

Acute non-specific low back pain in primary care

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Abstract

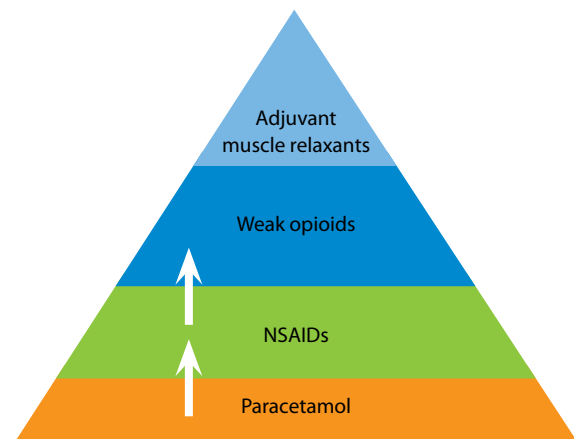
Acute non-specific low back pain, usually a result of muscle strains and ligament sprains from lifting, exercising or moving unexpectedly, is commonly encountered in primary care. At any given time, approximately one in five adults will report low back pain. Although non-specific low back pain is usually self-limiting and improves with time, there is an array of treatment options to facilitate this process and to minimise potential suffering, disability and absenteeism from work. This article will provide a review of such treatment options.

Introduction

Acute non-specific low back pain, usually a result of muscle strains and ligament sprains from lifting, exercising or moving unexpectedly, is commonly encountered in primary care. At any given time, approximately one in five adults will report low back pain.¹ Although non-specific low back pain is usually self-limiting and improves with time, there is an array of treatment options to facilitate this process and to minimise potential suffering, disability and absenteeism from work.

Routine imaging is not required when making a diagnosis of non-specific or simple low back pain. A comprehensive history and physical examination usually suffice. This contrasts with back pain associated with radiculopathy or spinal stenosis, or back pain associated with serious underlying pathologies, including tumours, fractures and infection.² Overall, 1% of patients presenting with low back pain in primary care have a neoplasm, 4% have fractures and 1-3% have a prolapsed or herniated disc.³ A history of early (< 20 years) or late (> 50 years) age of onset, significant trauma, unexplained weight loss, the presence of human immunodeficiency virus and severe, progressive or widespread neurological changes, should prompt further investigation, by diagnostic imaging.⁴

Treatment of non-specific low back pain typically results in a significant improvement within 4-6 weeks, although residual pain and the associated disability often persist for months.⁴ Risk factors for the development of chronic (> 12 weeks) low back pain, including biological, psychological, occupational, lifestyle and iatrogenic, should therefore be assessed and addressed at the outset.^{4,5} General therapeutic measures include providing patients with back care information, advice and reassurance. Bed rest is discouraged.⁶ Rather, patients are advised to maintain their normal activities and to return to work as early as possible, despite their pain. Exercise therapy is also not recommended at this stage, but spinal manipulation may be considered for those who are unable to resume normal activities.⁷



NSAIDs: nonsteroidal anti-inflammatory drugs

Figure 1: A stepwise approach to treating acute non-specific low back pain

Pharmacological therapy may be initiated once baseline pain, and the potential benefits and risks associated with drug treatment, have been evaluated. Multimodal therapy is often required to achieve adequate analgesia. Approximately two thirds of primary care patients with low back pain are prescribed two or more drugs⁸ that act at different sites of the nociceptive pathway allowing for additive or even synergistic effects. Evidence-based guidelines for the treatment of acute low back pain advocate a stepwise approach⁴ (Figure 1).

