Pharmacologic Treatment for Low Back Pain: One Component of Pain Care

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KEYWORDS

• Low back pain • Acetaminophen
• Nonsteroidal anti-inflammatory drugs • Muscle relaxants
• Antidepressants • Antiepileptics • Opioids

Low back pain (LBP) is a highly prevalent health problem. Most adults experience LBP, pain in the lumbar region with or without leg pain (sciatica), at some time in their lives. Classification of LBP is generally based on duration of pain (acute or chronic) and location of pain (nonspecific or secondary). LBP is defined as acute when it lasts less than 1 month, subacute when it lasts 1 to 3 months, and chronic when it lasts longer than 3 months. About 90% of patients presenting to primary care with LBP have nonspecific LBP, which is LBP that cannot be attributed to a specific cause, such as infection, tumor, or fracture.[1,2] Up to 90% of patients with acute nonspecific LBP have improvement of symptoms within 3 months; however, recurrence rates are high, and a number of patients may develop some degree of chronic LBP. This article addresses the pharmacologic treatment of nonspecific LBP and not the treatment of secondary LBP. This article also discusses the most commonly prescribed oral medications for LBP but not the less commonly prescribed pharmacologic treatments, such as transdermal and intrathecal therapy.

The evidence on pharmacologic treatment of LBP comes from clinical trials that have multiple limitations, including short-term trials only, selected trial populations that may not reflect clinical practices, trials using single treatments, and trials measuring pain reduction without evidence of improved functioning. Also, acute LBP is frequently self-limiting, and thus, nearly any treatment administered in the acute phase may seem to be effective. The most commonly prescribed oral medications for LBP include acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, antidepressants, antiepileptics, and opioids. Current evidence

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shows that these medications all have equal efficacy in reducing pain, provide only partial pain reduction at best,[3] and are each associated with different adverse side effects. Evidence supports the efficacy of short-term analgesic therapy for LBP; however, the safety and efficacy of long-term analgesic therapy is not clear. Therefore, current evidence-based guidelines recommend limiting the duration of use for most medications in the treatment of LBP.[4]

PHARMACOLOGIC TREATMENT OF LBP

Acetaminophen and NSAIDS

Because studies show all analgesics to have equal efficacy in pain reduction, it is recommended that the agents with least risk of harm be used first. Therefore, acetaminophen or NSAIDs are recommended as first-line agents for LBP. A systematic review found no clear difference between acetaminophen and NSAIDs for pain relief in patients with LBP. Acetaminophen, unlike NSAIDs, is not known to be associated with myocardial infarction or gastrointestinal bleeding and may be preferable for patients at risk of these conditions. All NSAIDs appear to be equivalent in efficacy for acute LBP, so the choice of agent may be based on patient preference and cost.

Recommendation

Evidence supports a short course of acetaminophen or NSAIDs for acute or chronic LBP. Long-term use should be avoided.[4]

Muscle Relaxants

Muscle relaxants are divided into 2 categories:

1. Antispastic agents, baclofen, tizanidine, dantrolene, and diazepam, are not recommended for nonspecific LBP. These agents are indicated for spasticity related to central nervous system injury, such as multiple sclerosis.
2. Antispasmodic agents, cyclobenzaprine, methocarbamol, metaxalone, and carisoprodol, may be used short-term (2 weeks) for acute LBP. Long-term use is not recommended.

Evidence from clinical trials regarding muscle relaxants is limited because of short-term trials, poor methodological design, and small numbers of patients. There is no clear evidence that one muscle relaxant is superior to another, so the choice of agent should be based on risk of side-effects, drug interactions, and cost. Adverse effects, particularly dizziness and drowsiness, are consistently reported with all muscle relaxants. Cyclobenzaprine (Flexeril) has been the most heavily studied muscle relaxant with proven short-term effectiveness. Cyclobenzaprine 5 mg is as effective as 10 mg, with fewer adverse effects.[4] The sedative properties of cyclobenzaprine may benefit patients with sleep disturbance. Methocarbamol (Robaxin) is less sedating but has also been less studied. Metaxalone (Skelaxin) has not been studied since the 1970s. One fair-quality study showed no difference between metaxalone and placebo. Carisoprodol (Soma) is metabolized to meprobamate (sedative controlled substance) with addiction potential. Benzodiazepines also have addiction potential and are not recommended for the treatment of muscle spasm. The only trial evaluating a benzodiazepine available in the United States found no difference between diazepam and placebo for muscle spasm.

Recommendation

Evidence supports a short course (2 weeks) of antispasmodic agents, such as cyclobenzaprine or methocarbamol, for acute LBP. Long-term use is not recommended.