

# Pharmacologic Therapy for Acute Pain

EDWARD D. BURDELL, MD, MICHAELMARIYA NAJMED, MD, and STELLA DE WITTENHILPharmD  
New University of New York at Buffalo School of Medicine and Biomedical Sciences, Buffalo, New York

The approach to patients with acute pain begins by identifying the underlying cause and a disease-specific treatment. The first-line pharmacologic agent for the symptomatic treatment of mild to moderate pain is acetaminophen or a nonsteroidal anti-inflammatory drug (NSAID). The choice between these two medications depends on the type of pain and patient risk factors for NSAID-related adverse effects (e.g., gastrointestinal, cardiovascular, or central-nervous-system effects). Potent NSAIDs have similar analgesic effects. However, cyclooxygenase-2 selective NSAIDs (e.g., celecoxib) must be used with caution in patients with cardiovascular risk factors and are more expensive than nonselective NSAIDs. If these first-line agents are not sufficient for moderate pain, medications that target separate pathways (mechanisms), such as an acetaminophen/opioid combination, are reasonable choices. Severe acute pain is typically treated with potent opioids. At each step, adjunct medications directed at the underlying condition can be used. Strong medications with dual actions (e.g., tapentadol) are also an option. There is little evidence that one opioid is superior for pain control, but there are some pharmacologic differences among opioids. Because of the growing misuse and diversion of controlled substances, caution should be used when prescribing opioids, even for short-term treatment. Patients should be advised to properly dispose of unused medications. (See also *Pharmacy*, 2014;17(1):36-77). Copyright © 2014 American Academy of Family Physicians.



**A**cute and chronic pain have been increasingly recognized as being on a continuum, with their development influenced by the initial pain experience and individual biopsychosocial factors.<sup>1</sup> A survey involving adults showed that during a three-month period, 29% experienced low back pain, 19% experienced a migraine or tension headache, 10% experienced neck pain, and 7% experienced facial/jaw pain.<sup>2</sup> A survey of ambulatory office visits, analgesics were the most commonly prescribed or newly prescribed medications at a rate of 24.9%.<sup>3</sup>

## Approach to the Patient

A focused clinical assessment, based on body region, can help determine the cause of pain.<sup>4</sup> During the assessment for underlying conditions, acute pain can be controlled using disease-specific pharmacologic treatment (with or without nonpharmacologic treatment). Regular evaluation of pain control using a

pain scale allows the physician to monitor treatment effectiveness and to determine when changes are warranted.<sup>5</sup> Scheduled, rather than as-needed, dosing provides more consistent drug levels and therefore more consistent pain control.

The World Health Organization's (WHO) pain relief ladder (Figure 1) provides a stepped approach to the management of cancer pain and can also be used for patients with acute and chronic noncancer pain.<sup>6</sup> Adjunct medications can be initiated as needed at any step of the ladder.<sup>7</sup> These medications include antidepressants (e.g., tricyclics for acute neuropathic pain), anticonvulsants (e.g., gabapentin [Neurontin]), and glucocorticoids (e.g., dexamethasone to reduce postoperative pain, nausea, and vomiting). The analgesic effectiveness increases with each step up on the ladder, as does the potential for medication abuse or addiction. Table 1 summarizes medications used to treat acute pain in adults.<sup>8,9</sup>