adds a mild opioid, like Tylenol #3, Vicodin, Darvocet, or Percocet to Step 1. Step 3 involves changing the opioid to a stronger narcotic, like morphine, oxycodone, fentanyl, dilaudid or methadone.

Adjuvants should be considered early in the course of treatment since they potentially reduce narcotic use. For somatic pain, the pain adjuvants are NSAIDs, COX 2 inhibitors and steroids. Although they can decrease narcotic use by up to 40% in boney metastases, NSAIDs are generally avoided for patients undergoing chemotherapy. In hospice, we tend to use diflunisal or the salsalates to minimize the GI toxicity and platelet effects. The new COX 2 inhibitors are also useful for reducing musculoskeletal pain without producing these side effects, though they have not been studied in bone metastasis. But, theoretically, they should work since this pain is created via the cyclo-oxygenase pathway. Steroids can also reduce this pain, and the euphoria and increased appetite sometimes produced with these drugs may make them particularly beneficial for hospice patients.

For crampy visceral pain, anticholinergics like Bentyl or Levsin may be useful. Other drugs like simethicone for gas, proton-pump inhibitors or H2 blockers for dyspepsia may also be beneficial. Steroids work well for the more constant visceral pain caused by a very enlarged liver or spleen with distention of the capsule.

Neuropathic pain tends to be one of the most difficult pains to control and the least responsive to narcotics. Tricyclic antidepressants and anti-epileptics are generally the best medications for neuropathy. Tricyclics take 4-6 weeks to work for depression, but they work for neuropathy in only 4-6 days. For

treating depression, one needs to start with a low dosage and advance slowly to avoid cardiac toxicity, but these medications can be increased every 4-7 days and should be advanced to therapeutic levels (for example, 100-200 mg a day of Elavil) before concluding that they will not work. Many anti-epileptics work in neuropathies, typically 60-70% of the time compared to placebo, which works 30% of the time. Carbamazepine has been used the longest and tends to have minimal side effects. Again, it works in 4-6 days; and if not effective at the starting dose, drug levels should be done to see if it is therapeutic before stopping it. Neurontin has also been studied, but in studies for neuropathy, doses of 400-800 mg TID were used. Many elderly and debilitated patients have side effects from this dose, with confusion and sedation being the most common. However, if the dose is increased gradually, these effects may be minimized. Unfortunately, Neurontin is also 20 to 30 times more expensive than carbamazepine.

Other useful adjuvants include topical agents, physical medicine, anesthetic techniques, radiation, and complementary and alternative medicines (CAM). Topical agents such as heat, cold, Ben Gay, capsaicin cream, and lidocaine cream offer some relief from somatic or neuropathic pain. Physical medicines including physical therapy, chiropractic and osteopathic treatments can relieve chronic back pain and other somatic pain. There are various anesthetic techniques, such as a celiac plexus block for localized pain due to pancreatic cancer, nerve root block for zoster pain, epidurals or spinal anesthetics for other painful syndromes. Radiation therapy can help reduce pain from bone metastases or bulky tumors. Various CAM techniques now widely used include acupuncture, meditation, yoga, massage therapy, hypnosis, art/music therapy, and healing touch. Many have proven effective. The mind has such a powerful effect on pain perception that whatever the patient believes will work many times does.

Steps 2 and 3 involve adding narcotics to the adjuvants. WHO put the more familiar opioids in Step 2. But they are usually combination products containing acetaminophen, and their use is consequently limited to a maximum amount of 4 grams of acetaminophen per day. This is equal to 12 Tylenol #3 or Vicodin, but only 6 Vicodin ES. The fact is, 1-2 tabs of all of these mild opioids are equianalgesic to 5-10 mg of immediate-release oral morphine. Thus, using a low oral dose of strong opioids like 5 mg of liquid morphine, 1 mg of diluadid, or 5 mg of oxycodone, would be the same as using Step 2 drugs. And all of these can be increased as needed without fear of acetaminophen toxicity. Thus, Steps 2 and 3 should really be just one step of adding narcotics, but starting low and titrating up as needed.

The Therapeutic Window

Using narcotics correctly is the key to excellent chronic pain

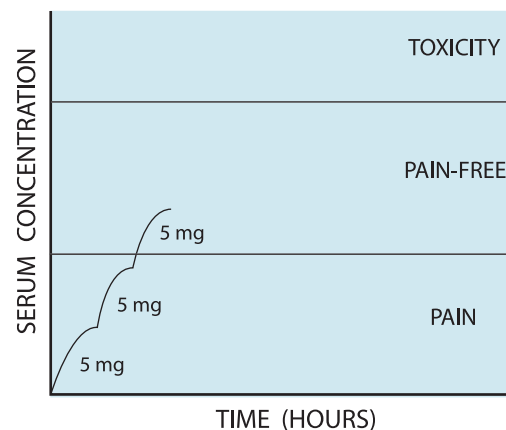
control at the end of life. Following some simple pharmacokinetics will result in achieving adequate pain control and avoiding toxicity every time. The goal is to bind enough opioid receptors to put the patient into his or her therapeutic window of pain relief.

