A majority of patients with advanced cancer (up to 80%) experience moderate to severe pain. This number represents about 1.25 million Americans. According to the World Health Organization (WHO) about 80% of these patients can have adequate pain control using a stepwise approach utilizing an analgesic ladder as described by the WHO. About 10% of patients will require more complicated treatments (including invasive techniques), while another 10% will not have their pain adequately controlled, despite aggressive treatment. A comprehensive approach to the treatment of these painful conditions often requires a multidisciplinary approach with cooperation between oncologists, pain management physicians, radiation oncologists, primary care physicians, psychologists, physical therapists, and a host of other disciplines.

Assessment

The first step in managing painful conditions in the cancer patient is to assess the characteristics and potential causes of the pain. The existing pain can be directly related to the cancer, a result of treatment, or a pre-existing painful condition made worse by failing health.

Pain resulting directly from tumor effects include lumbar plexopathy, bony pain from direct metastases, chest wall and intercostals nerve pain from direct spread, brachial plexopathy, spinal nerve root pain from tumor pressure, brachial plexopathy, celiac plexopathy, and visceral pain from capsular swelling or invasion.

Treatment related pain includes chemotherapy induced neuropathies, esophagitis, mucositis, pulmonary fibrosis. Radiation therapy can cause neuritis or plexopathy just about anywhere in the body.

Finally, pain can result from a pre-existing problem such as osteoarthritis, spinal stenosis, or diabetic neuropathy which is made worse by the disease or treatment.

When evaluating a patient with cancer pain it is important to consider Dame Cicely Saunders’ concept of ‘total pain’. This refers to complex interaction of nociceptive pain with emotional, spiritual, and social factors. The most successful treatments will deal with all these aspects of patient care, resulting in more success and sense of well being.

Pharmacologic Treatment of Cancer Pain

While the WHO’s analgesic ladder has proven to be overly simplistic, it is still a good starting point for the treatment of pain in cancer patients. The initial treatment should consist of nonsteroidal anti-inflammatory drugs and acetaminophen. These should be tried on an around-the-clock dosing schedule for maximal effect. NSAIDs can be especially effective in bone pain and soft tissue metastases with inflammation. If these prove inadequate, they should be continued as adjuvant therapy once opioids are started.
The initiation of opioids should be considered if non-opioid analgesics fail. The top two steps of the WHO’s ladder consists of weak opioids followed by stronger opioids. Weak opioids include codeine, hydrocodone, and oxycodone. They are often combined with acetaminophen, aspirin, or ibuprofen, thus limiting their maximum dose due to toxicity of the co-analgesic. Constipation and nausea are common complaints on initiation of therapy and while the nausea usually subsides in several days, constipation should be treated aggressively.

Tramadol should also be considered. It is a synthetic analog of codeine with opioid-like properties combined with serotonin and norepinephrine reuptake inhibition, similar to tricyclic antidepressants. It is now available in a sustained release formulation.

Stronger opioids should be considered once dose titration has been achieved with short acting opioids. Over a 24 hour period, one can use the amount of oral or IV short acting opioid (morphine IR, oxycodone, and dilaudid) needed to achieve pain control, and use this dosage to convert to a long acting formulation. There is no evidence that one opioid is substantially more efficacious than another, and the drug chosen is often the one the practitioner is most comfortable with, or is dictated by patient tolerance. A breakthrough dose of medication is usually about 10% of the patient’s 24 hour opioid dose given every 2-4 hours. For patients with poor GI absorption a fentanyl patch or parenteral opioid should be considered.

Other analgesic adjuvants such as antidepressants, anticonvulsants, topical local anesthetics, antispasmodics, or corticosteroids should also be considered depending on the etiology of the patient’s pain. Neuropathic pain usually requires a combination of medications to treat effectively.

**Interventional Management of Cancer Pain**

In up to 10% of cancer patients, pharmacologic treatment fails to offer adequate pain relief. These are the patients often referred to the Pain Management Center for consultation. A number of interventional procedures exist which can offer dramatic relief for the cancer pain patient.

If the pain is confined to the distribution of a single nerve or plexus then chemical neurolysis can often achieve good results. When pain from tumors of the upper abdomen occurs (i.e. pancreas, stomach, duodenum, hepatobiliary tree) then celiac plexus neurolysis can be effective. Studies show that celiac plexus neurolysis is more effective than pharmacologic therapy and should be considered early in the course of terminal illness. Neurolysis of the hypogastric plexus, stellate ganglia, splanchnic nerves, intercostal nerves, peripheral somatic nerves are all possible in patients with terminal disease and regional pain.

Intrathecal chemical neurolysis may also be used when pain is confined to four or fewer dermatomes. Absolute alcohol or phenol is injected intrathecally, and if performed correctly, can ablate the dorsal roots (much like a surgical rhizotomy) without affecting motor nerves.

It is particularly effective in chest wall pain secondary to tumor invasion. Pelvic and perineal pain can also be treated with a saddle block neurolysis although fecal and urinary incontinence are possible.

When pain is more diffuse or not amenable to neurolysis, then epidural or intrathecal delivery systems are an excellent option. Neuraxial opioid delivery is also a consideration when side effects from IV or oral opioids are intolerable. Only about 1/10th the dose of opioid is needed via epidural and 1/100th the dose if given intrathecally. If pain is below the T1 level then a combination of opioid and local anesthetic can be used to help anesthetize the painful area, much like anesthesiologists do for postoperative pain control. A temporary catheter is used to assess the degree of pain control and side effects before going on to permanent placement. If the patient is expected to live less than six months, then an epidural port-a-cath is a reasonable choice. If life expectancy is likely longer than six months then an intrathecal pump is a more common choice.

Finally, it is important to remember to treat the cancer pain patient from a holistic aspect as well. The affective, cognitive, social, spiritual, and behavioral aspects must also be considered. Psychotherapy, physical therapy, biofeedback, acupuncture, Reiki, transcutaneous electrical nerve stimulation (TENS), therapeutic touch, massage, behavioral-cognitive training can all have important benefits that improve the patients quality of life.

As noted in the introduction, there are many treatment modalities available for the cancer pain patient. It is rare that comfort cannot be achieved if a cooperative effort is undertaken by the numerous disciplines caring for these patients.

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Dr. Razvi’s areas of interest include cancer pain management and palliative care. He is Board Certified in Anesthesiology and has added qualifications in Pain Management by the American Board of Anesthesiology.