Analgesia for acute non-specific low back pain is usually paracetamol based. Some have found that paracetamol is as effective as nonsteroidal anti-inflammatory drugs (NSAIDs) at a dose of 4 g per day, while others have found no difference compared to placebo at 3 g a day.⁹ Nonetheless, there is general consensus that analgesic therapy should be initiated with paracetamol, especially when the back pain is of mild to moderate severity, and that agents from different classes are added as required.⁴ The total daily dose should not exceed 4 g

Table I: Examples of available combination analgesics in South Africa

Combination	Paracetamol	NSAID	Weak opioid
Mypaid Forte*	Paracetamol 325 mg	Ibuprofen 400 mg	
Mypaid*	Paracetamol 250 mg	Ibuprofen 200 mg	
Ibupain*	Paracetamol 250 mg	Ibuprofen 200 mg	
Mypradol*	Paracetamol 250 mg	Ibuprofen 200 mg	Codeine 10 mg
Gen-Payne*	Paracetamol 250 mg	Ibuprofen 200 mg	Codeine 10 mg
Co-codamol*	Paracetamol 500 mg		Codeine 8mg
Adco-Napacod*	Paracetamol 500 mg		Codeine 10 mg
Tramacet*	Paracetamol 325 mg		Tramadol 37.5 mg
Nurofen Plus*		Ibuprofen 200 mg	Codeine 12.8 mg
Ibucod*		Ibuprofen 200 mg	Codeine 10 mg

NSAID: nonsteroidal anti-inflammatory drug

because of the risks of acute liver injury, and patients who are fasting, who drink large quantities of alcohol, or who have other risk factors for hepatotoxicity, should probably not take more than 2 g a day.¹⁰ Currently, there is a trend for manufacturers to lower the recommended maximum daily dose in order to limit the risks associated with unintentional overuse of this readily accessible and popular analgesic.

NSAIDs, such as ibuprofen, diclofenac, indomethacin, mefenamic acid and naproxen, are recommended second-line treatment of acute low back pain, unless patients have contraindications which preclude their use, such as renal impairment, bleeding disorders, are on anticoagulant therapy or are pregnant. There is strong evidence that various types of NSAIDs are equally effective for acute low back pain,¹¹ while some have found that ibuprofen may be associated with the lowest relative risk of serious gastrointestinal complications.¹² The addition of gastroprotective agents, such as proton-pump inhibitors¹³ or prostaglandin analogues¹⁴ may reduce the risk of gastric ulceration and bleeding, but may result in a higher risk of drug-drug interactions, given that multimodal treatment is often required to achieve adequate analgesia in acute non-specific low back pain. It is noteworthy that the elderly are more susceptible to the risks associated with polypharmacy. Selective cyclooxygenase-2 inhibitors, such as celecoxib, which have a lower risk for gastrointestinal toxicity, but a higher risk for cardiovascular toxicity, may be suitable alternatives.¹¹

Weak opioids, including codeine and tramadol, have been found to be moderately effective in pain relief, with a mean decrease in pain intensity of at least 30%,⁹ and are therefore considered reasonable third-line treatment options for acute low back pain.⁴ While opioids are associated with superior functional outcomes, they may have high rates of short-term, dose-dependent adverse events, particularly constipation and sedation.⁹ Patients at high risk of respiratory depression and addiction should not receive these agents.

Muscle relaxants are recommended in many guidelines for either third- or fourth-line use for acute low back pain.⁴ They may be divided into antispasmodic medicines, such as benzodiazepines and cyclobenzaprine, or antispasticity agents, such as dantrolene

and baclofen.¹⁵ Of these, there is only strong evidence for non-benzodiazepine antispasmodic medicines in acute low back pain.¹⁵ They should be used with caution, considering their effects on the central nervous system and their potential for drowsiness and dizziness.^{15,16}

An aggressive treatment of acute low back pain may prevent chronic or lifelong disability,¹⁷ but compliance with the medication may be constrained by the different dosing intervals required for the individual analgesics. Combination analgesics may be preferred when more than one agent is required. Another potential advantage of combination analgesics is that pharmacodynamic synergism allows for a reduction in dose of the components and their associated side-effects¹⁸ (Table I).

Once the acute episode has abated, post-treatment exercises that focus on back mobilising and back and abdominal muscle strengthening¹⁹ are recommended in order to prevent recurrences and the considerable demands that non-specific low back pain places on physical, psychological and socio-economic health.⁴

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