Getting into this therapeutic window quickly requires adherence to 4 rules of thumb. **(1) Start Low:** Start with a low dose. The example graphed below starts with 5 mg of Roxanol, which is equivalent to 1 Tylenol #3. **(2) Use Short-Acting Meds First:** Start immediate-release medications first. Roxanol is the liquid form of immediate-release morphine. **(3) Dose at Peak:** Add a dose when the medication is at peak effectiveness, rather than at the end of its duration. In this case, Roxanol peaks in 30-60 minutes, so it can be ordered q 1 hour. That way, if the initial dose is too low, additional doses can be used to get into the window as the graph suggests. Dosed at q 4 hours, 5 mg of Roxanol would never relieve the pain. **(4) Give the Patient Control:** Let the patient control the amount of medication needed to control pain. Unfortunately, in the institutional setting, prn often means "per the RN," who controls how often medication is given. The only way to get true patient control is with a PCA pump. By contrast, in the home care setting, the bottle of Roxanol is at the patient's bedside for use as needed.

Follow-Up Evaluation

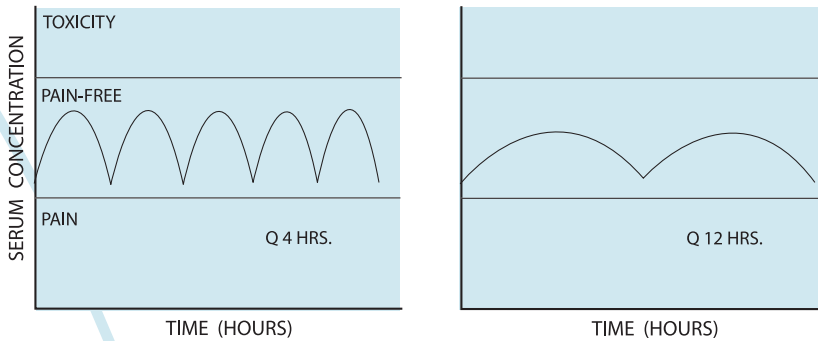
This regimen should be evaluated often. Evaluate it after the first hour to see if one dose worked and to remind the patient to take it again if it did not. After the duration, or 4 hours later, check to see how much it actually took to get into the patient's therapeutic window. If it took 3 doses of 5 mg, prescribe 15 mg to be taken at once to achieve the same effect. There may be a rare person who is still in pain after 4 hours and 4 doses. This q-1-hour dosing will begin reaching a steady state as the first dose wears off, so the dosage must be increased up to 10-20 mg at a time.

Once a quick-acting dose that works is found, the next goal for chronic pain control is to keep patients in this therapeutic window. Rather than requiring drug administration q 3-4 hours to stay in this window, it's best to convert to a long-acting formulation. Start by giving patients one day on a short-acting dose that works and advising them to take it liberally, q 2-3 hours—whenever the pain begins returning, rather than waiting for it to return full force. Then total up how many mg it took that day to keep the patient in this window, and convert that in a mg-per-mg fashion to a long-acting medication, like MS Contin. In our example, keeping the patient



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comfortable the first day took 8 doses of 15 mg of Roxanol, or a total of 120 mg of morphine. So, it follows that the next order should be for 60 mg of MS Contin q 12 hours.



A dose for breakthrough pain should be ordered for when the maintenance dose is not enough. The easiest formula for calculating a breakthrough dose is to use 10-20% of the total daily dose of the opioid in an immediate-release form. In the example graphed, that would be 12-24 mg of immediate-release morphine. So the order would be for 15-20 mg of MSIR tabs or Roxanol q 2-3 hours prn.

Finally, be sure to re-evaluate often. Chronic pain can change over time. This is usually a result of disease progression, but up to 20% of people on narcotics for more than 2 weeks develop physical tolerance and need more medicine because of up-regulation of opioid receptors. A good rule

of thumb is that if a patient needs 4 or more breakthrough doses in a day, it's time to increase the long-acting dose in a mg-for-mg fashion. So, in this example, if the patient consistently needed 4 extra 15-mg doses of MSIR per day, increasing the MS Contin to 90 mg q 12 hours is the next step. This would then raise the breakthrough dose to 18-36 mg (10-20%) at a time—or 20-30 mg of MSIR tabs.

There are many different tables to use for converting one narcotic to another. It is sometimes helpful to start at 50% of the conversion dose to avoid cross-tolerance in a particular individual, especially with higher doses.

Three other factors to remember in treating chronic pain follow. (1) NEVER use Demerol because a neurotoxic metabolite can build up in 1 week—even sooner in patients with renal insufficiency. (2) The most significant toxicity is respiratory suppression. This will always be preceded by somnolence, so you can watch for it. Nausea, constipation, and sedation may occur as side effects at low doses, but they can be prevented or managed with other medicines. Nausea and sedation usually wear off over time, while constipation must be managed proactively. (3) True addiction in chronic cancer pain is extremely rare. In hospice care, it is a non-issue.

Following these simple steps should result in effective pain control with very low toxicity in the vast majority of patients. ■

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